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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____
Commission file number 1-16725

PRINCIPAL FINANCIAL GROUP, INC.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

**711 High Street,
Des Moines, Iowa 50392**
(Address of principal executive offices)

42-1520346
(I.R.S. Employer
Identification Number)

(515) 247-5111
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class
Common Stock, par value \$0.01

Name of each exchange on which registered
Nasdaq Global Select Market

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment of this Form 10-K.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act.) Yes No

As of January 30, 2019, there were outstanding 278,313,686 shares of Common Stock, \$0.01 par value per share of the Registrant.

The aggregate market value of the shares of the Registrant's common equity held by non-affiliates of the Registrant was approximately \$15.1 billion based on the closing price of \$52.95 per share of Common Stock on June 29, 2018.

Documents Incorporated by Reference

The information required to be furnished pursuant to Part III of this Form 10-K is set forth in, and is hereby incorporated by reference herein from, the Registrant's definitive proxy statement for the annual meeting of stockholders to be held on May 21, 2019, to be filed by the Registrant with the United States Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the year ended December 31, 2018.

PRINCIPAL FINANCIAL GROUP, INC.
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NOTE CONCERNING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the Management's Discussion and Analysis of Financial Condition and Results of Operations, contains statements that constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements relating to trends in operations and financial results and the business and the products of the Registrant and its subsidiaries, as well as other statements including words such as "anticipate," "believe," "plan," "estimate," "expect," "intend" and other similar expressions. Forward-looking statements are made based upon management's current expectations and beliefs concerning future developments and their potential effects on us. Such forward-looking statements are not guarantees of future performance.

Actual results may differ materially from those included in the forward-looking statements as a result of risks and uncertainties. Those risks and uncertainties include, but are not limited to, the risk factors listed in Item 1A. "Risk Factors."

PART I

Item 1. Business

Principal Financial Group, Inc. ("PFG") is a leader in global investment management offering businesses, individuals and institutional clients a wide range of financial products and services, including retirement, asset management and insurance through our diverse family of financial services companies. We had \$626.8 billion in assets under management ("AUM") and approximately 24.2 million customers worldwide as of December 31, 2018.

Our global asset management businesses serve a broad range of investors in 86 countries through offices in 25 countries, including in the major financial centers worldwide. We provide long-term investment strategies to institutional, retirement, high net worth and retail clients by offering a range of capabilities including equity, fixed income, real estate and other alternative investments, as well as fund offerings.

In the U.S., we primarily focus on small and medium-sized businesses, which we define as companies with fewer than 1,000 employees, by offering a broad array of retirement and employee benefit solutions and individual insurance solutions to meet the needs of the business owner and their employees. We are a leading provider of corporate defined contribution plans. We are also a leading employee stock ownership plan ("ESOP") consultant. In addition, we are a leading provider of nonqualified plans, defined benefit plans and plan termination annuities. We are also one of the largest providers of specialty benefits insurance product solutions. We believe small and medium-sized businesses are an underserved market, offering attractive growth opportunities in the retirement and employee benefit markets.

Additionally, we believe we have a significant opportunity to leverage our U.S. retirement expertise in select international markets that have adopted or are moving toward private sector defined contribution pension systems. Our international asset management and accumulation businesses focus on the opportunities created as aging populations around the world drive increased demand for retirement accumulation, retirement asset management and retirement income management solutions.

Our Reportable Segments

We organize our businesses into the following reportable segments:

- Retirement and Income Solutions;
- Principal Global Investors;
- Principal International and
- U.S. Insurance Solutions.

We also have a Corporate segment, which consists of the assets and activities that have not been allocated to any other segment.

See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 16, Segment Information" for financial results of our segments.

Retirement and Income Solutions Segment

Our asset accumulation activities in the U.S. date back to the 1940s when we first began providing pension plan products and services. We now offer a comprehensive portfolio of products and services for retirement savings and retirement income:

- To businesses of all sizes with a concentration on small and medium-sized businesses, we offer products and services for defined contribution plans, including 401(k) and 403(b) plans, defined benefit plans, nonqualified executive benefit plans, ESOP services and pension risk transfer (formerly known as full service payout) services. For more basic retirement services, we offer SIMPLE Individual Retirement Accounts ("IRA") and payroll deduction plans;
- To large institutional clients, we also offer investment only products, including investment only guaranteed investment contracts ("GICs"); and
- To employees of businesses and other individuals, we offer the ability to accumulate savings for retirement and other purposes through mutual funds, individual annuities and bank products.

We organize our Retirement and Income Solutions operations into two business groupings:

- Retirement and Income Solutions — Fee: includes full service accumulation, trust services and individual variable annuities; and
- Retirement and Income Solutions — Spread: includes individual fixed annuities, investment only, pension risk transfer and banking services.

Retirement and Income Solutions — Fee

Full Service Accumulation

We offer a wide variety of investment and administrative products and services for defined contribution plans, including 401(k) and 403(b) plans; defined benefit plans; nonqualified executive benefit plans and ESOPs. A 403(b) plan is a plan described in Section 403(b) of the Internal Revenue Code that provides retirement benefits for employees of tax-exempt organizations and public schools.

Products

Full service accumulation products respond to the needs of plan sponsors seeking both administrative and investment services for defined contribution plans or defined benefit plans. The investment component of both the defined contribution and defined benefit plans may be in the form of a guaranteed account, separate account, a mutual fund offering or a collective investment trust. In addition, defined contribution plan sponsors may also offer their own employer securities as an investment option under the plan.

We deliver both administrative and investment services to our defined contribution plan and defined benefit plan customers through annuity contracts, collective investment trusts and mutual funds. Group annuity contracts and collective investment trusts used to fund qualified plans are not required to be registered with the United States Securities and Exchange Commission ("SEC"). Our mutual fund service platform is called Principal Advantage. It is a qualified plan service package based on our series mutual fund, Principal Funds, Inc. ("PFI"). We offer investments covering the full range of stable value, equity, fixed income, real estate and international investment options managed by our Principal Global Investors segment as well as third party asset managers. In addition, full service accumulation offers plan sponsors trust services through an affiliated trust company.

As of December 31, 2018, we provided full service accumulation products to (a) over 38,500 defined contribution plans including \$153.9 billion in assets and covering 5.2 million eligible plan participants, and (b) to over 2,000 defined benefit plans, including \$19.1 billion in assets and covering over 315,000 eligible plan participants. As of December 31, 2018, approximately 52% of our full service accumulation account values were managed by our Principal Global Investors segment. Third party asset managers provide asset management services with respect to the remaining assets. As it relates to our full service accumulation account values, 33% were managed entirely by the third party asset managers that were not under contract to sub-advise a PFG product, 8% were sub-advised and 7% represented employer securities.

Markets and Distribution

We offer our full service accumulation products and services to plans, including qualified and nonqualified defined contribution plans and defined benefit plans. Our primary target market is plans sponsored by small and medium-sized businesses, which we believe remains under-penetrated. According to Cerulli Associates, in 2016, only 9% of businesses with less than 99 employees, 57% of businesses with between 100 and 499 employees and 78% of businesses with between 500 and 999 employees offered a 401(k) plan. The same study indicates that 85% of employers with between 1000 and 4999 employees and 100% of employers with 5,000 or more employees offered a 401(k) plan in 2016. Cerulli Associates has yet to release updated statistics on the percentage of businesses offering a 401(k) plan in years subsequent to 2016.

We distribute our full service accumulation products and services nationally, primarily through a captive retirement services sales force. As of December 31, 2018, 95 retirement services sales representatives in 41 offices, operating as a wholesale distribution network, maintained relationships with over 14,100 independent advisors, consultants and agents. Retirement services sales representatives are an integral part of the sales process alongside the referring consultant or independent advisor. We compensate retirement services sales representatives through a blend of salary and production-based incentives, while we pay independent advisors, consultants and agents a commission or fee.

As of December 31, 2018, we had a separate staff of over 240 service and education specialists located in the sales offices. These specialists play a key role in the ongoing servicing of plans by providing local services to our customers, such as reviewing plan performance, investment options and plan design; communicating the customers' needs and feedback to us and helping employees understand the benefits of their plans. The following summarizes our distribution channels:

- We distribute our annuity-based products through intermediaries who are primarily state licensed individuals.
- Principal Advantage platform is targeted at defined contribution plans through broker-dealer distribution channels. Principal Advantage gives us access to Financial Industry Regulatory Authority ("FINRA")-registered distributors who are not traditional sellers of annuity-based products and broadens opportunities for us in the investment advisor and broker-dealer distribution channels.
- Through our Retire Secure strategy we provide financial education and other assistance to individual investors who are participants/members of employer-based accumulation solutions to help them achieve financial security.

We believe our approach to full service accumulation plan services distribution, which gives us a local sales and service presence, differentiates us from many of our competitors. We have also established a number of marketing and distribution relationships to increase the sales of our products and services.

Individual Variable Annuities

Individual variable annuities, which are savings vehicles through which the customer makes one or more deposits of varying amounts and intervals, are offered to individuals.

Products

Our individual variable deferred annuities provide customers with the flexibility to allocate their deposits to mutual funds managed by the Principal Global Investors segment or unaffiliated third party asset managers. As of December 31, 2018, 94% of our \$9.0 billion in variable annuity account balances was allocated to mutual funds managed by the Principal Global Investors segment and our guaranteed option. The remaining 6% was allocated to mutual funds managed by unaffiliated third party asset managers. Generally speaking, the customers bear the investment risk for the variable options and have the right to allocate their assets among various separate mutual funds. The value of the annuity fluctuates in accordance with the experience of the mutual funds chosen by the customer. Customers have the option to allocate all or a portion of their account to our guaranteed option, in which case we credit interest at rates we determine, subject to contractual minimums.

Customers may elect a living benefit guarantee (commonly known in the industry as a guaranteed minimum withdrawal benefit, or "GMWB"). We bear the GMWB investment risk. Our goal is to hedge the GMWB investment risk through the use of sophisticated risk management techniques. As of December 31, 2018, \$6.2 billion of the \$8.7 billion of variable annuity separate account values had the GMWB rider. Our major source of revenue from individual variable annuities is mortality and expense fees we charge to the customer, generally determined as a percentage of the market value of the assets held in a separate investment sub-account. Account balances of variable annuity contracts with the GMWB rider were invested in separate account investment options as follows:

	December 31, 2018	December 31, 2017
	(in millions)	
Balanced funds	\$ 5,902.3	\$ 6,512.2
Equity funds	186.1	243.8
Bond funds	103.2	128.6
Money market funds	4.4	2.6
Specialty funds	1.0	1.2
Total	\$ 6,197.0	\$ 6,888.4
Percent of total variable annuity separate account values	71%	71%

Markets and Distribution

Our target markets for individual variable annuities include owners, executives and employees of small and medium-sized businesses and individuals seeking to accumulate and/or eventually receive distributions of assets for retirement. We market variable annuities to individuals for both qualified and nonqualified retirement savings.

We sell our individual variable annuity products through our affiliated financial representatives, including Principal Connection, who collectively accounted for 97%, 97% and 96% of annuity sales for the years ended December 31, 2018, 2017 and 2016, respectively. The remaining sales were made primarily through unaffiliated broker-dealer firms. Principal Connection is our direct distribution channel for retail financial services products to individuals. Principal Connection's services are available by phone, email or mail. Affiliated financial representatives continue to be the primary distribution channel of our variable deferred annuities.

Retirement and Income Solutions — Spread

Individual Fixed Annuities

Individual fixed annuities may be categorized in two ways: (1) deferred, in which case assets accumulate until the contract is surrendered, the customer dies or the customer begins receiving benefits under an annuity payout option, or (2) payout, in which case payments are made for a fixed period of time or for life.

Products

Fixed Deferred Annuities. Our individual fixed deferred annuities consist of both single premium deferred annuity contracts and flexible premium deferred annuity contracts ("FPDAs"). The majority of FPDA contracts limit the period of time deposits are allowed to one year. For certain contracts, the principal amount is guaranteed. We credit the customer's account with a fixed interest rate for a specified number of years. Thereafter, we reset the interest rate credited to the contract based upon our discretion, subject to contractual minimums, by taking into account market and other conditions. We also offer a fixed deferred annuity where the interest credited is linked to an external equity index, subject to maximum and minimum values. One source of income from fixed deferred annuities is the difference between the investment income earned on the underlying general account assets and the interest rate credited to the contracts. We bear the investment risk because, while we credit customers' accounts with a stated interest rate, we cannot be certain the

investment income we earn on our general account assets will exceed that rate. The Principal Global Investors segment manages the assets supporting these contracts.

Fixed Income Annuities. Our individual fixed income annuities consist of single premium immediate annuity contracts ("SPIAs") and deferred income annuity contracts ("DIAs"). SPIAs and DIAs are products where the customer pays a premium in return for periodic benefit payments. SPIA payments begin immediately and DIA payments begin after a deferral period, during which a return-of-premium death benefit is included. Payments may be contingent upon the survival of one or two individuals or payments may be fixed, meaning payments are contractually guaranteed and do not depend on the continuing survival of any individual. Our major source of income from fixed immediate annuities is the difference between the investment income earned on the underlying general account assets and the interest rate implied in the calculation of annuity benefit payments. We bear the investment risk because we cannot be certain the investment income we earn on our general account assets will exceed the rate implied in the SPIA and DIA contracts. The Principal Global Investors segment manages the assets supporting these contracts.

Markets and Distribution

Our target markets for individual fixed annuities include owners, executives and employees of small and medium-sized businesses and individuals seeking to accumulate and/or eventually receive distributions of assets for retirement. We market fixed annuities to individuals for both qualified and nonqualified retirement savings.

We sell our individual fixed annuity products through our affiliated financial representatives, including Principal Connection, who collectively accounted for 7%, 7% and 7% of annuity sales for the years ended December 31, 2018, 2017 and 2016, respectively. The remaining sales were made through banks, brokerage general agencies, mutual fund companies and unaffiliated broker-dealer firms. The majority of overall annuity sales were from non-affiliated distribution channels, as a result of focused efforts to increase fixed annuity sales through these channels.

Investment Only

Products

The two primary products for which we provide investment only services are GICs and funding agreements.

GICs and funding agreements pay a specified rate of return. The rate of return can be a floating rate based on an external market index or a fixed rate. Our investment only products contain provisions disallowing or limiting early surrenders, including penalties for early surrenders and minimum notice requirements.

Deposits to investment only products are predominantly in the form of single payments. As a result, the level of new deposits can fluctuate from one fiscal quarter to another. The amounts earned by us are derived in part from the difference between the investment income earned by us and the amount credited to the customer. The Principal Global Investors segment manages the assets supporting the contractual promises.

Markets and Distribution

We issue traditional GICs and funding agreements primarily to retirement plan sponsors and other institutions. We also offer GICs as part of our full service accumulation products which are issued primarily to tax-qualified retirement plans. Funding agreements are issued directly to non-qualified institutions, the Federal Home Loan Bank of Des Moines ("FHLB Des Moines") and unconsolidated special purpose entities. As part of our funding agreement-backed note programs, U.S. and foreign institutional investors purchase debt obligations from the special purpose entity which, in turn, purchases the funding agreement from us with terms similar to those of the debt obligations. The strength of this market is dependent on debt capital market conditions. As a result, our sales through this channel can vary widely from one quarter to another.

Pension Risk Transfer

Products

Pension risk transfer products respond primarily to the needs of pension plan sponsors in the form of single premium group annuities, which are immediate or deferred annuities that provide a current or future specific income amount, fully guaranteed by us. The majority of our business originates from defined benefit plans that are being terminated. In these situations, the plan sponsor transfers all its obligations under the plan to an insurer by paying a single premium. Generally, plan sponsors restrict their purchases to insurance companies with superior or excellent financial quality ratings because the Department of Labor ("DOL") has mandated that annuities be purchased only from the "safest available" insurers.

Since premium received from pension risk transfer products is generally in the form of single payments, the level of premiums can fluctuate depending on the number of large-scale annuity sales in a particular quarter. The Principal Global Investors segment manages the assets supporting pension risk transfer account values.

Markets and Distribution

Our primary distribution channel for pension risk transfer products is comprised of several specialized home office sales consultants working through consultants and brokers that specialize in this type of business. Our sales consultants also make sales directly to institutions. Our nationally dispersed retirement services sales representatives act as a secondary distribution channel for these products.

Banking Services

IRAs are provided by Principal Bank, primarily funded by retirement savings rolled over from qualified retirement plans. Principal Bank is a U.S. federal savings bank that was formed in February 1998. As of December 31, 2018, Principal Bank had nearly 400,000 customers and approximately \$3.1 billion in assets. Principal Bank operates under a limited purpose charter and may only accept deposits held in a fiduciary capacity, may not hold demand deposits or own commercial loans and cannot originate loans.

Products

The IRAs offered by Principal Bank provide Federal Deposit Insurance Corporation ("FDIC")-insured retirement solutions for its customers. The IRAs are held in savings accounts, money market accounts and certificates of deposit. The deposit products provide a relatively stable source of funding and liquidity for Principal Bank and are backed by purchases of investment securities and residential mortgage loans.

Markets and Distribution

Principal Bank offers bank products and services to participants rolling out of qualified retirement plans primarily serviced by affiliates of PFG. Principal Bank services customers by telephone, mail and internet.

Principal Global Investors Segment

Our Principal Global Investors segment manages assets for sophisticated investors around the world using a multi-boutique strategy that provides diverse investment capabilities including equity, fixed income, real estate and other alternative investments. We also have experience in asset allocation, stable value management and other structured investment strategies. We focus on providing services to our other segments in addition to our retail mutual fund and third party institutional clients. We maintain offices in Australia, Belgium, Brazil, China, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxembourg, the Netherlands, Portugal, Singapore, Spain, Switzerland, the United Arab Emirates, the United Kingdom and the United States.

We deliver our products and services through our network of specialized investment groups and boutiques including Principal Global Equities; Principal Global Fixed Income; Aligned Investors; Principal Real Estate Investors, LLC; Principal Real Estate Europe Limited; Spectrum Asset Management, Inc.; Post Advisory Group, LLC; Columbus Circle Investors; Edge Asset Management; Finisterre Capital LLP; Origin Asset Management LLP; and Principal Portfolio Strategies. The Principal Global Investors investment groups and boutiques managed \$393.5 billion in assets as of December 31, 2018.

We have been providing mutual funds to customers since 1969. We offer mutual funds to individuals, businesses and institutional investors for use within variable life contracts, variable annuity contracts and employer-sponsored pension plans; as a rollover investment option and for general investment purposes. We plan to grow into a top advisor-sold mutual fund company with a sales force focused on multiple channels. As of December 31, 2018, as reported by the Strategic Insight, we are ranked 18th according to AUM (long-term funds) of the intermediary sold mutual fund companies.

We also maintain various other domestic and global fund platforms, separately managed accounts and segregated accounts for some larger institutional and retail investors.

Our products and services are provided for a fee as defined by client mandates. Our fees are generally driven by AUM.

Boutiques

Our multi-boutique strategy is diversified across the following primary asset classes and service delivery options.

Equity Investments. As of December 31, 2018, Principal Global Equities, Aligned Investors and Principal Real Estate Investors, LLC along with Columbus Circle Investors, Edge Asset Management and Origin Asset Management LLP managed \$147.7 billion in global equity assets. Our equity capabilities encompass large-cap stocks, mid-cap stocks, small-cap stocks and real estate investment trusts in developed and emerging markets worldwide.

Fixed Income Investments. As of December 31, 2018, Principal Global Fixed Income and Principal Real Estate Investors, LLC along with Spectrum Asset Management, Inc.; and Post Advisory Group, LLC managed \$184.8 billion in global fixed income assets. Collectively, our experience in fixed income management spans multiple economic and credit market cycles and encompasses all major fixed income security types and sectors, including commercial mortgage-backed

securities ("CMBS"). Our research and risk management capabilities in worldwide debt markets provide a strong foundation for broadly diversified "multi-sector" portfolios, tailored to specific client objectives.

Alternative Investments. We offer products and services through other alternative asset classes including managing private real estate equity through Principal Real Estate Investors, LLC and Principal Real Estate Europe Limited; commercial mortgages and bridge/mezzanine loans through Principal Real Estate Investors, LLC and managing hedge fund mandates through our Finisterre Capital LLP boutique. As of December 31, 2018, we managed \$56.0 billion in alternative asset classes.

Principal Portfolio Strategies. Principal Portfolio Strategies is a specialized asset allocation boutique offering multi-asset and/or multi-manager portfolio construction services that aim to deliver reliable, risk-adjusted investment outcomes to individual investors, institutional investors and participants in employer-sponsored plans.

Products and Services

Products offered by the Principal Global Investors segment include individually managed accounts, separately managed accounts for high net worth individuals and several fund platforms for retail and institutional investors, as described below.

Principal Funds, Inc. PFI is a series mutual fund that offers investment options for defined contribution plans, individuals, institutional investors, adviser fee-based programs, and other retirement plan clients. We report the results for this fund in the Retirement and Income Solutions segment or Principal Global Investors segment based on the distribution channel associated with the AUM.

Principal Variable Contracts Funds, Inc. Principal Variable Contracts Funds, Inc. is a series mutual fund that provides investment options for variable annuity and variable life insurance contracts issued by the Principal Life Insurance Company ("Principal Life") and other insurance companies not affiliated with Principal Life. AUM backing our variable annuity contracts is reported in the Retirement and Income Solutions segment. AUM backing our variable life insurance contracts is reported in the U.S. Insurance Solutions segment.

Other Principal Global Investors Funds. Principal Global Investors maintains various fund platforms including Qualifying Investor Alternative Fund and Undertaking for Collective Investment in Transferable Securities funds domiciled in Dublin, Business Trusts, Exchange Traded Funds and other boutique sponsored funds. These funds are generally managed by our boutiques.

Markets and Distribution

Our products and services are distributed through various channels to reach and meet the needs of a broad investor base. We distribute our services through institutional and retail sales representatives, relationship management, and client service professionals who work with consultants and directly with investors to acquire and retain institutional clients, retail clients and other investors. We also maintain relationships with independent broker-dealers to distribute our products and services, maintaining relationships with over 64,000 independent brokers, consultants and agents. As of December 31, 2018, Principal Global Investors and its boutiques had over 750 third party institutional clients in 40 countries with \$103.5 billion of AUM.

Principal International Segment

Our Principal International segment has operations in Latin America and Asia. We focus on locations with growing middle classes, favorable demographics and increasing long-term savings, ideally with defined contribution retirement markets. We entered these locations through acquisitions, start-up operations and joint ventures.

The activities of our Principal International segment reflect our efforts to accelerate the growth of our AUM by capitalizing on the international trend toward private sector defined contribution pension systems and individual long-term savings. We offer pension accumulation products and services, mutual funds, asset management, income annuities and life insurance accumulation products.

Markets, Products and Distribution

Latin America

Brazil. We offer pension accumulation and income annuity products through a co-managed joint venture, Brasilprev Seguros e Previdência S.A. ("Brasilprev"). We owned 25.005% of the economic interest and 50.01% of the voting shares as of December 31, 2018. The partner is Banco do Brasil ("Banco"), which had approximately 4,800 Brazilian branches as of September 30, 2018.

Brasilprev has the exclusive distribution rights of its pension accumulation and income annuity products through the Banco network until October 2032. Our joint venture provides products for the retirement needs of individuals and employers. Banco's employees sell these products directly to individual clients through its bank branches. In addition, our joint venture reaches corporate clients through two wholesale distribution channels: (1) a network of independent brokers who sell to the public and (2) Banco's corporate account executives who sell to existing and prospective corporate clients. As of December 31, 2018, Brasilprev had \$67.7 billion of AUM.

We also distribute pension and other protection products through a digital insurance brokerage company, Ciclic Corretora de Seguros S.A ("Ciclic"). Our partner is BB Corretora De Seguros e Administradora De Bens S.A. (a subsidiary of Banco). We owned 25.005% of the economic and 50.01% of the voting shares of Ciclic as of December 31, 2018.

We offer mutual fund and asset management services through Claritas Administração de Recursos Ltda. ("Claritas"), our wholly owned Brazilian mutual fund and asset management company with \$1.3 billion of AUM as of December 31, 2018. The company manages equity funds, balanced funds, managed accounts and other strategies for affluent clients, mass affluent clients and institutions and sells through its multi-channel distribution network. Claritas will be realigned from the Principal International segment to the Principal Global Investors segment in 2019.

Chile. We offer a complete array of pension accumulation and income annuity products. We also offer mutual fund, asset management services and life insurance accumulation products. Our subsidiaries in Chile had \$43.9 billion of AUM as of December 31, 2018.

We offer mandatory employee-funded pension and voluntary savings plans through Administradora de Fondos de Pensiones Cuprum S.A. ("Cuprum"). We owned 97.97% of Cuprum as of December 31, 2018, and the rest is publicly floated. Cuprum's products are sold through a proprietary sales network of approximately 800 sales employees as of December 31, 2018.

We offer income annuity and life insurance accumulation products through Principal Compañía de Seguros de Vida Chile S.A., our wholly owned life insurance company. The annuity products are distributed through a network of brokers and independent agents. Life insurance accumulation products are offered to individuals through brokers and financial advisors.

We offer voluntary savings plans and mutual funds through Principal Administradora General de Fondos S.A., our wholly owned mutual fund company. Products are distributed to retail and institutional clients through our proprietary sales force, financial advisors, brokerage houses and alliances with financial institutions.

Mexico. We offer pension accumulation, mutual funds and asset management services through our wholly owned companies with \$12.9 billion of AUM as of December 31, 2018.

We offer mandatory pension plans through Principal Afore, S.A. de C.V., Principal Grupo Financiero. We manage and administer individual retirement accounts under the mandatory privatized social security system for all employees in Mexico. As of December 31, 2018, we had approximately 3.0 million individual retirement accounts. We distribute products and services through a proprietary sales force of approximately 1,330 sales representatives as of December 31, 2018, as well as independent brokers who sell directly to individuals.

On February 20, 2018, we finalized the acquisition of MetLife Afore, S.A. de C.V., which was MetLife, Inc.'s pension fund management business in Mexico. At the time of closing, the acquisition increased our AUM by \$3.8 billion, making us the fifth largest AFORE in Mexico in terms of AUM.

We offer mutual funds and asset management services through Principal Fondos de Inversión, S.A. de C.V., Operadora de Fondos de Inversión, Principal Grupo Financiero. We distribute products and services through a sales force of approximately 40 employees as of December 31, 2018, and through distribution agreements with other financial entities. We offer both domestic and international products, typically sold directly to clients.

Asia

China. We offer mutual funds and asset management services to individuals and institutions through a joint venture, CCB Principal Asset Management Co., Ltd. ("CCB PAM"). We owned 25% and China Construction Bank ("CCB") is the majority partner with 65% ownership as of December 31, 2018. CCB PAM distributes its mutual funds through CCB and third party distributors such as banks, securities brokers and e-channels. CCB provides widespread distribution support for the joint venture via its extensive network of approximately 15,000 bank branches as of June 30, 2018, and brand awareness. Although not included in our reported AUM, the joint venture had \$149.3 billion of AUM as of December 31, 2018.

Hong Kong Special Administrative Region. We offer both pension saving and mutual fund products to corporate and retail clients through wholly owned companies with \$9.5 billion in AUM as of December 31, 2018.

We offer two types of pension saving schemes, Mandatory Provident Fund and Occupational Retirement Schemes Ordinance, which we distribute through third party intermediaries such as insurance companies, independent financial advisors, brokers and employee benefit consultants. Our most significant partnership is with AXA Hong Kong with whom we have a 15-year distribution partnership through 2030. We serviced approximately 595,000 accounts as of December 31, 2018. To help Hong Kong customers save for retirement beyond the mandatory pension schemes, Principal also offers mutual funds to retail customers through third party intermediaries, the most significant being banks.

India. We offer mutual funds and asset management services to both retail and corporate customers through Principal Asset Management Private Limited, previously known as Principal Pnb Asset Management Company Private Limited. In August 2018, upon receiving regulatory approval, Principal and Punjab National Bank completed a shares purchase agreement, giving Principal full ownership of the asset management business. Mutual funds are sold through

independent distributors, including banks, and directly through proprietary sales offices. Digital platforms are also being developed to enhance customer experience. As of December 31, 2018, our subsidiary in India had \$1.0 billion of AUM.

Southeast Asia. We offer mutual funds, asset management services and pension accumulation products through our joint ventures CIMB-Principal Asset Management Berhad ("CPAM") and CIMB-Principal Islamic Asset Management ("CPIAM"). The partner is CIMB Group ("CIMB"), a leading ASEAN universal bank which has a strong presence in the region. CPAM also manages a significant amount of institutional asset mandates. The joint ventures had \$19.1 billion of AUM as of December 31, 2018.

CPAM distributes conventional and Islamic mutual funds through the branches of its partner bank (around 850 bank branches throughout ASEAN and beyond) and through an agency sales force of over 7,000 agents selling to retail customers as of November 30, 2018. CPAM also distributes its mutual funds through third party institutions including other banks and security houses.

CPAM has wholly owned subsidiaries in Singapore (CIMB-Principal Asset Management (S) Pte. Ltd.), Indonesia (PT CIMB-Principal Asset Management) and Thailand (CIMB-Principal Asset Management Company Limited). CPIAM also has a Dubai International Financial Centre Representative Office, CIMB-Principal Islamic Asset Management, which commenced effective May 31, 2018.

In May 2018, Principal and CIMB completed agreements for Principal to increase ownership of CPAM and CPIAM to 60% in both companies. The joint ventures will continue to be co-managed by both companies.

U.S. Insurance Solutions Segment

Our U.S. Insurance Solutions segment activities date back to 1879 when we first began selling individual life insurance products. We expanded our offering to include group insurance products in the 1940s and have continued to expand our product portfolio over time. We help businesses and individuals by offering solutions that grow and protect their assets, and enable them to live their best lives:

- To small and medium sized businesses, we offer employer paid and voluntary group benefits, multi-life individual disability insurance and solutions to protect the business and personal insurance needs of owners and executives.
- To individuals, we offer individual life and individual disability insurance solutions.

We organize our operations into two divisions: Specialty Benefits insurance and Individual Life insurance. However, we share key resources in our core areas such as strategic leadership, distribution and marketing.

Specialty Benefits Insurance

Specialty Benefits insurance, which includes group dental, vision, life, critical illness, accident and disability insurance and individual disability insurance, is an important component of the employee benefit offering at small and medium-sized businesses. We offer voluntary products for group dental, vision, life, critical illness, accident and disability. We also offer group dental, vision and disability on a fee-for-service basis. Our individual disability insurance is also sold on an individual or multi-life basis.

Products and Services

Group Dental and Vision Insurance. Our plans provide partial reimbursement for dental and vision expenses. As of December 31, 2018, we had almost 65,000 group dental and vision insurance policies in force covering over 1.7 million employees. According to Life Insurance and Market Research Association ("LIMRA"), we were the 6th largest group dental insurer in terms of number of contracts/employer groups in force in 2017. In addition to indemnity and preferred provider organization dental offered on both an employer paid and voluntary basis, we offer a prepaid dental plan in Arizona through our Employers Dental Services, Inc. subsidiary. We also offer a discount dental product nationally. Our indemnity vision and our managed care vision products are offered on both an employer paid and voluntary basis.

Group Life Insurance. Our group life insurance provides coverage to employees and their dependents for a specified period. As of December 31, 2018, we had over 65,000 group policies providing nearly \$152 billion of group life insurance in force to approximately 2.5 million employee lives. According to LIMRA, in 2017 we were ranked 3rd in the U.S. in terms of the number of group life insurance contracts in force. We currently sell traditional group life insurance that does not provide for accumulation of cash values on both an employer paid and voluntary basis. Our group life insurance business remains focused on the traditional, annually renewable term product. Group term life and group universal life accounted for 99% and 1%, respectively, of our total group life insurance in force as of December 31, 2018. We no longer market group universal life insurance to new employer groups.

Group Disability Insurance. Our group disability insurance provides a benefit to insured employees who become disabled. In most instances, this benefit is in the form of a monthly income. Our group disability products include both short-term and long-term disability, offered on both an employer paid and voluntary basis. As of December 31, 2018, long-term disability represented 61% of total group disability premium, while short-term disability represented 39% of total group disability premium. We also provide disability management services, called rehabilitation services, to assist individuals in returning to work as quickly as possible following disability. We work with disability claimants to improve

the approval rate of Social Security benefits, thereby reducing payment of benefits by the amount of Social Security payments received. As of December 31, 2018, we served approximately 1.9 million employee lives through more than 47,000 contracts. According to LIMRA, our group short-term disability business was ranked 4th and our group long-term disability business was ranked 3rd in the U.S. as of December 31, 2017, in terms of number of contracts/employer groups in force. We also offer voluntary critical illness insurance, which provides a lump-sum cash benefit to pay for additional expenses associated with the five most common critical illnesses, and voluntary accident insurance, which pays a lump sum when covered injuries occur because of an accident.

Individual Disability Insurance. Individual disability insurance has been sold since the early 1950s. Our individual disability insurance products provide income protection to the insured member and/or business in the event of disability. In most instances, this benefit is in the form of a monthly income. In addition to income replacement, we offer products to pay business-related costs such as overhead expenses for a disabled business owner, buy-out costs for business owners purchasing a disabled owner's interest in the business, expenditures for replacement of a key person and business loan payments. We also offer a product to protect retirement savings in the event of disability. As of December 31, 2018, we served approximately 196,000 individual disability policyholders. According to LIMRA, our individual disability business was ranked 5th in the U.S. in terms of premium in force in the non-cancellable segment of the market and 5th overall, as of December 31, 2017.

Fee-for-Service. We offer administration of group dental, disability and vision benefits on a fee-for-service basis.

Individual Life Insurance

We specialize in providing solutions for small to medium-sized businesses to protect against risk and loss, assist with succession planning and wealth transfer and to build and protect wealth for retirement. We also provide solutions to meet the personal needs of business owners, executives, key employees and affluent individuals. Our U.S. operations administered approximately 638,000 individual life insurance policies with over \$377 billion of individual life insurance in force as of December 31, 2018.

Products and Services

Our Business Owner and Executive Solutions platform as well as our nonqualified deferred compensation offering combines administration and consulting to service our clients' needs. We target the business and personal insurance needs of owners, executives and key employees of small and medium-sized businesses with an increasing focus on providing insurance solutions for nonqualified executive benefits. In addition, we market our products to meet traditional retail insurance needs. We offer a variety of individual life insurance products, both interest sensitive (including universal life, variable universal life and indexed universal life insurance) and traditional.

Interest Sensitive. Our interest sensitive products include universal life, variable universal life and indexed universal life insurance. These products offer the policyholder the option of adjusting both the premium and the death benefit amounts of the insurance contract. Universal life insurance typically includes a cash value account that accumulates at a credited interest rate based on the investment returns of the block of business. Variable universal life insurance is credited with the investment returns of the various investment options selected. Indexed universal life is credited with investment returns tied to an external index, subject to a contractual minimum and maximum. For the year ended December 31, 2018, interest sensitive products represented 24% of individual life insurance in force and generated 68% of individual life insurance annualized first year premium sales.

After a deduction for policy level expenses, we credit net deposits to an account maintained for the policyholder. For universal life contracts, the entire account balance is invested in the general account. Interest is credited to the policyholder's account based on the earnings on general account investments, subject to contractual minimums. For variable universal life contracts, the policyholder may allocate the account balance among our general account and a variety of mutual funds underlying the contract. Interest is credited on amounts allocated to the general account in the same manner as for universal life. Net investment performance on mutual funds is allocated directly to the policyholder accounts; the policyholder bears the investment risk. For indexed universal life, the policyholder may allocate the account balance among our general account and two index accounts. Interest is credited on amounts allocated to the general account in the same manner as for universal life. Net investment performance on the index accounts is allocated directly to the policyholder accounts, subject to the contractual minimum and maximum. Some of our interest sensitive contracts contain what are commonly referred to as "secondary" or "no-lapse" guarantee provisions. These no-lapse guarantees keep the contract in force, even if the contractholder's account balance is insufficient to cover all of the contract charges, provided that the contractholder has continually paid a specified minimum premium.

Traditional Life Insurance. Traditional life insurance includes participating whole life, adjustable life and non-participating term life insurance products. Non-participating term life insurance products represented 32% of our individual life insurance annualized first year premium sales for the year ended December 31, 2018, and 72% of individual life insurance in force as of December 31, 2018. Adjustable life insurance products provide a guaranteed benefit in return for the payment of a fixed premium and allow the policyholder to set the coverage period, premium and face amount combination. Term insurance products provide a guaranteed death benefit for a specified period of time in return for the payment of a fixed premium. Policyholder dividends are not paid on term insurance.

U.S. Insurance Solutions Markets and Distribution

For each of our products, administration and distribution channels are customized to meet customer needs and expectations for that product.

We market our group dental, vision, life, critical illness, accident and disability insurance products to small and medium-sized businesses, primarily targeting our sales toward owners and human resources professionals. We sell our group products in all 50 states and the District of Columbia. We continually adapt our products and pricing to meet local market conditions. We market our fee-for-service capabilities to employers that self-insure their employees' dental, disability and vision benefits. We market our fee-for-service businesses in all 50 states and the District of Columbia.

The group insurance market continues to see a shift to voluntary/worksites products due to various pressures on employers. In keeping with this market change, which shifts the funding of such products from the employer to the employee, we continue to place an enhanced focus on our voluntary benefits platform. We believe the voluntary/worksites market presents growth opportunities and we will continue to develop strategies to capitalize on this expanding market.

As of December 31, 2018, we had 134 sales representatives and 163 service representatives in 26 local markets. Our sales representatives accounted for 99% of our group insurance sales for the year ended December 31, 2018. The service representatives play a key role in servicing the case by providing local, responsive services to our customers and their brokers, such as renewing contracts, revising plans, solving administrative issues and communicating the customers' needs and feedback to us.

We sell our individual life and individual disability insurance products in all 50 states and the District of Columbia, primarily targeting owners, executives and key employees of small and medium-sized businesses. Small and medium-sized business sales represented 63% of individual life sales and 59% of individual disability sales for the year ended December 31, 2018. Much of our life insurance sales efforts focus on the Business Owner and Executive Solutions market. This strategy offers solutions to address business owner financial challenges such as exiting the business, business transition, retaining key employees and retirement planning. Key employees also have needs to supplement retirement income, survivor income, and business protection. We believe the Business Owner and Executive Solutions segment offers growth opportunities and we will continue to develop strategies to capitalize on this expanding market.

We distribute our individual life and individual disability insurance products through our affiliated financial representatives and independent brokers, as well as other marketing and distribution alliances. Affiliated financial representatives were responsible for 14% of individual life insurance sales based on first year annualized premium and 10% of individual disability sales for the year ended December 31, 2018. We had 1,185 affiliated financial representatives in 27 offices as of December 31, 2018. Although they are independent contractors, we have a close tie with affiliated financial representatives and we offer them benefits, training and access to tools and expertise. To meet the needs of the various marketing channels, particularly the independent brokers, we employ wholesale distributors — Regional Vice Presidents for individual life and Regional Vice Presidents for individual disability. A key differentiator in the nonqualified executive benefit sale is our Regional Vice Presidents-Nonqualified Plans, who are not only wholesalers but also consultants and subject-matter experts providing point-of-sale support in closing cases.

Corporate Segment

Our Corporate segment manages the assets representing capital that has not been allocated to any other segment. Financial results of the Corporate segment primarily reflect our financing activities (including financing costs), income on capital not allocated to other segments, inter-segment eliminations, income tax risks and certain income, expenses and other adjustments not allocated to the segments based on the nature of such items. Results of Principal Securities, Inc., our retail broker-dealer and registered investment advisor; RobustWealth, Inc. ("RobustWealth"), our financial technology company; and our exited group medical and long-term care insurance businesses are reported in this segment.

Competition

Competition in our segments is based on a number of factors including: scale, service, product features, price, investment performance, commission structure, distribution capacity, financial strength ratings and name recognition. We compete with a large number of financial services companies such as banks, mutual funds, broker-dealers, insurers and asset managers. Some of these companies offer a broader array of products, more competitive pricing, greater diversity of distribution sources, better brand recognition or, with respect to insurers, higher financial strength ratings. Some may also have greater financial resources with which to compete or may have better investment performance at various times. We believe we distinguish ourselves from our competitors through our:

- full service platform;
- strong customer relationships;
- focus on investment performance and
- expansive product portfolio.

Ratings

Insurance companies are assigned financial strength ratings by rating agencies based upon factors relevant to policyholders. Financial strength ratings are generally defined as opinions as to an insurer's financial strength and ability to meet ongoing obligations to policyholders. Information about ratings provides both industry participants and insurance consumers meaningful insights on specific insurance companies. Higher ratings generally indicate financial stability and a stronger ability to pay claims.

Principal Life and Principal National Life Insurance Company ("PNLIC") have been assigned the following insurer financial strength ratings:

Rating Agency	Financial Strength Rating	Rating Structure
A.M. Best Company, Inc.	A+ ("Superior") with a stable outlook	Second highest of 13 rating levels
Fitch Ratings Ltd.	AA- ("Very Strong") with a stable outlook	Fourth highest of 19 rating levels
Moody's Investors Service	A1 ("Good") with a stable outlook	Fifth highest of 21 rating levels
S&P Global Ratings	A+ ("Strong") with a stable outlook	Fifth highest of 20 rating levels

A.M. Best Company, Inc. ("A.M. Best") ratings for insurance companies range from "A++" to "S". A.M. Best indicates that "A++" and "A+" ratings are assigned to those companies that in A.M. Best's opinion have superior ability to meet ongoing insurance obligations. Fitch Ratings Ltd. ("Fitch") ratings for insurance companies range from "AAA" to "C". Fitch "AA" ratings indicate very strong capacity to meet policyholder and contract obligations. Moody's Investors Service ("Moody's") ratings for insurance companies range from "Aaa" to "C". Moody's indicates that "A" ratings are assigned to those companies that offer good financial security. S&P Global Ratings ("S&P") has ratings that range from "AAA" to "D" for insurance companies. S&P indicates that "A" ratings are assigned to those companies that have strong financial security characteristics. In evaluating a company's financial and operating performance, these rating agencies review its profitability, leverage and liquidity, as well as its book of business, the adequacy and soundness of its reinsurance, the quality and estimated market value of its assets, the adequacy of its policy reserves, the soundness of its risk management programs, the experience and competency of its management and other factors.

In the fourth quarter of 2018, A.M. Best changed its outlook on the U.S. life insurance sector to 'stable' from 'negative' due to increased profitability, improved regulatory and tax environments and a strengthening U.S. economy, along with overall reduced balance sheet risk due to a proactive approach taken by companies in recent years. Fitch, S&P and Moody's continue to maintain a 'stable' outlook as well.

We believe our strong ratings are an important factor in marketing our products to our distributors and customers, as ratings information is broadly disseminated and generally used throughout the industry. Our ratings reflect each rating agency's opinion of our financial strength, operating performance and ability to meet our obligations to policyholders and are not evaluations directed toward the protection of investors. Such ratings are neither a rating of securities nor a recommendation to buy, hold or sell any security, including our common stock. For more information on ratings, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Financial Strength and Credit Ratings."

Regulation

Our businesses are subject to regulation and supervision by U.S. federal and state regulatory authorities as well as non-U.S. regulatory authorities for our operations and customers outside the U.S., which can have a significant effect on our business. Our businesses are also affected by U.S. federal, state and local tax laws as well as tax laws for jurisdictions outside the U.S.

PFG, our parent holding company, is not licensed as an insurer, investment advisor, broker-dealer, bank or other regulated entity. However, because it is the holding company for all of our operations, it is subject to regulation in connection with our regulated entities, including as an insurance holding company. We are subject to legal and regulatory requirements applicable to public companies, including public reporting and disclosure, securities trading, accounting and financial reporting and corporate governance.

U.S. Insurance Regulation

We are subject to the insurance holding company laws in the states where our insurance companies are domiciled. Principal Life and PNLIC are domiciled in Iowa and their principal insurance regulatory authority is the Insurance Division of the Department of Commerce of the State of Iowa. Our other U.S. insurance companies are principally regulated by the insurance departments of the states in which they are domiciled. These laws generally require each insurance company directly or indirectly owned by the holding company to register with the insurance department in the insurance company's state of domicile and to furnish financial and other information about the operations of the companies within the holding company system. Transactions affecting the insurers in the holding company system must be fair and at arm's length. Most states have insurance laws that require regulatory approval of a direct or indirect change in control of an insurer or an insurer's holding company and laws that require prior notification to state insurance departments of a change in control of a non-domiciliary insurance company doing business in that state.

Annually, our U.S. insurance companies must submit an opinion from a board-appointed qualified actuary to state insurance regulators, where licensed, on whether the statutory assets held backing statutory reserves are sufficient to meet contractual obligations and related expenses of the insurer. If such an opinion cannot be rendered noting the sufficiency of assets, the insurance company must set up additional statutory reserves drawing from available statutory surplus until such an opinion can be given.

State insurance departments have broad administrative powers over the insurance business, including insurance company licensing and examination, agent licensing, establishment of reserve requirements and solvency standards, premium rate regulation, admittance of assets to statutory surplus, policy form approval, unfair trade and claims practices regulation and other matters. State insurance statutes also typically place restrictions and limitations on the amount of dividends or other distributions payable by insurance company subsidiaries to their parent companies. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for further details.

In order to enhance the regulation of insurer solvency, the National Association of Insurance Commissioners ("NAIC") has established risk-based capital ("RBC") standards. The standards require life insurers to submit a report to state regulators on an annual basis regarding their RBC based upon categories of risk including the following: asset risk, insurance risk, interest rate risk and business and operational risk. As of December 31, 2018, the statutory surplus of each of our U.S. life insurance companies exceeded the minimum RBC requirements.

State and federal insurance and securities regulatory authorities and other state law enforcement agencies and attorneys general regularly make inquiries and conduct examinations or investigations regarding our compliance with, among other things, insurance laws and securities laws.

Each state has insurance guaranty association laws under which insurers doing business in a state can be assessed, up to prescribed limits, in order to cover contractual benefit obligations of insolvent insurance companies. The guaranty associations levy assessments on each member insurer in a jurisdiction on the basis of the proportionate share of the premiums written by such insurer in the lines of business in which the insolvent insurer is engaged. Some jurisdictions permit the member insurers to recover the assessments paid through full or partial premium tax offsets.

Securities Regulation

Insurance and investment products such as variable annuities, variable life insurance and some funding agreements that constitute securities and mutual fund products are subject to securities laws and regulations, including U.S. state securities regulation as well as U.S. federal regulation under the SEC, FINRA and other regulatory authorities. These regulations affect investment advice, sales and related activities for these products.

We also have entities that are registered as investment advisers with the SEC under, and are therefore subject to, the Investment Advisers Act of 1940.

Employee Retirement Income Security Act

As we provide products and services for U.S. employee benefit plans, we are subject to regulation under the Employee Retirement Income Security Act ("ERISA"). ERISA provisions include reporting and disclosure requirements and standards of conduct.

Banking Regulation

Principal Bank, a wholly owned subsidiary, is a U.S. federal savings bank regulated by the Office of the Comptroller of the Currency. Principal Bank's deposits are insured by the FDIC, making the Bank subject to certain of the FDIC's regulations.

Environmental Regulation

As we own and operate real property, we are subject to U.S. federal, state and local environmental laws, as well as international environmental laws and could be subject to environmental liabilities and costs associated with required remediation of our properties. We routinely have environmental assessments performed for real estate being acquired or used as collateral for commercial mortgages we use for investment.

Regulation of International Businesses

Our international businesses are supervised by regulatory authorities in the jurisdictions in which they operate, including regulation and supervision by insurance, securities, tax and privacy regulatory authorities. The purpose of these regulations is similar to the U.S., to protect our customers and the overall financial system. Regulations such as the revised Markets in Financial Instruments Directive and the General Data Protection Regulation ("GDPR") have a global impact on our businesses.

Risk Management

Like all financial services companies, we are exposed to a wide variety of financial, operational and other risks, as described in Item 1A. "Risk Factors." Effective enterprise risk management is, therefore, a key component of our business model.

Enterprise risk management helps us to manage risk to meet our customer obligations, satisfy regulatory requirements, adequately provide for contingencies in case of stress, optimize shareholder returns, support our core values and maintain our reputation.

We utilize an integrated risk management framework to help us identify, assess, monitor, report, manage and aggregate our material risks within established risk appetites and risk tolerances. The framework delivers important perspective that is used in strategic and tactical decision making and is adaptable to changes in our businesses and in the external environments in which we operate. Our approach also requires a commitment to continuous improvement and periodic validation.

Our governance structure includes Board of Directors oversight, internal risk committees, a corporate risk management function and embedded risk professionals in our business units and functional areas. Our Board of Directors, Audit Committee, Finance Committee, Human Resource Committee and Nominating and Governance Committee provide oversight no less frequently than quarterly, addressing relevant aspects of our risk profile.

Our internal risk committees meet on a regular and frequent basis to discuss various issues and review profile status. Each business unit has its own committee that is responsible for oversight of the material risks within the unit or area. These committees may include corporate leaders. We also have internal committees that provide oversight around a certain risk or group of related risks across the organization. This matrix approach helps us maintain comprehensive risk coverage and preserve an integrated view of risks. The Enterprise Risk Management Committee, comprised of members from the executive management team, exercises enterprise-wide oversight for our most significant risk profiles.

The business units and functional areas are responsible for identifying, assessing, monitoring, reporting and managing their own risks. Chief Risk Officers embedded within each business unit or risk professionals in functional areas help align risk management practice with the strategies of the unit as well as with enterprise-wide objectives. The Corporate Chief Risk Officer and supporting staff are separate from the business units and provide objective oversight, framework enablement and aggregated risk analysis. Internal Audit provides independent assurance around effective risk management design and control execution.

Risk appetites, tolerances and limits have been established from an enterprise-wide and business unit perspective for specific risk categories, where appropriate. We monitor a variety of risk metrics on an ongoing basis and take the appropriate steps to manage our established risk appetites and tolerances. Quarterly risk reporting provides a feedback loop between business units, functional areas, our internal risk committees and the corporate risk management function. This reporting also includes perspectives on emerging risk. To the extent potentially significant business activities or operational initiatives are considered, analysis of the possible impact on our risk profile takes place. This analysis includes, but is not limited to, the capital implications; the impact on near term and long-term earnings; the ability to meet our targets with respect to return on equity, liquidity, debt/capital, cash coverage, business risk and operational risk; and the impact to our reputation.

Employees

As of December 31, 2018, we had 16,475 employees. None of our employees are subject to collective bargaining agreements except a group of employees within our Cuprum organization in Chile. We believe that our employee relations are satisfactory.

Internet Website

Our internet website can be found at www.principal.com. We make available free of charge, on or through our internet website, access to our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after such material is filed with or furnished to the SEC. These reports are also available on the SEC's website at www.sec.gov. Also available free of charge on our internet website is our code of business conduct and ethics, corporate governance guidelines and charters for the Audit, Finance, Human Resources and Nominating and Governance committees of our Board of Directors. Also see Item 10. "Directors, Executive Officers and Corporate Governance."

Item 1A. Risk Factors

This section provides an overview of the risks that may impact our performance in the future.

Risks relating to economic conditions, market conditions and investments

Adverse capital and credit market conditions may significantly affect our ability to meet liquidity needs, as well as our access to capital and cost of capital.

Our results of operations, financial condition, cash flows and statutory capital position could be materially adversely affected by volatility, uncertainty and disruption in the capital and credit markets.

We maintain a level of cash and securities which, combined with expected cash inflows from investments and operations, is believed adequate to meet anticipated short-term and long-term benefit and expense payment obligations. However, withdrawal and surrender levels may differ from anticipated levels for a variety of reasons, such as changes in economic conditions or changes in our claims paying ability and financial strength ratings. For additional information regarding our exposure to interest rate risk and the impact of a downgrade in our financial strength ratings, see "— Changes in interest rates or credit spreads or a sustained low interest rate environment may adversely affect our results of operations, financial condition and liquidity, and our net income can vary from period to period" and "— A downgrade in our financial strength or credit ratings may increase policy surrenders and withdrawals, reduce new sales, terminate relationships with distributors, impact existing liabilities and increase our cost of capital, any of which could adversely affect our profitability and financial condition." In addition, mark-to-market adjustments on our derivative instruments may lead to fluctuations in our reported statutory capital. Volatility, uncertainty or disruptions in the capital or credit markets may result in the need for additional capital to maintain a targeted level of statutory capital relative to the NAIC's RBC requirements. In the event our current internal sources of liquidity do not satisfy our needs, we may have to seek additional financing and, in such case, we may not be able to successfully obtain additional financing on favorable terms, or at all. The availability of additional financing will depend on a variety of factors such as market conditions, the general availability of credit, the volume of trading activities, the overall availability of credit to the financial services industry, our credit ratings and credit capacity, as well as customers' or lenders' perception of our long- or short-term financial prospects. Similarly, our access to funds may be impaired if regulatory authorities or rating agencies take negative actions against us.

Disruptions, uncertainty or volatility in the capital and credit markets may limit our access to capital required to operate our business, most significantly our insurance operations. Such market conditions may limit our ability to replace, in a timely manner, maturing liabilities; satisfy statutory capital requirements; fund redemption requests on insurance or other financial products; generate fee income and market-related revenue to meet liquidity needs and access the capital necessary to grow our business. As such, we may be forced to delay raising capital, issue shorter tenor securities than we prefer, utilize available internal resources or bear an unattractive cost of capital, which could decrease our profitability and significantly reduce our financial flexibility and liquidity.

In addition, we maintain credit facilities with various financial institutions as a potential source of excess liquidity. These facilities are in place to bridge timing in cash flows to minimize the cost of meeting our obligations, particularly during periods when alternative sources of liquidity are limited. Our ability to borrow funds under these facilities is conditioned on our satisfaction of covenants and other requirements contained in the facilities. Our failure to comply with these covenants, or the failure of lenders to fund their lending commitments, would restrict our ability to access these credit facilities and, consequently, could limit our flexibility in meeting our cash flow needs.

For further discussion on liquidity risk management, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources."

Conditions in the global capital markets and the economy generally may materially and adversely affect our business and results of operations.

Our results of operations are materially affected by conditions in the global capital markets and the economy generally, both in the U.S. and elsewhere around the world. Adverse economic conditions may result in a decline in our AUM and revenues and erosion of our profit margins. In addition, in the event of extreme prolonged market events and economic downturns, we could incur significant losses. Even in the absence of a market downturn, we are exposed to substantial risk of loss due to market volatility.

Factors such as consumer spending, business investment, government spending, the volatility and strength of the capital markets, investor and consumer confidence, foreign currency exchange rates and inflation levels all affect the business and economic environment and, ultimately, the amount and profitability of our business. In an economic downturn characterized by higher unemployment, lower family income, lower corporate earnings, lower business investment, negative investor sentiment and lower consumer spending, the demand for our financial and insurance products could be adversely affected. In addition, we may experience an elevated incidence of claims and lapses or surrenders of policies. Our policyholders may choose to defer paying insurance premiums or stop paying insurance premiums altogether. In addition, reductions in employment levels of our existing employer customers may result in a reduction in membership levels and premium income for our specialty benefits products. Participants within the retirement plans for which we provide administrative services may elect to reduce or stop their payroll deferrals to these

plans, which would reduce AUM and revenues. In addition, reductions in employment levels may result in a decline in employee deposits into retirement plans. Adverse changes in the economy could affect net income negatively and could have a material adverse effect on our business, results of operations and financial condition.

An economic downturn may also lead to weakening of foreign currencies against the U.S. dollar, which would adversely affect the translation of segment pre-tax operating earnings and equity of our international operations into our consolidated financial statements. For further discussion on foreign currency exchange risk, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Foreign Currency Risk."

Volatility or declines in the equity, bond or real estate markets could reduce our AUM and may result in investors withdrawing from the markets or decreasing their rates of investment, all of which could reduce our revenues and net income.

Because the revenues of our asset management and accumulation businesses are, to a large extent, based on the value of AUM, a decline in domestic and global equity, bond or real estate markets will decrease our revenues. Turmoil in these markets could lead investors to withdraw from these markets, decrease their rates of investment or refrain from making new investments, which may reduce our net income, revenues and AUM.

For further discussion on equity risk management, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Equity Risk."

Changes in interest rates or credit spreads or a sustained low interest rate environment may adversely affect our results of operations, financial condition and liquidity, and our net income can vary from period to period.

Although the Federal Reserve increased the federal funds rate in 2017 and 2018, interest rates remain low relative to historical levels. During periods of declining interest rates or sustained low interest rates, the interest rates we earn on our assets may be lower than the rates assumed in pricing our products, thereby reducing our profitability. For some of our products, such as GICs and funding agreements, we are unable to lower the rate we credit to customers in response to the lower return we will earn on our investments. In addition, guaranteed minimum interest rates on our life insurance and annuity products may constrain our ability to lower the rate we credit to customers. If interest rates remain low over a sustained period of time, this may result in increases in our reserves and true-ups or unlocking of our deferred acquisition cost ("DAC") asset and other actuarial balances. During periods of declining interest rates, borrowers may prepay or redeem mortgages and bonds that we own, which would force us to reinvest the proceeds at lower interest rates. Furthermore, declining interest rates may reduce the rate of policyholder surrenders and withdrawals on our life insurance and annuity products, thus increasing the duration of the liabilities and creating asset and liability duration mismatches. Low interest rates may also increase the cost of hedging our GMWB rider. Declining interest rates or a sustained low interest rate environment may also result in changes to the discount rate used for valuing our pension and other postretirement employee benefit ("OPEB") obligations, which could negatively impact our results of operations and financial condition. In addition, certain statutory capital and reserve requirements are based on formulas or models that consider interest rates and a prolonged period of low interest rates may increase the statutory capital we are required to hold as well as the amount of assets we must maintain to support statutory reserves.

Increases in market interest rates may also adversely affect our results of operations, financial condition and liquidity. During periods of increasing market interest rates, we may offer higher crediting rates on our insurance and annuity products in order to keep these products competitive. Because returns on our portfolio of invested assets may not increase as quickly as current interest rates, we may have to accept lower spreads, thus reducing our profitability. Rapidly rising interest rates may also result in an increase in policy surrenders, withdrawals and requests for policy loans as customers seek to achieve higher returns. In addition, rising interest rates would cause a decrease in the value of financial assets held at fair value on our consolidated statements of financial position. We may be required to sell assets to raise the cash necessary to respond to an increase in surrenders, withdrawals and loans, thereby realizing capital losses on the assets sold. An increase in policy surrenders and withdrawals may also require us to accelerate amortization of our DAC asset relating to these products, which would further reduce our profitability. Rising interest rates may also cause a decline in the value of the fixed income assets we manage, resulting in a reduction in our fee revenue in the short term. In addition, a significant increase in interest rates may cause a reduction in the fair value of intangible assets in our reporting units, potentially leading to an impairment of goodwill or other intangible assets.

For further discussion about interest rate risk management, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Interest Rate Risk."

Our exposure to credit spreads primarily relates to market price variability and reinvestment risk associated with changes in credit spreads. A widening of credit spreads would cause unrealized losses in our investment portfolio, would increase losses associated with credit-based derivatives we have sold that do not qualify or have not been designated for hedge accounting where we assume credit exposure and, if issuer credit spreads increase as a result of fundamental credit deterioration, would likely result in higher other-than-temporary impairments. Credit spread tightening will reduce net investment income associated with new purchases of fixed maturities. Credit spread tightening may also cause an increase in the reported value of certain liabilities that are valued using a discount rate that reflects our own credit spread. In addition, market volatility may make it difficult to value certain of our securities if trading becomes less frequent. As

such, valuations may include assumptions or estimates that may have significant period-to-period changes from market volatility, which could have a material adverse effect on our results of operations or financial condition.

Our investment portfolio is subject to several risks that may diminish the value of our invested assets and the investment returns credited to customers, which could reduce our sales, revenues, AUM and net income.

An increase in defaults or write-downs on our fixed maturities portfolio may reduce our profitability.

We are subject to the risk that the issuers of the fixed maturities we own will default on principal and interest payments. As of December 31, 2018, our U.S. investment operations held \$57.1 billion of fixed maturities, or 74% of total U.S. invested assets, of which approximately 4% were below investment grade and \$121.5 million, or 0.21% of our total fixed maturities that were classified as either "problem," "potential problem" or "restructured." See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Investments — U.S. Investment Operations — Fixed Maturities."

As of December 31, 2018, the international investment operations of our fully consolidated subsidiaries held \$3.6 billion of fixed maturities, or 49%, of total international invested assets, of which 8% are government bonds. Some non-government bonds have been rated on the basis of the issuer's country credit rating. However, the ratings relationship between national ratings and global ratings is not linear with the U.S. The starting point for national ratings differs by country, which makes the assessment of credit quality more difficult. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Investments — International Investment Operations." An increase in defaults on our fixed maturities portfolio could harm our financial strength and reduce our profitability.

An increased rate of delinquency and defaults on our commercial mortgage loans, including balloon maturities with and without amortizing payments, may adversely affect our profitability.

Our commercial mortgage loan portfolio faces both delinquency and default risk. Commercial mortgage loans of \$14.0 billion represented 16% of our total invested assets as of December 31, 2018. As of December 31, 2018, there were no loans in the process of foreclosure in our commercial mortgage loan portfolio. The performance of our commercial mortgage loan investments, however, may fluctuate in the future. An increase in the delinquency rate of, and defaults under, our commercial mortgage loan portfolio could harm our financial strength and decrease our profitability.

As of December 31, 2018, approximately \$11.4 billion, or 83%, of our U.S. investment operations commercial mortgage loans before valuation allowance had balloon payment maturities. A balloon maturity is a loan with all or a meaningful portion of the loan amount due at the maturity of the loan. The default rate on commercial mortgage loans with balloon payment maturities has historically been higher than for commercial mortgage loans with a fully amortizing loan structure. Since a significant portion of the principal is repaid at maturity, the amount of loss on a default is generally greater than fully amortizing commercial mortgage loans. An increase in defaults on balloon maturity loans as a result of the foregoing factors could harm our financial strength and decrease our profitability.

Mark-to-market adjustments on equity securities, trading securities and certain equity method investments may reduce our profitability or cause volatility in our net income.

Our investment portfolio includes equity securities, trading securities and certain equity method investments that are reported at fair value on the consolidated statements of financial position with changes in fair value reported in net income. Mark-to-market adjustments on these investments may reduce our profitability or cause our net income to vary from period to period. We anticipate that acquisition and investment activities may increase the number and magnitude of these investments in the future.

We may have difficulty selling our privately placed fixed maturities, mortgage loans and real estate investments because they are less liquid than our publicly traded fixed maturities.

We hold certain investments that may be less liquid, such as privately placed fixed maturities, mortgage loans and real estate investments. These asset classes represented approximately 44% of the value of our invested assets as of December 31, 2018.

If we require significant amounts of cash on short notice, we may have difficulty selling these investments in a timely manner, be forced to sell them for less than we otherwise would have been able to realize or both. The reported value of our relatively illiquid types of investments, our investments in the asset classes described above and, at times, our high quality, generally liquid asset classes, do not necessarily reflect the lowest possible price for the asset. If we were forced to sell certain of our assets in the current market, there can be no assurance we will be able to sell them for the prices at which we have recorded them and we may be forced to sell them at significantly lower prices.

The impairment of derivative counterparties could adversely affect us.

We use derivative instruments to hedge various risks we face in our businesses. See Item 7A. "Quantitative and Qualitative Disclosures About Market Risk." We enter into a variety of derivative instruments with a number of counterparties in the financial services industry, including brokers and dealers, commercial banks, investment banks,

clearinghouses, exchanges and other institutions. For transactions where we are in-the-money, we are exposed to credit risk in the event of default of our counterparty. We establish collateral agreements with nominal thresholds for a large majority of our counterparties to limit our exposure. However, our credit risk may be exacerbated when the collateral held by us cannot be realized or is liquidated at prices not sufficient to recover the full amount of the loan or derivative exposure. With regard to our derivative exposure, we have over-collateralization requirements on the portion of collateral we hold, based on the risk profile of the assets posted as collateral. We also have exposure to these financial institutions in the form of unsecured debt instruments and equity investments. Such losses or impairments to the carrying value of these assets may materially and adversely affect our business and results of operations.

Our requirements to post collateral or make payments related to declines in market value of specified assets may adversely affect our liquidity and expose us to counterparty credit risk.

Many of our derivative transactions with financial and other institutions specify the circumstances under which the parties are required to post collateral. We are also required to post collateral in connection with funding agreements with the FHLB Des Moines, a reinsurance agreement, and various other transactions. The amount of collateral we may be required to post under these agreements may increase under certain circumstances, which could adversely affect our liquidity. In addition, under the terms of some of our transactions we may be required to make payment to our counterparties related to any decline in the market value of the specified assets. Such payments could have an adverse effect on our liquidity. Furthermore, with respect to any such payments, we will have unsecured risk to the counterparty as these amounts are not required to be segregated from the counterparty's other funds, are not held in a third party custodial account, and are not required to be paid to us by the counterparty until the termination of the transaction.

Environmental liability exposure may result from our commercial mortgage loan portfolio and real estate investments.

Liability under environmental protection laws resulting from our commercial mortgage loan portfolio and real estate investments may harm our financial strength and reduce our profitability. Under the laws of several states and other jurisdictions, contamination of a property may give rise to a lien on the property to secure recovery of the costs of cleanup. In some states, this kind of lien has priority over the lien of an existing mortgage against the property, which would impair our ability to foreclose on that property should the related loan be in default. In addition, under the laws of some states and under the U.S. Comprehensive Environmental Response, Compensation and Liability Act of 1980, we may be liable for costs of addressing releases or threatened releases of hazardous substances that require remedy at a property securing a mortgage loan held by us, if our agents or employees have become sufficiently involved in the hazardous waste aspects of the operations of the related obligor on that loan, regardless of whether or not the environmental damage or threat was caused by the obligor. We also may face this liability after foreclosing on a property securing a mortgage loan held by us. This may harm our financial strength and decrease our profitability.

Regional concentration of our commercial mortgage loan portfolio in California may subject us to losses attributable to economic downturns or catastrophes in that state.

Commercial mortgage lending in the state of California accounted for 21%, or \$2.9 billion, of our U.S. investment operations commercial mortgage loan portfolio before valuation allowance as of December 31, 2018. Due to this concentration of commercial mortgage loans in California, we are exposed to potential losses resulting from the risk of an economic downturn in California as well as to catastrophes, including but not limited to earthquakes, that may affect the region. While we generally do not require earthquake insurance for properties on which we make commercial mortgage loans, we do take into account property specific engineering reports, construction type and geographical concentration by fault lines in our investment underwriting guidelines. If economic conditions in California deteriorate or catastrophes occur, we may in the future experience delinquencies or defaults on the portion of our commercial mortgage loan portfolio located in California, which may harm our financial strength and reduce our profitability.

Gross unrealized losses may be realized or result in future impairments, resulting in a reduction in our net income.

Fixed maturities that are classified as available-for-sale ("AFS") are reported on the consolidated statements of financial position at fair value. Unrealized gains or losses on AFS securities, excluding those in fair value hedging relationships, are recognized as a component of accumulated other comprehensive income ("AOCI") and are, therefore, excluded from net income. Our U.S. investment operations had gross unrealized losses on fixed maturities of \$1.2 billion pre-tax as of December 31, 2018, and the component of gross unrealized losses for securities trading down 20% or more for over six months was less than \$0.1 billion pre-tax. The accumulated change in fair value of the AFS securities is recognized in net income when the gain or loss is realized upon the sale of the asset or in the event that the decline in fair value is determined to be other than temporary (referred to as an other-than-temporary impairment). Realized losses or impairments may have a material adverse impact on our net income in a particular quarterly or annual period.

Fluctuations in foreign currency exchange rates could adversely impact our profitability and financial condition.

We are exposed to foreign currency risk in our international operations. Principal International sells products denominated in various local currencies and generally invests the associated assets in local currencies. For diversification purposes, assets backing the products may be partially invested in non-local currencies. In our U.S. operations, we also issue foreign currency-denominated funding agreements to nonqualified investors in the institutional market or invest in

foreign currency-denominated investments. The associated foreign currency exchange risk in each instance is hedged or managed to specific risk tolerances. Although our investment and hedging strategies limit the effect of currency exchange rate fluctuation on operating results, weakening of foreign currencies against the U.S. dollar would adversely affect the translation of the results of our international operations into our consolidated financial statements. For further discussion on foreign currency exchange risk, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Foreign Currency Risk."

Risks relating to estimates, assumptions and valuations

Our valuation of investments and the determinations of the amount of allowances and impairments taken on our investments may include methodologies, estimations and assumptions which are subject to differing interpretations and, if changed, could materially adversely affect our results of operations or financial condition.

Fixed maturities, equity securities and derivatives represent the majority of total cash and invested assets reported at fair value on our consolidated statements of financial position, excluding separate accounts. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). Fair value estimates are made based on available market information and judgments about the financial instrument at a specific point in time. Considerable judgment is often required to develop estimates of fair value, and the use of different assumptions or valuation methodologies may have a material effect on the estimated fair value amounts.

For additional information on our valuation methodology, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements."

During periods of market disruption including periods of significantly rising or high interest rates, rapidly widening credit spreads or illiquidity, it may be difficult to value certain securities, for example collateralized mortgage obligations and collateralized debt obligations, if trading becomes less frequent and/or market data becomes less observable. There may be certain asset classes that were in active markets with significant observable data that become illiquid due to the current financial environment. In such cases, the valuation process may require more subjectivity and management judgment. As such, valuations may include inputs and assumptions that are less observable or require greater estimation as well as valuation methods that require greater estimation, which could result in values that are different from the value at which the investments may be ultimately sold. Further, rapidly changing credit and equity market conditions could materially impact the valuation of securities as reported within our consolidated financial statements and the period-to-period changes in value could vary significantly. Decreases in value may have a material adverse effect on our results of operations or financial condition.

The determination of the amount of allowances and impairments varies by investment type and is based upon our periodic evaluation and assessment of known and inherent risks associated with the respective asset class. Such evaluations and assessments require significant judgment and are revised as conditions change and new information becomes available. Additional impairments may need to be taken or allowances provided for in the future, and the ultimate loss may exceed management's current estimate of impairment amounts.

Additionally, our management considers a wide range of factors about the instrument issuer and uses its best judgment in evaluating the cause of the decline in the estimated fair value of the instrument and in assessing the prospects for recovery. Inherent in management's evaluation of the instrument are assumptions and estimates about the operations of the issuer and its future earnings potential. For further information regarding our impairment and allowance methodologies, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Investments — U.S. Investment Operations" under the captions "Fixed Maturities" and "Mortgage Loans" and Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Valuation and Impairment of Fixed Income Investments."

Any impairments of or valuation allowances against our deferred tax assets could adversely affect our results of operations and financial condition.

Deferred tax liabilities and assets are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates expected to be in effect during the years in which the basis differences reverse. We are required to evaluate the recoverability of our deferred tax assets each quarter and establish a valuation allowance, if necessary, to reduce our deferred tax assets to an amount that is more-likely-than-not to be realizable. In determining the need for a valuation allowance, we consider many factors, including future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences and carryforwards, taxable income in prior carryback years and implementation of any feasible and prudent tax planning strategies management would employ to realize the tax benefit.

Inherent in the provision for income taxes are estimates regarding the deductibility of certain items, the timing of income and expense recognition and the current or future realization of operating losses, capital losses, certain tax credits and future enacted changes in applicable tax rates as well as the tax base. In the event these estimates differ from our prior estimates due to the receipt of new information, we may be required to significantly change the provision for income taxes recorded in the consolidated financial statements. Any such change could significantly affect the amounts

reported in the consolidated financial statements in the year these estimates change. A further significant decline in value of assets incorporated into our tax planning strategies could lead to an increase of our valuation allowance on deferred tax assets having an adverse effect on current and future results.

For additional information, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Income Taxes."

We may face losses on our insurance and annuity products if our actual experience differs significantly from our pricing and reserving assumptions.

The profitability of our insurance and annuity products depends significantly upon the extent to which our actual experience is consistent with the assumptions used in setting prices for our products and establishing liabilities for future insurance and annuity policy benefits and claims. The premiums we charge and the liabilities we hold for future policy benefits are based on assumptions reflecting a number of factors, including the amount of premiums we will receive in the future, rate of return on assets we purchase with premiums received, expected claims, mortality, morbidity, lapse rates and expenses. However, due to the nature of the underlying risks and the high degree of uncertainty associated with the determination of the liabilities for unpaid policy benefits and claims, we cannot determine precisely the amounts we will ultimately pay to settle these liabilities, the timing of such payments, or whether the assets supporting the liabilities, together with any future premiums, will be sufficient to satisfy the liabilities. As a result, we may experience volatility in the level of our profitability and our reserves from period to period. To the extent that actual experience is less favorable than our underlying assumptions, we could be required to increase our liabilities, which may harm our financial strength and reduce our profitability.

For example, if mortality or morbidity rates are higher than our pricing assumptions, we may be required to make greater claims payments on our insurance policies or pay claims sooner than we had projected. Concentrations of risk, by both geography and industry, may cause mortality or morbidity rates in our group insurance or individual disability insurance to be higher than anticipated.

Our results of operations may also be adversely impacted if our actual investment earnings differ from our pricing and reserve assumptions. Changes in economic conditions may lead to changes in market interest rates or changes in our investment strategies, either of which could cause our actual investment earnings to differ from our pricing and reserve assumptions.

For additional information on our insurance reserves, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Insurance Reserves."

The pattern of amortizing our DAC asset and other actuarial balances on our universal life-type insurance contracts, participating life insurance policies and certain investment contracts may change, impacting both the level of our DAC asset and other actuarial balances and the timing of our net income.

Amortization of our DAC asset and other actuarial balances depends on the actual and expected profits generated by the lines of business that incurred the expenses. Expected profits are dependent on assumptions regarding a number of factors including investment returns, benefit payments, expenses, mortality and policy lapse. Due to the uncertainty associated with establishing these assumptions, we cannot, with precision, determine the exact pattern of profit emergence. As a result, amortization of these balances will vary from period to period. To the extent actual experience emerges less favorably than expected or our expectation for future profits decreases, our DAC asset and other actuarial balances may be adjusted, reducing our profitability in the current period.

For additional information, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Deferred Acquisition Costs and Other Actuarial Balances."

Legal, regulatory and tax risks

Changes in laws or regulations may reduce our profitability.

Our businesses are subject to comprehensive regulation and supervision throughout the U.S. and in the international markets in which we operate. We are also impacted by federal legislation and administrative policies in areas such as securities laws, employee benefit plan regulation, financial services regulations, U.S. federal taxation and international taxation. Changes in laws or regulations or the interpretation thereof could significantly increase our compliance costs and reduce our profitability. Failure to comply with applicable regulations may expose us to significant penalties, the suspension or revocation of licenses to conduct business and reputational damage.

Changes in insurance regulations may reduce our profitability.

Our insurance subsidiaries are subject to extensive supervision and regulation. In particular, in the U.S., the laws of the various states establish insurance departments with broad powers to supervise and regulate insurance companies. The supervision and regulation relate to numerous aspects of our business and financial condition, including insurance company laws that apply to PFG and to various transactions between our insurance companies and subsidiaries and other affiliates. The primary purpose of insurance regulation is to protect policyholders, not stockholders or creditors.

State insurance regulators, federal regulators and the NAIC continually reexamine existing laws and regulations and may impose changes in the future. New interpretations of existing laws and the passage of new legislation may harm our ability to sell new policies, increase our claims exposure on policies we issued previously and adversely affect our profitability and financial strength.

State insurance guaranty associations have the right to assess insurance companies doing business in their state for funds to help pay the obligations of insolvent insurance companies to policyholders and claimants. Because the amount and timing of an assessment are beyond our control, the liabilities we have established for these potential assessments may not be adequate. In addition, regulators may change their interpretation or application of existing laws and regulations.

The NAIC regularly reviews and updates its statutory reserve and RBC requirements. Changes to these requirements may increase the amount of reserves and capital our U.S. insurance companies are required to hold and may adversely impact Principal Life's ability to pay dividends to its parent. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for a discussion of regulatory restrictions on Principal Life's ability to pay dividends. In addition, changes in statutory reserve or RBC requirements may adversely impact our financial strength ratings. See the risk factor entitled "A downgrade in our financial strength or credit ratings may increase policy surrenders and withdrawals, reduce new sales, terminate relationships with distributors, impact existing liabilities and increase our cost of capital, any of which could adversely affect our profitability and financial condition" for a discussion of risks relating to our financial strength ratings.

State regulators have implemented a principles-based reserving ("PBR") approach for individual life insurance. The framework became effective in 2017 and can be adopted by companies for new business at any time during a permitted three-year transition period. Under the PBR framework, statutory reserves will reflect a combination of company experience and prescribed assumptions and methodologies. In addition, effective in 2018 the NAIC revised the valuation interest rates used to calculate statutory reserves for payout annuity products. The NAIC is also considering future changes to the statutory reserve requirements for individual deferred annuities. The ultimate financial impact of these changes is uncertain, but they could result in higher reserves, more volatile reserves and uncertain tax treatment.

We have implemented reinsurance transactions utilizing affiliated reinsurers and highly rated third parties to finance a portion of the reserves for our term life insurance policies and universal life insurance policies with secondary guarantees. Our ability to enter into new reserve financing transactions will continue to be dependent on the cost and forms of financing available in the market and our ability to obtain required regulatory approvals. For additional information regarding our use of affiliated reinsurance transactions, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 15, Statutory Insurance Financial Information."

The NAIC is pursuing a variety of reforms to its RBC framework, including revisions to the RBC formula in response to the Tax Cuts and Jobs Act ("U.S. tax reform") enacted on December 22, 2017. Those revisions are effective for 2018 RBC filings. The NAIC is also pursuing the development of a group-wide capital calculation. This calculation is not intended to be a regulatory capital requirement, but it could be used by regulators in their supervisory process.

Our international insurance businesses are also subject to comprehensive regulation and supervision from central and/or local governmental authorities in each country in which we operate. New interpretations of existing laws and regulations or the adoption of new laws and regulations may harm our international businesses, increase the cost of compliance and reduce our profitability in those businesses.

The International Association of Insurance Supervisors ("IAIS") has proposed a common framework for the supervision of Internationally Active Insurance Groups ("IAIGs"). For systemic risk management, the Financial Stability Board is continuing to implement group supervisory and capital requirements for Global Systemically Important Insurers ("G-SIIs"). We currently are not designated as an IAIG or a G-SII. If we were so designated in the future, we may be subject to supervision and capital requirements beyond those applicable to any competitors without those designations. These international frameworks may influence the regulatory capital requirements in the jurisdictions in which we operate, potentially leading to an increase in our capital requirements.

Changes in federal, state and international securities laws may reduce our profitability.

Our asset management and accumulation and life insurance businesses are subject to various levels of regulation under federal, state and international securities laws. For example, insurance and investment products such as variable annuities, variable life insurance, mutual fund products and some funding agreements that constitute securities are subject to securities laws and regulations, including state securities regulation as well as federal regulation under the SEC, FINRA and other regulatory authorities. These laws and regulations are primarily intended to protect investors in the securities markets or investment advisory or brokerage clients and generally grant supervisory agencies and self-regulatory organizations broad administrative powers, including the power to limit or restrict the conduct of business for failure to comply with such laws and regulations. In addition, we are subject to local laws and regulations in the global jurisdictions in which we offer or provide asset management services and products. Changes to these laws or regulations, or the interpretation thereof, that restrict the conduct of our business could significantly increase our compliance costs and reduce our profitability.

Changes in employee benefit regulations may reduce our profitability.

We provide products and services to certain employee benefit plans that are subject to ERISA or the Internal Revenue Code of 1986, as amended. The U.S. Congress has, from time to time, considered legislation relating to changes in ERISA to permit application of state law remedies, such as consequential and punitive damages, in lawsuits for wrongful denial of benefits, which, if adopted, could increase our liability for damages in future litigation. In addition, reductions in contribution levels to defined contribution plans may decrease our profitability.

On June 9, 2017, certain provisions of the DOL fiduciary rule became applicable. The regulation broadened the definition of a fiduciary under ERISA to include persons providing personalized investment recommendations to an employee benefit plan or an IRA for a fee or other compensation. The DOL also released two new prohibited transaction class exemptions and amendments to current prohibited transaction exemptions. The DOL set July 1, 2019, as the final applicability date for the remaining provisions of the fiduciary rule, such as the Best Interest Contract Exemption.

On March 15, 2018, the U.S. Court of Appeals for the Fifth Circuit in *U.S. Chamber of Commerce v. DOL* released an opinion invalidating the recent changes to the DOL fiduciary rule and related prohibited transaction exemptions in their entirety. AARP and three states then filed motions to intervene in the case and seek a rehearing, but the Fifth Circuit denied those motions. The DOL did not appeal the Fifth Circuit's decision and issued a Field Assistance Bulletin with a nonenforcement policy on prohibited transactions related to fiduciary investment advice. On June 21, 2018, the Fifth Circuit entered a mandate to officially vacate the fiduciary rule and related prohibited transactions, and we believe this mandate resulted in the law governing fiduciary investment advice returning to that in existence prior to June 9, 2017.

On May 9, 2018, the SEC issued three proposals. First, the SEC proposed Regulation Best Interest, which is designed to make it clear that a broker-dealer may not put its financial interest ahead of the interests of a retail customer in making recommendations. Second, the SEC proposed an interpretation to reaffirm and, in some cases, clarify the SEC's view of the fiduciary duty that investment advisers owe to their clients. Third, the SEC proposed a new standardized short-form disclosure that all broker-dealers and investment advisers would be required to provide to clients to describe the key points of the client relationship. The comment period on the proposals has closed, and the industry is awaiting further SEC action.

Despite the fluid environment, our assessment of the impact to our business and future financial results indicates any costs of adjusting to the new guidance would not be expected to have a significant effect on our financial condition or results of operation.

In addition, uncertainty relating to the timing and final content of the SEC proposals may drive increased state legislative and regulatory activity. In 2018, New Jersey's Bureau of Securities issued a Fiduciary Duty Notice of Pre-Proposal, the NAIC continued working to strengthen its existing annuity suitability model, and the New York Department of Financial Services promulgated "best interest" amendments to its existing annuity suitability regulation and expanded the scope to sales of life insurance. Related state fiduciary or "best interest" legislation and/or regulation is expected in additional states in 2019.

Financial services regulatory reform may reduce our profitability, impact how we do business or limit our ability to engage in certain capital expenditures.

On July 21, 2010, the Dodd-Frank Act became law. The Act makes extensive changes to the laws regulating financial services firms and requires various federal agencies to adopt a broad range of new implementation rules and regulations, including those surrounding the use of derivatives. Some aspects of Dodd-Frank continue to be implemented, and there are some efforts to eliminate or adjust certain elements of the law. Uncertainty remains regarding the continued implementation of and potential adjustments to Dodd-Frank, and it is uncertain whether changes to Dodd-Frank will result in a material effect on our business operations.

Changes in cybersecurity or privacy regulations may reduce our profitability.

We are subject to numerous federal, state, and international regulations regarding the privacy and security of personal information. These laws vary widely by jurisdiction. Recent regulations with a significant impact on our operations include the European Union ("EU") GDPR and the New York Department of Financial Services Part 500 cybersecurity requirements for financial services companies. GDPR became effective in May 2018 for EU data subjects. GDPR includes numerous protections for individuals in the EU, including but not limited to notification requirements for data breaches, the right to access personal data, and the right to be forgotten. Other countries have enacted, or are considering enacting, legislation that is similar in scope to GDPR. We are continuing to evaluate the impact of the California Consumer Privacy Act, which is scheduled to go into effect on January 1, 2020. The New York Department of Financial Services Part 500 cybersecurity requirements, which became effective in March 2017, focus on minimum standards for cybersecurity programs. Similar standards are set forth in the NAIC's Insurance Data Security Model Law. It is anticipated that additional federal, state and international regulations will continue to be enacted in the future. Changes in existing cybersecurity and privacy regulations or the enactment of new regulations may increase our compliance costs and reduce our profitability. In addition, failure to comply with these regulations may lead to reputational damage, fines, and increased regulatory scrutiny.

Changes in tax laws could increase our tax costs and reduce sales of our insurance, annuity and investment products.

Many of the insurance, annuity, and investment products we issue receive favorable tax treatment under current U.S. federal income tax laws. Changes in U.S. federal income tax laws could reduce or eliminate the tax advantages of certain of our products, thus making these products less attractive to our customers. This may lead to a reduction in sales and deposits, which may adversely impact our profitability.

In addition, we benefit from certain tax items, including but not limited to, dividends received deductions, tax credits (such as foreign tax credits), tax-exempt bond interest and insurance reserve deductions. From time to time, the U.S. Congress, as well as foreign, state and local governments, consider legislative changes that could reduce or eliminate the benefits associated with these and other tax items, some of which were impacted by the U.S. tax reform. The Organisation for Economic Co-operation and Development has released proposed policies around Base Erosion and Profit Shifting that more countries are enacting. Our profitability could be negatively impacted as such legislation is adopted by participating countries. We continue to evaluate the impact potential tax reform proposals may have on our future results of operations and financial condition.

For a discussion of the impact of recently adopted tax legislation, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes."

We may not be able to protect our intellectual property and may be subject to infringement claims.

We rely on a combination of contractual rights and copyright, trademark, patent and trade secret laws to establish and protect our intellectual property. Although we use a broad range of measures to protect our intellectual property rights, third parties may infringe or misappropriate our intellectual property. We may have to litigate to enforce and protect our copyrights, trademarks, patents, trade secrets and know-how or to determine their scope, validity or enforceability, which represents a diversion of resources that may be significant in amount and may not prove successful. The loss of intellectual property protection or the inability to secure or enforce the protection of our intellectual property assets could have a material adverse effect on our business and our ability to compete.

We also may be subject to costly litigation in the event another party alleges our operations or activities infringe upon such other party's intellectual property rights. Third parties may have, or may eventually be issued, patents or other protections that could be infringed by our products, methods, processes or services or could otherwise limit our ability to offer certain product features. Any party that holds such a patent could make a claim of infringement against us. We may also be subject to claims by third parties for breach of copyright, trademark, license usage rights, or misappropriation of trade secret rights. Any such claims and any resulting litigation could result in significant liability for damages. If we were found to have infringed or misappropriated a third party patent or other intellectual property rights, we could incur substantial liability, and in some circumstances could be enjoined from providing certain products or services to our customers or utilizing and benefiting from certain methods, processes, copyrights, trademarks, trade secrets or licenses, or alternatively could be required to enter into costly licensing arrangements with third parties, all of which could have a material adverse effect on our business, results of operations and financial condition.

Our ability to pay stockholder dividends and meet our obligations may be constrained by the limitations on dividends Iowa insurance laws impose on Principal Life.

We are an insurance holding company whose assets include all of the outstanding shares of the common stock of Principal Life and other subsidiaries. Our ability to pay dividends to our stockholders and meet our obligations, including paying operating expenses and any debt service, depends upon the receipt of dividends from Principal Life. Iowa insurance laws impose limitations on the ability of Principal Life to pay dividends to its parent. Any inability of Principal Life to pay dividends in the future may cause us to be unable to pay dividends to our stockholders and meet our other obligations. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for a discussion of regulatory restrictions on Principal Life's ability to pay dividends.

Changes in accounting standards may adversely affect our reported results of operations and financial condition.

Our consolidated financial statements are prepared in conformity with U.S. generally accepted accounting principles ("U.S. GAAP"). From time to time, we are required to adopt new or revised accounting standards issued by the Financial Accounting Standards Board ("FASB"). The required adoption of future accounting standards may adversely affect our reported results of operations and financial condition. For a discussion of the impact of accounting pronouncements issued but not yet implemented, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies". In August 2018, the FASB issued final guidance on targeted improvements to the accounting for long-duration insurance contracts. The guidance will become effective for us on January 1, 2021. We are still evaluating the impact this guidance will have on our consolidated financial statements, but it could negatively impact our reported profitability and financial ratios. In addition, the required adoption of new accounting standards may result in significant incremental costs associated with initial implementation and ongoing compliance.

Litigation and regulatory investigations may affect our financial strength or reduce our profitability.

We are regularly involved in litigation, both as a defendant and as a plaintiff, but primarily as a defendant. Litigation naming us as a defendant ordinarily arises out of our business operations as a provider of asset management and accumulation products and services; individual life insurance and specialty benefits insurance; and our investment activities. We are, from time to time, also involved in various governmental, regulatory and administrative proceedings and inquiries.

Legal liability or adverse publicity with respect to current or future legal or regulatory actions, whether or not involving us, may affect our financial strength or reduce our profitability. For further discussion on litigation and regulatory investigation risk, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 12, Contingencies, Guarantees and Indemnifications" under the caption, "Litigation and Regulatory Contingencies" and Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" under the caption "Other Tax Information."

From time to time we may become subject to tax audits, tax litigation or similar proceedings, and as a result we may owe additional taxes, interest and penalties in amounts that may be material.

We are subject to income taxes in the United States as well as many other jurisdictions. In determining our provisions for income taxes and our accounting for tax-related matters in general, we are required to exercise judgment. We regularly make estimates where the ultimate tax determination is uncertain. The final determination of any tax audit, appeal of the decision of a taxing authority, tax litigation or similar proceedings may be materially different from that reflected in our historical financial statements. The assessment of additional taxes, interest and penalties could be materially adverse to our current and future results of operations and financial condition.

Applicable laws and our certificate of incorporation and by-laws may discourage takeovers and business combinations that some stockholders might consider in their best interests.

State laws and our certificate of incorporation and by-laws may delay, defer, prevent, or render more difficult a takeover attempt that some stockholders might consider in their best interests. For instance, they may prevent our stockholders from receiving the benefit from any premium to the market price of our common stock offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of our common stock if they are viewed as discouraging takeover attempts in the future.

State laws and our certificate of incorporation and by-laws may also make it difficult for stockholders to replace or remove our management. These provisions may facilitate management entrenchment, which may delay, defer or prevent a change in our control, which may not be in the best interests of our stockholders.

The following provisions, included in our certificate of incorporation and by-laws, may also have anti-takeover effects and may delay, defer or prevent a takeover attempt that some stockholders might consider in their best interests. In particular, our certificate of incorporation and by-laws:

- permit our Board of Directors to issue one or more series of preferred stock;
- divide our Board of Directors into three classes;
- limit the ability of stockholders to remove directors;
- prohibit stockholders from filling vacancies on our Board of Directors;
- prohibit stockholders from calling special meetings of stockholders;
- impose advance notice requirements for stockholder proposals and nominations of directors to be considered at stockholder meetings and
- require the approval of at least 75% of the voting power of our outstanding common stock for the amendment of our by-laws and provisions of our certificate of incorporation governing:
 - the classified board,
 - the director's discretion in determining what he or she reasonably believes to be in the best interests of PFG,
 - the liability of directors,
 - the removal of directors by shareholders,
 - the prohibition on stockholder actions by written consent and
 - the supermajority voting requirements.

In addition, Section 203 of the General Corporation Law of the State of Delaware may limit the ability of an "interested stockholder" to engage in business combinations with us. An interested stockholder is defined to include persons owning 15% or more of our outstanding voting stock.

Risks relating to our business

Competition, including from companies that may have greater financial resources, broader arrays of products, higher ratings and stronger financial performance, may impair our ability to retain existing customers, attract new customers and maintain our profitability.

We believe our ability to compete is based on a number of factors including scale, service, product features, price, investment performance, commission structure, distribution capacity, financial strength ratings and name recognition. We compete with a large number of financial services companies such as banks, mutual funds, broker-dealers, insurers and asset managers, many of which have advantages over us in one or more of the above competitive factors.

Each of our segments faces strong competition:

- The primary competitors for our Retirement and Income Solutions and Principal Global Investors segments are asset managers, banks, broker-dealers and insurers. Our ability to increase and retain AUM is directly related to the performance of our investments as measured against market averages and the performance of our competitors. Even when securities prices are generally rising, performance can be affected by investment styles.
- Competition for our Principal International segment comes primarily from local financial services firms and other international companies operating on a stand-alone basis or in partnership with local firms.
- Our U.S. Insurance Solutions segment competes with other insurance companies.

In the event competitors charge lower premiums or fees for substantially similar products, we may face pressure to lower our prices in order to attract and retain customers and distributors. Reductions in the premiums and fees we charge may adversely affect our revenues and profitability.

Technological and societal changes may disrupt our business model and impair our ability to retain existing customers, attract new customers and maintain our profitability.

Technological advances, innovation in the financial services industry and societal changes may impact our business model and competitive position. These changes may lead to significant changes in the marketing, distribution, underwriting and pricing of financial services products. In addition, technological and societal changes may lead to changes in customers' preferences as to how they want to interact with us and the types of products they want to buy. We may need to change our distribution channels, our customer service model or our product offerings to accommodate evolving customer preferences. Implementing these changes may require significant expenditures. To the extent our competitors are more successful than us at adapting to technological changes and evolving customer preferences, our competitive position and profitability may be adversely impacted.

Advances in medical technology may also adversely impact our profitability. Increases in the availability and accuracy of genetic testing may increase our exposure to anti-selection risk. In addition, medical advances may lead to increased longevity. As a result, we may be required to pay annuity benefits over a longer period of time than we had projected, thereby reducing the profitability of our annuity products.

Damage to our reputation may adversely affect our revenues and profitability.

Our continued success is dependent upon our ability to earn and maintain the trust and confidence of customers, distributors, employees and other stakeholders. Damage to our reputation may arise from a variety of sources including, but not limited to, litigation or regulatory actions, compliance failures, employee misconduct, cybersecurity incidents, unfavorable press coverage, and unfavorable comments on social media. Adverse developments within our industry may also, by association, negatively impact our reputation or result in greater regulatory or legislative scrutiny. Any damage to our reputation could adversely affect our ability to attract and retain customers, distributors and employees, potentially leading to a reduction in our revenues and profitability.

A downgrade in our financial strength or credit ratings may increase policy surrenders and withdrawals, reduce new sales, terminate relationships with distributors, impact existing liabilities and increase our cost of capital, any of which could adversely affect our profitability and financial condition.

A.M. Best, Fitch, Moody's and S&P publish financial strength ratings on U.S. life insurance companies as well as some of our international insurance companies. These ratings indicate the applicable rating agency's opinion regarding an insurance company's ability to meet contractholder and policyholder obligations. These rating agencies also assign credit ratings on non-life insurance entities, such as PFG and Principal Financial Services, Inc. ("PFS"). Credit ratings indicate the applicable rating agency's opinion regarding a debt issuer's ability to meet the terms of debt obligations in a timely manner and are important factors in overall funding profile and ability to access external capital.

Ratings are important factors in establishing the competitive position of insurance companies and maintaining public confidence in products being offered. Our ratings could be downgraded at any time without advance notice by any rating agency. A ratings downgrade, or the potential for such a downgrade, could, among other things:

- materially increase the number of surrenders for all or a portion of the net cash values by the owners of policies and contracts we have issued, and materially increase the number of withdrawals by policyholders of cash values from their policies;
- result in the termination of our relationships with broker-dealers, banks, agents, wholesalers and other distributors of our products and services;
- reduce new sales, particularly with respect to pension risk transfer products and general account GICs and funding agreements purchased by pension plans and other institutions;
- cause some of our existing liabilities to be subject to acceleration, additional collateral support, changes in terms, or creation of additional financial obligations and
- increase our cost of capital and limit our access to the capital markets.

Any of these consequences could adversely affect our profitability and financial condition.

Client terminations or withdrawals or changes in investor preferences may lead to a reduction in revenues for our asset management and accumulation businesses.

Revenues from our asset management and accumulation products are primarily fee-based. Our asset-based fees are typically calculated as a percentage of the market value of assets under management. Our asset management and accumulation clients may elect to terminate their relationship with us or withdraw funds, generally on short notice. Client terminations and withdrawals may be driven by a variety of factors, including economic conditions, investment performance, investor preferences or changes in our reputation in the marketplace. Significant terminations or withdrawals may reduce our AUM, thus adversely affecting our revenues and profitability.

In addition, fee levels can vary significantly among different types of investments. We generally earn higher fees on liquid alternatives and equity investments vs. fixed income investments and on actively managed investments vs. indexed or passive investment strategies. Therefore, our fee revenue is impacted by both the value and the composition of our AUM. Investor preferences with respect to asset classes and investment strategies may shift over time due to market conditions, tax law changes, regulatory changes and various other factors. Changes in the composition of our assets under management may adversely affect our revenues and profitability.

Guarantees within certain of our products that protect policyholders may decrease our net income or increase the volatility of our results of operations or financial position under U.S. GAAP if our hedging or risk management strategies prove ineffective or insufficient.

Certain of our variable annuity products include guaranteed minimum death benefits and/or guaranteed minimum withdrawal benefits. Periods of significant and sustained downturns in equity markets, increased equity volatility or reduced interest rates could result in an increase in the valuation of the future policy benefit or contractholder fund liabilities associated with such products, resulting in a reduction to net income. We use derivative instruments to attempt to mitigate changes in the liability exposure related to interest rate, equity market and volatility movements, and the volatility of net income associated with these liabilities. However, we remain liable for the guaranteed benefits in the event that derivative counterparties are unable or unwilling to pay. The liability exposure and volatility of net income may also be influenced by changes in market credit spreads reflecting our own creditworthiness, for which we do not attempt to hedge. In addition, we are subject to the risk that hedging and other management procedures prove ineffective or that unanticipated policyholder behavior or mortality, combined with adverse market events, produces economic losses beyond the scope of the risk management techniques employed. These, individually or collectively, may have a material adverse effect on our net income, financial condition or liquidity. We are also subject to the risk that the cost of hedging these guaranteed minimum benefits increases as implied volatilities increase and/or interest rates decrease, resulting in a reduction to net income.

If we are unable to attract and retain qualified employees and sales representatives and develop new distribution sources, our results of operations, financial condition and sales of our products may be adversely impacted.

Our continued success is largely dependent on our ability to attract and retain qualified employees. We face intense competition in attracting and retaining key employees, including investment, marketing, finance, information technology, legal, compliance and other professionals. If we are unable to attract and retain qualified employees, our results of operations and financial condition may be adversely impacted.

We distribute our asset accumulation, asset management and life and specialty benefit insurance products and services through a variety of distribution channels, including our own internal sales representatives, independent brokers, banks, broker-dealers and other third-party marketing organizations. We must attract and retain sales representatives to sell our products. Strong competition exists among financial services companies for efficient sales representatives. We compete with other financial services companies for sales representatives primarily on the basis of our financial position,

support services and compensation and product features. If we are unable to attract and retain sufficient sales representatives to sell our products, our ability to compete and revenues from new sales would suffer.

Our ability to increase and retain AUM is directly related to the performance of our investments as measured against market averages and the performance of our competitors. If we are unable to attract and retain qualified portfolio managers, we may face reduced sales and increased cash outflows in our asset accumulation and asset management businesses.

An interruption in telecommunication, information technology, or other systems, or a failure to maintain the confidentiality, integrity, or availability of data residing on such systems, could disrupt our business, damage our reputation and adversely impact our profitability.

We rely on telecommunication, information technology, and other systems to conduct business, including customer service, marketing and sales activities, customer relationship management and producing financial statements. In addition, we store and process confidential and proprietary business information on both company owned and third party managed systems.

Financial services companies have increasingly become targets of cyberattacks resulting in unauthorized access to confidential information, theft of funds from online accounts, disruption or degradation of service or other damage. These attacks may take a variety of forms, including web application attacks, denial of service attacks, ransomware and other viruses or malware and social engineering, including phishing. While we have policies, procedures, security controls and monitoring, automation and backup plans designed to prevent, or limit the effect of failure, the sophistication of cybercriminals may still result in disruptions or breaches beyond our control. The failure of our telecommunication, information technology, or other systems, for any reason, could disrupt our operations, result in the loss of customer business and adversely impact our profitability.

Any compromise of the security of our systems that results in the disclosure of personally identifiable customer or employee information could damage our reputation, deter customers from purchasing our products and services, expose us to litigation, increase regulatory scrutiny and require us to incur significant technical, legal and other expenses. In addition, personally identifiable information about our customers, along with potential log-in credentials, are increasingly available to hackers due to data breaches at other companies and inadvertent disclosure by customers, such as through phishing. Cybercriminals may use this information to attempt to gain unauthorized access to our customers' accounts, which could have a material adverse impact on our reputation, results of operations, and financial condition.

Our international businesses face political, legal, operational and other risks that could reduce our profitability in those businesses.

Our international businesses face political, legal, operational and other risks that we do not face in our operations in the U.S. We face the risk of discriminatory regulation, nationalization or expropriation of assets, price controls and exchange controls or other restrictions that prevent us from transferring funds from these operations out of the locations in which they operate or converting local currencies we hold into U.S. dollars or other currencies. Some of our international businesses are, and are likely to continue to be, in emerging or potentially volatile markets. In addition, we rely on local staff, including local sales forces, in those locations where there is a risk we may encounter labor problems with local staff, especially in locations where workers' associations and trade unions are strong.

We face risks arising from our participation in joint ventures.

We participate in joint ventures, primarily in our international businesses and real estate investment operations. In these joint ventures, we lack complete management and operational control over the operations, and our joint venture partners may have objectives that are not fully aligned with our interests. These factors may limit our ability to take action to protect or increase the value of our investment in the joint venture.

We may need to fund deficiencies in our Closed Block assets.

In connection with its conversion in 1998 into a stock life insurance company, Principal Life established an accounting mechanism, known as a "Closed Block" for the benefit of participating ordinary life insurance policies that had a dividend scale in force on July 1, 1998. We allocated assets to the Closed Block as of July 1, 1998, in an amount such that we expected their cash flows, together with anticipated revenues from the policies in the Closed Block, to be sufficient to support the Closed Block business, including payment of claims, certain direct expenses, charges and taxes and to provide for the continuation of aggregate dividend scales in accordance with the 1997 policy dividend scales if the experience underlying such scales continued, and to allow for appropriate adjustments in such scales if the experience changed. We will continue to pay guaranteed benefits under the policies included in the Closed Block, in accordance with their terms. The Closed Block assets, cash flows generated by the Closed Block assets and anticipated revenues from policies included in the Closed Block may not be sufficient to provide for the benefits guaranteed under these policies. If they are not sufficient, we must fund the shortfall. Even if they are sufficient, we may choose for business reasons to support dividend payments on policies in the Closed Block with our general account funds.

The Closed Block assets, cash flows generated by the Closed Block assets and anticipated revenues from policies in the Closed Block will benefit only the holders of those policies. In addition, to the extent these amounts are greater than the amounts estimated at the time we funded the Closed Block, dividends payable in respect of the policies included in the Closed Block may be greater than they would have been in the absence of a Closed Block. Any excess net income will be available for distribution over time to Closed Block policyholders but will not be available to our stockholders. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 6, Closed Block" for further details.

A pandemic, terrorist attack, military action or other catastrophic event could adversely affect our net income.

The occurrence of pandemic disease, man-made disasters such as terrorist attacks and military actions, and natural disasters could adversely affect our operations, net income or financial condition. For example, our mortality and morbidity experience could be adversely impacted by a catastrophic event. In addition, a severe catastrophic event may cause significant volatility in global financial markets, disruptions to commerce and reduced economic activity. The resulting macroeconomic conditions could adversely affect our cash flows, as well as the value and liquidity of our invested assets. We may also experience operational disruptions if our employees are unable or unwilling to come to work due to a pandemic or other catastrophe.

Our reinsurers could default on their obligations or increase their rates, which could adversely impact our net income and financial condition.

We cede life, disability, medical and long-term care insurance to other insurance companies through reinsurance. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies." The collectability of reinsurance recoverables is largely dependent on the solvency of the individual insurers. We remain liable to the policyholder, even if the reinsurer defaults on its obligations with respect to the ceded business. In addition, a reinsurer's insolvency may cause us to lose our reserve credits on the ceded business, in which case we would be required to establish additional reserves.

The premium rates we charge are based, in part, on the assumption that reinsurance will be available at a certain cost. Most of our reinsurance contracts contain provisions that limit the reinsurer's ability to increase rates on in-force business; however, some do not. If a reinsurer raises the rates it charges on a block of in-force business, our profitability may be negatively impacted if we are not able to pass the increased costs on to the customer. If reinsurers raise the rates they charge on new business, we may be forced to raise the premiums we charge, which could have a negative impact on our competitive position.

We face risks arising from acquisitions of businesses.

We have acquired businesses in the past and expect to continue to do so in the future. We face a number of risks arising from acquisition transactions, including difficulties in integrating the acquired business into our operations, difficulties in assimilating and retaining employees and intermediaries, difficulties in retaining the existing customers of the acquired entity, unforeseen liabilities that arise in connection with the acquired business, unfavorable market conditions that could negatively impact our growth expectations for the acquired business and sustained declines in the equity market that could reduce the AUM and fee revenues for certain acquired businesses. These risks may prevent us from realizing the expected benefits from acquisitions and could result in the impairment of goodwill and/or intangible assets recognized at the time of acquisition.

For additional information on our goodwill and other intangible assets, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Goodwill and Other Intangible Assets."

Loss of key vendor relationships or failure of a vendor to protect information of our customers or employees could adversely affect our business or result in losses.

We rely on services and products provided by many vendors in the United States and abroad. These include, for example, vendors of computer hardware and software and vendors of services. In the event that one or more of our vendors suffers a bankruptcy or otherwise becomes unable to continue to provide products or services or fails to protect personal information of our customers or employees, we may suffer operational impairments, reputational damage and financial losses.

Our enterprise risk management framework may not be fully effective in identifying or mitigating all of the risks to which we are exposed.

We utilize an integrated risk management framework, which is designed to manage material risks within established risk appetites and risk tolerances. Nonetheless, our policies and procedures may not be fully effective in identifying or mitigating every risk to which we are exposed. Many of our methods for managing and mitigating risk rely on models and assumptions that are based, in part, on observed historical data. As a result, these methods may not accurately predict future exposures, which may be significantly greater than our historical measures indicate. We may be exposed to

unanticipated risks as a result of changes in market conditions, new products or new business strategies, catastrophes or other unforeseen circumstances. If our risk management framework proves ineffective, we may suffer unexpected losses, which may adversely affect our results of operations and financial condition.

Our financial results may be adversely impacted by global climate changes.

Atmospheric concentrations of carbon dioxide and other greenhouse gases have increased dramatically since the industrial revolution, resulting in a gradual increase in global average temperatures and an increase in the frequency and severity of natural disasters. These trends are expected to continue in the future and have the potential to impact nearly all sectors of the economy to varying degrees. We cannot predict the long-term impacts of climate change, but we will continue to monitor new developments in the future.

Potential impacts may include the following:

- Changes in temperatures and air quality may adversely impact our mortality and morbidity rates. For example, increases in the level of pollution and airborne allergens may cause an increase in upper respiratory and cardiovascular diseases, leading to increased claims in our insurance businesses. However, the risk of increased mortality on our life insurance business may be partly offset by our payout annuity business, where an increase in mortality results in a decrease in benefit payments.
- Climate change may impact asset prices, as well as general economic conditions. For example, rising sea levels may lead to decreases in real estate values in coastal areas. Additionally, government policies to slow climate change (e.g., setting limits on carbon emissions) may have an adverse impact on sectors such as utilities, transportation and manufacturing. Changes in asset prices may impact the value of our fixed income, real estate and commercial mortgage investments. We manage our investment risks by maintaining a well-diversified portfolio, both geographically and by sector. We also monitor our investments on an ongoing basis, allowing us to adjust our exposure to sectors and/or geographical areas that face severe risks due to climate change.
- A natural disaster that affects one of our office locations could disrupt our operations and pose a threat to the safety of our employees. However, we have extensive Business Continuity and Disaster Recovery planning programs in place to help mitigate this risk.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of December 31, 2018, we owned 29 properties in our home office complex in Des Moines, Iowa, and in various other locations. Of these 29 properties, 13 are office buildings, 1 is a warehouse facility, 12 are parking lots and ramps, 1 is a park/green space, 1 is a childcare center and 1 is a power generation plant. Of the office and warehouse space, we occupy approximately 93.0% of the 2.7 million square feet of space in these buildings. The balance of the space in these buildings is rented to commercial tenants or is occupied by the property management company servicing these properties. We lease office space for various offices located throughout the U.S. and internationally. We believe that our owned and leased properties are suitable and adequate for our current business operations.

Item 3. Legal Proceedings

Disclosure concerning legal proceedings can be found in Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 12, Contingencies, Guarantees and Indemnifications" under the caption, "Litigation and Regulatory Contingencies" and Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" under the caption, "Other Tax Information," which are incorporated here by this reference.

Executive Officers of the Registrant

The following information is furnished with respect to our executive officers, each of whom is elected by and serves at the pleasure of the Board of Directors.

Timothy M. Dunbar, 61, has been President of Global Asset Management of the Company and Principal Life since September 2018 and Executive Vice President of the Company and Principal Life and Chief Investment Officer of the Company since January 2014. Prior to that date, he served as Senior Vice President of the Company and Principal Life since 2011, and Chief Investment Officer of the Company and Principal Life since January 2013. Prior to that date, Mr. Dunbar was in charge of Strategy and Finance for the Company and Principal Life in 2011 and 2012, overseeing the business management and strategic direction of the capital markets, corporate strategy and corporate treasury areas. Mr. Dunbar previously served as the executive director and head of equities for Principal Global Investors from 2004 until 2011.

Nora M. Everett, 59, has been President, Retirement and Income Solutions of the Company and Principal Life since March 2015. Prior to her current position, she served as President and Chief Executive Officer of Principal Funds since 2008 and Senior Vice President and Deputy General Counsel of the Company and Principal Life since 2004.

Amy C. Friedrich, 47, has been President of U.S. Insurance Solutions since May 2017. Prior to that time, she was Senior Vice President of the Specialty Benefits insurance division of U.S. Insurance Solutions since 2015, and Vice President of Specialty Benefits since 2008.

Patrick G. Halter, 59, has been Chief Executive Officer for Principal Global Investors, the multi-boutique investment management firm within our Global Asset Management business, since September 2018. Prior to that time, he served as Chief Operating Officer of Principal Global Investors, since 2016 and was Chief Executive Officer for Principal Real Estate Investors, the dedicated real estate unit of Principal Global Investors, since 2003.

Daniel J. Houston, 57, has been a director of the Company and Principal Life and President and Chief Executive Officer of the Company and Principal Life since August 2015. Prior to that date, he held the same positions except was Chief Operating Officer (and not Chief Executive Officer) since November 2014. Previously, he served as President, Retirement, Insurance and Financial Services of the Company and Principal Life since 2010. He was President, Retirement and Income Solutions of the Company and Principal Life from 2008 until 2010, and was Executive Vice President, Retirement and Income Solutions of the Company and Principal Life from 2006 to 2008.

Julia M. Lawler, 59, has been Executive Vice President of the Company and Principal Life since September 2018 and continues to serve as Chief Risk Officer. She was Senior Vice President and Chief Risk Officer of the Company and Principal Life since January 2018. Prior to that time, she served as Senior Executive Director Multi-Asset Allocation since 2015, was Chief Investment Officer of Retirement and Income Solutions since 2014, and previously served as Senior Vice President and Chief Investment Officer of the Company and Principal Life since 2002.

Gary P. Scholten, 61, has been Chief Digital Officer since May 2017 and Executive Vice President and Chief Information Officer of the Company and Principal Life since February 2014. Prior to that date, he was Senior Vice President and Chief Information Officer of the Company and Principal Life since 2002.

Karen E. Shaff, 64, has been Executive Vice President and General Counsel of the Company and Principal Life since 2004 and, in addition, Secretary of the Company and Principal Life since January 2014. Prior to that time, she was Senior Vice President and General Counsel of the Company since 2001, and Senior Vice President and General Counsel of Principal Life since 2000.

Deanna D. Strable-Soethout, 50, has been Executive Vice President and Chief Financial Officer of the Company and Principal Life since February 2017. Prior to that date, she was Executive Vice President of the Company and Principal Life since September 2016 and President, U.S. Insurance Solutions of the Company and Principal Life since March 2015. Prior to that, she served as Senior Vice President of the Company and Principal Life since 2006.

Luis Valdes, 61, has been the head of the Principal International segment of our operations since 2012, has been President, Principal International of the Company and Principal Life since 2011. Prior to his current position, he was Senior Vice President and President — PFG Latin America of the Company and Principal Life since 2010 and was Vice President — Principal International of Principal Life from 2000 until 2010.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock began trading on the New York Stock Exchange under the symbol "PFG" on October 23, 2001. Prior to such date, there was no established public trading market for our common stock. Effective December 15, 2017, we changed our listing to the Nasdaq Global Select Market and continue trading under the symbol "PFG". On January 30, 2019, there were 260,337 stockholders of record of our common stock.

The following table presents the dividends declared per share for our common stock for the periods indicated.

	Dividends declared
2018	
First quarter	\$ 0.51
Second quarter	\$ 0.52
Third quarter	\$ 0.53
Fourth quarter	\$ 0.54
2017	
First quarter	\$ 0.45
Second quarter	\$ 0.46
Third quarter	\$ 0.47
Fourth quarter	\$ 0.49

Future dividend decisions will be based on and affected by a number of factors, including our results and financial requirements and the impact of regulatory restrictions. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for a discussion of regulatory restrictions on Principal Life's ability to pay dividends.

The following table presents the amount of our share purchase activity for the periods indicated:

Period	Total number of shares purchased (1)	Average price paid per share	Total number of shares purchased as part of publicly announced programs	Maximum dollar value of shares that may yet be purchased under the programs (in millions) (2)
January 1, 2018 - January 31, 2018	3,429	\$ 71.13	—	\$ 275.0
February 1, 2018 - February 28, 2018	1,654,780	\$ 63.23	1,422,219	\$ 185.1
March 1, 2018 - March 31, 2018	1,545,206	\$ 61.14	1,450,623	\$ 96.4
April 1, 2018 - April 30, 2018	1,597,978	\$ 60.30	1,597,968	\$ —
May 1, 2018 - May 31, 2018	693,730	\$ 58.27	685,800	\$ 260.1
June 1, 2018 - June 30, 2018	1,066,946	\$ 56.30	1,066,653	\$ 200.0
July 1, 2018 - July 31, 2018	—	\$ —	—	\$ 200.0
August 1, 2018 - August 31, 2018	288,237	\$ 56.03	287,600	\$ 183.9
September 1, 2018 - September 30, 2018	862,794	\$ 56.66	861,460	\$ 135.1
October 1, 2018 - October 31, 2018	992,768	\$ 54.48	992,659	\$ 81.0
November 1, 2018 - November 30, 2018	1,256,760	\$ 48.56	1,256,602	\$ 520.0
December 1, 2018 - December 31, 2018	2,151,781	\$ 44.14	2,151,781	\$ 425.0
Total	12,114,409		11,773,365	

(1) Includes the number of shares of common stock utilized to execute certain stock incentive awards and shares purchased as part of a publicly announced program.

(2) In February 2016, our Board of Directors authorized a repurchase program of up to \$400.0 million of our outstanding common stock, which was completed in February 2018. In May 2017, our Board of Directors authorized an additional repurchase of up to \$250.0 million of our outstanding common stock, which was completed in April 2018. In May 2018, our Board of Directors authorized a share repurchase program of up to \$300.0 million of our outstanding common stock, which was completed in December 2018. In November 2018, our Board of Directors authorized a repurchase program of up to \$500.0 million of our outstanding common stock, which has no expiration.

Item 6. Selected Financial Data

The following table sets forth certain selected historical consolidated financial information. We derived the consolidated financial information (except for amounts referred to as "Other Supplemental Data") for each of the years ended December 31, 2018, 2017 and 2016 and as of December 31, 2018 and 2017 from our audited consolidated financial statements and notes to the financial statements included in this Form 10-K. We derived the consolidated financial information (except for amounts referred to as "Other Supplemental Data") for the years ended December 31, 2015 and 2014 and as of December 31, 2016, 2015 and 2014 from our audited consolidated financial statements not included in this Form 10-K. The following summary of consolidated financial information (except for amounts referred to as "Other Supplemental Data") has been prepared in accordance with U.S. GAAP.

In order to fully understand our consolidated financial information, please also see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our audited consolidated financial

statements and the notes to the financial statements included in this Form 10-K. The results for past accounting periods are not necessarily indicative of the results to be expected for any future accounting period.

	As of or for the year ended December 31,				
	2018 (1)	2017 (1)	2016 (1)	2015	2014
<i>(\$ in millions, except per share data and as noted)</i>					
Income Statement Data:					
Revenue:					
Premiums and other considerations	\$ 6,409.6	\$ 6,217.4	\$ 5,299.1	\$ 5,310.3	\$ 3,722.9
Fees and other revenues	4,273.8	3,892.3	3,627.4	3,653.1	3,482.1
Net investment income	3,629.2	3,459.3	3,296.5	3,052.1	3,257.9
Net realized capital gains (losses)	(75.4)	524.2	171.1	(51.1)	14.7
Total revenues	\$ 14,237.2	\$ 14,093.2	\$ 12,394.1	\$ 11,964.4	\$ 10,477.6
Income from continuing operations, net of related income taxes	\$ 1,553.7	\$ 2,324.5	\$ 1,361.8	\$ 1,253.2	\$ 1,176.4
Net income	\$ 1,553.7	\$ 2,324.5	\$ 1,361.8	\$ 1,253.2	\$ 1,176.4
Earnings per Share Data:					
Income from continuing operations, net of related income taxes, per share:					
Basic	\$ 5.41	\$ 8.00	\$ 4.55	\$ 4.11	\$ 3.70
Diluted	\$ 5.36	\$ 7.88	\$ 4.50	\$ 4.06	\$ 3.65
Net income per share:					
Basic	\$ 5.41	\$ 8.00	\$ 4.55	\$ 4.11	\$ 3.70
Diluted	\$ 5.36	\$ 7.88	\$ 4.50	\$ 4.06	\$ 3.65
Dividends declared per common share	\$ 2.10	\$ 1.87	\$ 1.61	\$ 1.50	\$ 1.28
Balance Sheet Data:					
Total assets	\$ 243,036.1	\$ 253,941.2	\$ 228,014.3	\$ 218,660.3	\$ 219,087.0
Long-term debt	\$ 3,259.6	\$ 3,178.4	\$ 3,125.7	\$ 3,265.2	\$ 2,531.2
Series A preferred stock	\$ —	\$ —	\$ —	\$ —	\$ —
Series B preferred stock	\$ —	\$ —	\$ —	\$ —	\$ 0.1
Total stockholders' equity	\$ 11,456.0	\$ 12,921.9	\$ 10,293.8	\$ 9,377.4	\$ 10,232.0
Other Supplemental Data:					
AUM (\$ in billions)	\$ 626.8	\$ 668.6	\$ 591.6	\$ 527.4	\$ 519.3

(1) For a discussion of items materially affecting the comparability of 2018, 2017 and 2016, please see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Transactions Affecting Comparability of Results of Operations."

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following analysis discusses our financial condition as of December 31, 2018, compared with December 31, 2017, our consolidated results of operations for the years ended December 31, 2018, 2017 and 2016, and, where appropriate, factors that may affect our future financial performance. The discussion should be read in conjunction with our audited consolidated financial statements and the related notes to the financial statements and the other financial information included elsewhere in this Form 10-K.

Forward-Looking Information

Our narrative analysis below contains forward-looking statements intended to enhance the reader's ability to assess our future financial performance. Forward-looking statements include, but are not limited to, statements that represent our beliefs concerning future operations, strategies, financial results or other developments, and contain words and phrases such as "anticipate," "believe," "plan," "estimate," "expect," "intend," and other similar expressions. Forward-looking statements are made based upon management's current expectations and beliefs concerning future developments and their potential effects on us. Such forward-looking statements are not guarantees of future performance.

Actual results may differ materially from those included in the forward-looking statements as a result of risks and uncertainties. Those risks and uncertainties include, but are not limited to, the risk factors listed in Item 1A. "Risk Factors."

Overview

We provide financial products and services through the following reportable segments:

- Retirement and Income Solutions;
- Principal Global Investors;
- Principal International and
- U.S. Insurance Solutions.

We also have a Corporate segment, which consists of the assets and activities that have not been allocated to any other segment. See Item 1. "Business" for a description of our reportable segments.

Economic Factors and Trends

Positive net customer cash flow was more than offset by negative market performance leading to a decrease in account values in our Retirement and Income Solutions segment in 2018. Negative net customer cash flow and market performance in 2018 also led to AUM decreases in our Principal Global Investors segment. In addition, AUM decreased in our Principal Global Investors segment due to the realignment of a real estate management team and our decision to exit the actively managed currency market in 2018. Since account values and AUM are the base by which these businesses generate revenues, the decline in account values and AUM puts pressure on our fee revenues in these segments.

In our Principal International segment, we continued to grow our business organically in 2018 through our existing subsidiaries and joint ventures and through strategic acquisitions and start-up operations. Local currency AUM, a key indicator of earnings growth for the segment, increased in 2018 as a result of positive net customer cash flow, operations acquired and market performance. The financial results for the Principal International segment are also impacted by fluctuations of the foreign currency to U.S. dollar exchange rates for the locations in which we have business. AUM was negatively impacted by foreign currency fluctuations in 2018.

The U.S. Insurance Solutions segment has been impacted by lower interest rates in recent years, which has caused spread compression and led to higher reserves. We have mitigated some of the impact through changes in our investment strategy and changes to certain product offerings.

Profitability

Our profitability depends in large part upon our:

- amount of AUM;
- ability to manage the difference between the investment income we earn and the interest we credit to policyholders;
- ability to generate fee revenues by providing administrative and investment management services;
- ability to price our insurance products at a level that enables us to earn a margin over the cost of providing benefits and the related expenses;
- ability to manage our investment portfolio to maximize investment returns and minimize risks such as interest rate changes or defaults or impairments of invested assets;
- ability to effectively hedge fluctuations in foreign currency to U.S. dollar exchange rates on certain transactions and
- ability to manage our operating expenses.

Critical Accounting Policies and Estimates

The increasing complexity of the business environment and applicable authoritative accounting guidance requires us to closely monitor our accounting policies. Our significant accounting policies are described in Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies." We have identified critical accounting policies that are complex and require significant judgment and estimates about matters that are inherently uncertain. A summary of our critical accounting policies is intended to enhance the reader's ability to assess our financial condition and results of operations and the potential volatility due to changes in estimates and changes in guidance. The identification, selection and disclosure of critical accounting estimates and policies have been discussed with the Audit Committee of the Board of Directors.

Valuation and Impairment of Fixed Income Investments

Fixed Maturities. Fixed maturities include bonds, asset-backed securities ("ABS"), redeemable preferred stock and certain non-redeemable preferred securities. We classify our fixed maturities as either AFS or trading and, accordingly, carry them at fair value in the consolidated statements of financial position. Volatility in net income can result from changes in fair value of fixed maturities classified as trading. Volatility in other comprehensive income can result from changes in fair value of fixed maturities classified as AFS.

We measure the fair value of our financial assets and liabilities based on assumptions used by market participants in pricing the asset or liability, which may include inherent risk, restrictions on the sale or use of an asset, or nonperformance risk, including our own credit risk. For additional details concerning the methodologies, assumptions and inputs utilized see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" under the caption, "Determination of Fair Value."

The fair values of our public fixed maturities are primarily based on market prices from third party pricing vendors. We have regular interactions with these vendors to ensure we understand their pricing methodologies and to confirm they are utilizing observable market information. In addition, 6% of our invested asset portfolio as of December 31, 2018, was invested in privately placed fixed maturities with no readily available market quotes to determine the fair market value. The majority of these assets are valued using a matrix pricing valuation approach that utilizes observable market inputs. In the matrix approach, securities are grouped into pricing categories that vary by sector, rating and average life. Each pricing category is assigned a risk spread based on studies of observable public market data from the investment professionals assigned to specific security classes. The expected cash flows of the security are then discounted back at the current Treasury curve plus the appropriate risk spread. Although the matrix valuation approach provides a fair valuation of each pricing category, the valuation of an individual security within each pricing category may be impacted by company specific factors. This excludes privately placed securities subject to Rule 144A of the Securities Act of 1933 that are primarily based on market prices from third party pricing vendors, similar to public fixed maturities.

If we are unable to price a fixed maturity security using prices from third party pricing vendors or other sources specific to the asset class, we may obtain a broker quote or utilize an internal pricing model specific to the asset utilizing relevant market information, to the extent available and where at least one significant unobservable input is utilized. These are reflected in Level 3 in the fair value hierarchy and can include fixed maturities across all asset classes. As of December 31, 2018, less than 1% of our total fixed maturities were Level 3 securities valued using internal pricing models. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" for further discussion.

The \$2,441.2 million decrease in net unrealized gains from U.S. investment operations for the year ended December 31, 2018, can be attributed to widening of credit spreads and an approximate 31 basis point increase in interest rates. For additional information about interest rate risk see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk".

Fixed maturities classified as AFS are subject to impairment reviews. When evaluating fixed maturities for impairment, we consider relevant facts and circumstances in evaluating whether a credit or interest rate-related impairment of a security is other than temporary. Relevant facts and circumstances considered include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in value; (3) the financial position and access to capital of the issuer, including the current and future impact of any specific events; (4) for structured securities, the adequacy of the expected cash flows and (5) our intent to sell a security or whether it is more likely than not we will be required to sell the security before recovery of its amortized cost which, in some cases, may extend to maturity. To the extent we determine a security is deemed to be other than temporarily impaired, an impairment loss is recognized. See item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Other-Than-Temporary Impairments" for further discussion.

A number of significant risks and uncertainties are inherent in the process of monitoring credit impairments and determining if an impairment is other than temporary. These risks and uncertainties include: (1) the risk that our assessment of an issuer's ability to meet all of its contractual obligations will change based on changes in the credit characteristics of that issuer; (2) the risk that the economic outlook will be worse than expected or have more of an impact on the issuer than anticipated; (3) the risk that our investment professionals are making decisions based on fraudulent or misstated information in the financial statements provided by issuers and (4) the risk that new information obtained by us or changes in other facts and circumstances lead us to change our intent to not sell the security prior to recovery of its amortized cost. Any of these situations could result in a charge to net income in a future period. As of December 31, 2018, we had \$35,724.3 million in AFS fixed maturities with gross unrealized losses totaling \$1,229.7 million. Included in the gross unrealized losses are losses attributable to both movements in market interest rates as well as movement in credit spreads.

Mortgage Loans. Mortgage loans consist primarily of commercial mortgage loans on real estate. Commercial mortgage loans on real estate are generally reported at cost adjusted for amortization of premiums and accrual of discounts, computed using the interest method and net of valuation allowances. These loans are considered impaired when, based on current information and events, it is probable we will be unable to collect all amounts due according to contractual terms of the loan agreement. When we determine a loan is impaired, a valuation allowance is established equal to the difference between the carrying amount of the mortgage loan and the estimated value reduced by the cost to sell. Estimated value is based on either the present value of the expected future cash flows discounted at the loan's effective interest rate, the loan's observable market price or fair value of the collateral. Subsequent changes in the estimated value are reflected in the valuation allowance. Amounts on loans deemed to be uncollectible are charged off and removed from the valuation allowance. The change in the valuation allowance provision is included in net realized capital gains (losses) on our consolidated statements of operations. For more detailed information concerning mortgage loan valuation allowances and impairments, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Mortgage Loan Valuation Allowance."

Derivatives

We use derivatives primarily to hedge or reduce exposure to market risks. The fair values of exchange-traded derivatives are determined through quoted market prices. Exchange-traded derivatives include futures that are settled daily, which reduces their fair value in the consolidated statements of financial position. The fair values of privately

negotiated contracts, which are usually referred to as over-the-counter ("OTC") derivatives, that are cleared through centralized clearinghouses are determined through market prices published by the clearinghouses. Beginning in 2017, variation margin associated with OTC cleared derivatives is settled daily, which reduces their fair value in the consolidated statements of financial position. The fair values of non-cleared OTC derivatives are determined using either pricing valuation models that utilize market observable inputs or broker quotes. On an absolute fair value basis as of December 31, 2018, 90% of our OTC derivative assets and liabilities were valued using pricing valuation models and the remaining 10% using broker quotes. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" for further discussion. The fair values of our derivative instruments can be impacted by changes in interest rates, foreign exchange rates, credit spreads, equity indices and volatility, as well as other contributing factors. For additional information see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk".

We also issue certain annuity contracts and other insurance contracts that include embedded derivatives that have been bifurcated from the host contract. They are valued using a combination of historical data and actuarial judgment. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" for further discussion. We include our assumption for own non-performance risk in the valuation of these embedded derivatives. As our credit spreads widen or tighten, the fair value of the embedded derivative liabilities decrease or increase, leading to an increase or decrease in net income. If the current market credit spreads reflecting our own creditworthiness move to zero (tighten), the reduction to net income would be approximately \$207.0 million, net of DAC and income taxes, based on December 31, 2018, reported amounts. In addition, the policyholder behavior assumptions used in the valuation of embedded derivatives include risk margins, which increase the fair value of the embedded derivative liabilities.

The accounting for derivatives is complex and interpretations of the applicable accounting standards continue to evolve. Judgment is applied in determining the availability and application of hedge accounting designations and the appropriate accounting treatment. Judgment and estimates are used to determine the fair value of some of our derivatives. Volatility in net income can result from changes in fair value of derivatives that do not qualify or are not designated for hedge accounting and changes in fair value of embedded derivatives.

Deferred Acquisition Costs and Other Actuarial Balances

Incremental direct costs of contract acquisition as well as certain costs directly related to acquisition activities (underwriting, policy issuance and processing, medical and inspection and sales force contract selling) for the successful acquisition of new and renewal insurance policies and investment contract business are capitalized to the extent recoverable. Maintenance costs and acquisition costs that are not deferrable are charged to net income as incurred.

Amortization Based on Estimated Gross Profits. DAC for universal life-type insurance contracts and certain investment contracts are amortized over the expected lifetime of the contracts in relation to estimated gross profits ("EGPs"). In addition to DAC, the following actuarial balances are also amortized in relation to EGPs.

- Sales inducement asset — Sales inducements are amounts that are credited to the contractholder's account balance as an inducement to purchase the contract. Like DAC, the cost of the sales inducement is capitalized and amortized over the expected life of the contract, in proportion to EGPs.
- Unearned revenue liability — An unearned revenue liability is established when we collect fees or other policyholder assessments that represent compensation for services to be provided in future periods. These revenues are deferred and then amortized over the expected life of the contract, in proportion to EGPs.
- Reinsurance asset or liability — For universal-life type products that are reinsured, a reinsurance asset or liability is established to spread the expected net reinsurance costs or profits in proportion to the EGPs on the underlying business.

We also have additional benefit reserves that are established for annuity or universal life-type contracts that provide benefit guarantees or for contracts that are expected to produce profits followed by losses. The liabilities are accrued in relation to estimated contract assessments, and they are based on assumptions and methodologies similar to those used in the calculation of EGPs. For more information, see "Insurance Reserves".

Key assumptions used in the calculation of EGPs include mortality, morbidity, lapses, equity returns, general account investment yields and expenses as well as the change in our liability for certain guarantees and the difference between actual and expected reinsurance premiums and recoveries, depending on the nature of the contract. Our general account investment yield assumption reflects our long-term projections of interest rates and net realized capital gains (losses). We develop an estimate of EGPs at issue and each valuation date. As actual experience and market conditions emerge, the gross profits may vary from those expected either in magnitude or timing, in which case a true-up of actuarial balances occurs as a charge or credit to current net income. In addition, we are required to revise our assumptions regarding future experience if actual experience or other evidence suggests that earlier estimates should be revised; we refer to this as unlocking. Both actions, reflecting actual experience and market conditions and changing future estimates, can change both the current amount and the future amortization pattern of the DAC asset and related actuarial balances.

For individual variable universal life insurance, individual variable annuities and group annuities that have separate account U.S. equity investment options, we utilize a mean reversion methodology (reversion to the mean assumption), a common industry practice, to determine the future domestic equity market growth rate assumption used for the calculation of EGPs. If actual annualized U.S. equity market performance varies from our 8% long-term assumption, we assume different performance levels in the short-term such that the weighted average return is equal to the long-term assumption over the mean reversion period. However, our mean reversion process generally limits assumed returns to a range of 4-12% during the mean reversion period. For additional details concerning methods of DAC amortization see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies" under the caption, "Deferred Acquisition Costs."

Internal Replacements. We review policies for modifications that result in the exchange of an existing contract for a new contract. If the new contract is determined to be an internal replacement that is substantially changed from the replaced contract, any unamortized DAC and related actuarial balances are written off and acquisition costs related to the new contract are capitalized as appropriate. If the new contract is substantially unchanged from the replaced contract, we continue to amortize the existing DAC and related actuarial balances.

Recoverability. DAC and sales inducement assets are subject to recoverability testing at the time of policy issue and loss recognition testing on an annual basis, or when an event occurs that may warrant loss recognition. If loss recognition or impairment is necessary, the asset balances are written off to the extent it is determined that future policy premiums and investment income or gross profits are not adequate to cover the balances.

Actuarial Assumption Updates. We periodically review and update actuarial assumptions that are inputs to the models for DAC and other actuarial balances and make model refinements as necessary. For more information see "Transactions Affecting Comparability of Results of Operations — Other — Actuarial Assumption Updates."

Sensitivities. As of December 31, 2018, the net balance of DAC and related actuarial balances, excluding balances affected by changes in other comprehensive income ("OCI"), was a \$792.0 million asset. We perform sensitivity analyses to assess the impact that certain assumptions have on these balances. The following table shows the estimated immediate impact of various assumption changes on our DAC and related actuarial balances.

	<u>Estimated impact to net income (1)</u> <i>(in millions)</i>
Reducing the future equity return assumption by 1%	\$ (10)
Reducing the long-term general account investment yield assumption by 0.5%	(49)

(1) Reflects the net impact of changes to the DAC asset, sales inducement asset, unearned revenue liability, reinsurance asset or liability, additional benefit reserves and related taxes. Includes the impact on net income of changes in DAC and related actuarial balances for our equity method subsidiaries. The DAC and related actuarial balances of the equity method subsidiaries are not included in the total DAC balance listed above as they are not fully consolidated.

Goodwill and Other Intangible Assets

Goodwill and other intangible assets include the cost of acquired subsidiaries in excess of the fair value of the net tangible assets recorded in connection with acquisitions. Goodwill and intangible assets with indefinite lives are not amortized; rather, we test the carrying value for impairment at least annually. Goodwill is tested at the reporting unit level, which is a business one level below the operating segment. We formally conduct our annual goodwill and other intangible asset impairment testing during the third quarter. Under certain circumstances, interim impairment tests may be required if events occur or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying value.

The operating segments and associated reporting units at which we perform our testing are as follows:

- Retirement and Income Solutions: Retirement and Income Solutions — Fee and Retirement and Income Solutions — Spread
- Principal Global Investors: Equity Investments, Fixed Income Investments, Real Estate and Other Alternative Investments, Mutual Funds Complex
- Principal International: Latin America and Asia
- U.S. Insurance Solutions: Specialty Benefits insurance and Individual Life insurance
- Corporate: Corporate subsidiaries

Goodwill. U.S. GAAP permits entities to first assess qualitative factors to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the quantitative impairment test of the two-step goodwill impairment test. An entity also has an unconditional option to bypass the qualitative assessment in any period and proceed directly to performing the quantitative impairment test. We continue to perform qualitative assessments for certain reporting units and we elect to proceed directly to a two-step test for certain reporting units in our evaluation of the carrying value of goodwill.

In the qualitative assessment, all relevant events and circumstances that could affect the significant inputs used to determine the fair value of the reporting unit are assessed. Each assessment uses a five-step approach: determine the starting point, identify the most relevant drivers of fair value, identify events and circumstances, weight the identified factors and conclude. For all reporting units that performed a qualitative test in 2018, we concluded it was not more-likely-than-not that the fair value of the reporting unit was less than the carrying amount; therefore, it was not necessary to proceed to a Step 1 quantitative test.

In Step 1 of the quantitative evaluation, the fair value of each reporting unit is determined and compared to the carrying value of the reporting unit. If the fair value is greater than the carrying value, the carrying value of the reporting unit is deemed to be recoverable, and Step 2 is not required. After completion of our 2018 Step 1 analysis, we determined that fair values exceeded the carrying amounts for all businesses one level below the operating segment and we did not have any business at risk of failing the Step 1 goodwill impairment test. If the fair value estimate had been less than the carrying value, it is an indicator that impairment may exist, and Step 2 would be required. In Step 2, the reporting unit's goodwill implied fair value is determined. The reporting unit's fair value as determined in Step 1 is assigned to all of its net assets (recognized and unrecognized) as if the reporting unit were acquired in a business combination as of the date of the impairment test. If the implied fair value of the reporting unit's goodwill is lower than its carrying amount, goodwill is impaired and written down to its implied fair value.

Other Intangible Assets. U.S. GAAP permits entities to first assess qualitative factors to determine whether it is more-likely-than-not that the fair value of an intangible asset with an indefinite life is less than its carrying amount to determine whether it is necessary to perform a quantitative assessment. We primarily utilize the qualitative approach for testing of intangible assets with indefinite lives. In doing so, we follow the same qualitative process as for goodwill and weigh the evidence of the events and circumstances and their potential impacts on fair value when determining if it is not more-likely-than-not that the indefinite lived intangible is impaired. Intangible assets with finite lives are amortized as related benefits emerge and are reviewed periodically for indicators of impairment in value. If facts and circumstances suggest possible impairment, the sum of the estimated undiscounted future cash flows expected to result from the use of the asset is compared to the current carrying value of the asset. If the undiscounted future cash flows are less than the carrying value, an impairment loss is recognized for the excess of the carrying amount of assets over their fair value. For those assets amortized as related benefits emerge, the most significant assumptions involved in the estimation of future benefits include surrender/lapse rates and margins. We did not recognize a material impairment in our 2018 consolidated statement of operations.

Sensitivities. In connection with our annual impairment testing process, we performed a sensitivity analysis for goodwill impairment with respect to each of our reporting units and determined that a hypothetical 10% decline in the fair value would not result in an impairment of goodwill for any reporting unit. The most significant goodwill and other intangible assets within our 2018 consolidated statement of financial position resulted from our 2013 acquisition of Cuprum, whereby we recorded \$631.8 million of goodwill, and from our 2006 purchase of WM Advisors, Inc., whereby we acquired \$608.0 million of investment management contracts which are considered an indefinite-lived intangible. We cannot predict certain future events that might adversely affect the reported value of goodwill and other intangible assets that totaled \$1,100.0 million and \$1,315.1 million, respectively, as of December 31, 2018. Such events include, but are not limited to, strategic decisions made in response to economic and competitive conditions, the impact of the economic environment on our customer base, interest rate movements, declines in the equity markets, the legal environment in which the businesses operate or a material negative change in our relationships with significant customers. For further information see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies," and "Note 2, Goodwill and Other Intangible Assets."

Insurance Reserves

Reserves are liabilities representing estimates of the amounts that will come due, at some point in the future, to or on behalf of our policyholders. U.S. GAAP, allowing for some degree of managerial judgment, provides guidance for establishing reserves.

Future policy benefits and claims include reserves for individual traditional and group life insurance, disability, medical and long-term care insurance and individual and group annuities that provide periodic income payments. These reserves are computed using assumptions of mortality, morbidity, lapse, investment performance and expense. These assumptions are based on our experience, industry results, emerging trends and future expectations. For long-duration insurance contracts, once these assumptions are made for a given policy or group of policies, they will not be changed over the life of the policy. However, significant changes in experience or assumptions may require us to provide for expected future losses on a product by establishing premium deficiency reserves. Premium deficiency reserves may also be established for short-duration contracts to provide for expected future losses. Our reserve levels are reviewed throughout the year using internal analysis including, among other things, experience studies, claim development analysis and annual loss recognition analysis. To the extent experience indicates potential loss recognition, we recognize losses on certain lines of business. The ultimate accuracy of the assumptions on these long-tailed insurance products cannot be determined until the obligation of the entire block of business on which the assumptions were made is extinguished. Short-term variances of actual results from the assumptions used in the computation of the reserves are reflected in current period net income and can impact quarter-to-quarter net income.

Future policy benefits and claims also include reserves for incurred but unreported disability, medical, dental, vision, critical illness, accident and life insurance claims. We recognize claims costs in the period the service was provided to our policyholders. However, claims costs incurred in a particular period are not known with certainty until after we receive, process and pay the claims. We determine the amount of this liability using actuarial methods based on historical claim payment patterns as well as emerging cost trends, where applicable, to determine our estimate of claim liabilities. We also look back to assess how our prior periods' estimates developed. To the extent appropriate, changes in such development are recorded as a change to current period claim expense. Historically, the amount of the claim reserve adjustment made in subsequent reporting periods for prior period estimates have been within a reasonable range given our normal claim fluctuations.

Future policy benefits and claims also include benefit reserves that are established for annuity or universal life-type contracts that provide benefit guarantees, or for contracts that are expected to produce profits followed by losses. The liabilities are accrued in relation to estimated contract assessments.

We periodically review and update actuarial assumptions that are used to compute reserves. For more information see "Transactions Affecting Comparability of Results of Operations — Other — Actuarial Assumption Updates."

Benefit Plans

The reported expense and liability associated with pension and OPEB plans requires the use of assumptions. Numerous assumptions are made regarding the discount rate, expected long-term rate of return on plan assets, turnover, expected compensation increases, health care claim costs, health care cost trends, retirement rates and mortality. The discount rate and the expected return on plan assets have the most significant impact on the level of expense.

The assumed discount rate is determined by projecting future benefit payments inherent in the Projected Benefit Obligation and discounting those cash flows using a spot yield curve for high quality corporate bonds. Our assumed discount rates were 4.15% for our pension plans and 3.95% for our OPEB plans as of December 31, 2018. Typically, a 0.25% decrease in the discount rate would increase the pension benefits Projected Benefit Obligation and the Net Periodic Pension Cost ("NPPC") by approximately \$113.8 million and \$2.4 million, respectively. Typically, a 0.25% decrease in the discount rate would increase the OPEB accumulated postretirement benefit obligation by approximately \$2.1 million and would have a nominal impact on the Net Periodic Benefit Cost ("NPBC"). Typically, a 0.25% increase in the discount rate would result in decreases in benefit obligations and expenses at a level generally commensurate with those noted above.

The assumed long-term rate of return on plan assets is set at the long-term rate expected to be earned based on the long-term investment policy of the plans and the various classes of the invested funds. Historical and future expected returns of multiple asset classes were analyzed to develop a risk-free real rate of return and risk premiums for each asset class. The overall long-term rate for each asset class was developed by combining a long-term inflation component, the real risk-free rate of return and the associated risk premium. A weighted average rate was developed based on long-term returns for each asset class, the plan's target asset allocation policy and the tax structure of the trusts. For the 2018 NPPC and 2018 NPBC, a 6.30% and 4.85% weighted average long-term rate of return was used, respectively. For the 2019 NPPC and 2019 NPBC, a 5.95% and 5.19% weighted average long-term rate of return assumption, respectively, will be used. Typically, a 0.25% decrease in the assumed long-term rate of return would increase the NPPC by approximately \$6.0 million and the NPBC by approximately \$1.6 million. Typically, a 0.25% increase in this rate would result in a decrease to expense at the same levels. The assumed return on plan assets is based on the fair market value of plan assets as of December 31, 2018.

The compensation increase assumption is generally set at a rate consistent with current and expected long-term compensation and salary policy, including inflation.

For pension costs, actuarial gains and losses are amortized using a straight-line amortization method over the average remaining service period of employees, which is approximately 9 years. For OPEB costs, actuarial gains and losses are amortized using a straight-line amortization method over the average future lifetime, which is approximately 14 years. The qualified pension plan does not utilize the allowable corridor, while the nonqualified pension plan and OPEB plans utilize the 10% corridor. Prior service costs are amortized on a weighted average basis over approximately 7 years for pension costs and 9 years for OPEB costs. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 11, Employee and Agent Benefits" for further discussion.

Income Taxes

We provide for income taxes based on our estimate of the liability for taxes due. Our tax accounting represents management's best estimate of various events and transactions, such as completion of tax audits or establishment of, or changes to, a valuation allowance associated with certain deferred tax assets, which could affect our estimates and effective income tax rate in a particular quarter or annual period. Deferred tax liabilities and assets are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates expected to be in effect during the years in which the basis differences reverse. We are required to evaluate the recoverability of our deferred tax assets each quarter and establish a valuation allowance, if necessary, to reduce our deferred tax assets to an amount that is more-likely-than-not to be realizable. In determining the need for a valuation allowance, we consider

many factors, including future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences and carryforwards, taxable income in prior carryback years and implementation of any feasible and prudent tax planning strategies management would employ to realize the tax benefit.

U.S. federal and state deferred income taxes have not been provided on approximately \$1,184.0 million and \$1,331.2 million of accumulated but undistributed earnings from operations of foreign subsidiaries as of December 31, 2018 and 2017, respectively. We do not record U.S. federal and state deferred income taxes on foreign earnings not expected to be distributed to the U.S. We apply an exception to the general rule, which under U.S. GAAP otherwise requires the recording of U.S. deferred income taxes on the anticipated repatriation of foreign earnings as recognized for financial reporting purposes. The exception permits us to not record a U.S. deferred income tax liability on foreign earnings we expect to be indefinitely reinvested in our foreign operations. The related deferred income taxes will be recorded in the period it becomes apparent we can no longer positively assert some or all the undistributed earnings will remain invested into the foreseeable future.

Inherent in the provision for income taxes are estimates and our expectations regarding the deductibility of certain items, the timing of income and expense recognition, future performance and the current or future realization of operating losses, capital losses and certain tax credits. We regularly evaluate the capital needs of our domestic and foreign operations considering all available information, including operating and capital plans, regulatory capital requirements, parent company financing and cash flow needs, as well as tax laws applicable to our domestic and foreign subsidiaries. In the event these estimates differ from our prior estimates due to the receipt of new information, we may be required to significantly change the provision for income taxes recorded in the consolidated financial statements. Any such change could significantly affect the amounts reported in the consolidated financial statements in the year these estimates change. A significant decline in value of financial assets could lead to establishment of a valuation allowance on deferred tax assets having an adverse effect on current and future results. In management's judgment, total deferred income tax assets are more-likely-than-not to be realized.

In addition, the amount of income taxes paid is subject to audits in the U.S. as well as various state and foreign jurisdictions. Tax benefits are recognized for book purposes when the more-likely-than-not threshold is met with regard to the validity of an uncertain tax position. Once this threshold is met, for each uncertain tax position we recognize in earnings the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement with the Internal Revenue Service or other income taxing authorities for audits ongoing or not yet commenced.

We had \$193.0 million and \$231.8 million of current income tax receivables associated with outstanding audit issues reported as other assets in our consolidated statements of financial position as of December 31, 2018 and 2017, respectively. We believe there are adequate defenses against, or sufficient provisions for, the contested issues, but final resolution of contested issues could take several years while legal remedies are pursued. Consequently, we do not anticipate the ultimate resolution of audits ongoing or not yet commenced to have a material impact on our net income.

The effects of tax legislation are recognized in the period of enactment. The effects of the U.S. tax reform were reflected in the 2017 financial statements as determined or as reasonably estimated provisional amounts based on available information subject to interpretation in accordance with the SEC's Staff Accounting Bulletin No. 118 ("SAB 118"). SAB 118 provides guidance on accounting for the effects of the U.S. tax reform where our determinations are incomplete but we are able to determine a reasonable estimate. A final determination is required to be made within a measurement period not to extend beyond one year from the enactment date of the U.S. tax reform. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" for further discussion.

Recent Event

Recast of Segment Results

Effective January 1, 2019, we will be making changes to the allocation of certain compensation and other expenses and net investment income among the reportable segments. These allocation changes are being made as a result of a global financial process improvement project. The expense allocation changes simplify the allocation processes, increase transparency and allow for more effective expense management across the enterprise. The net investment income allocation changes better align our internal capital allocation with enterprise capital targets. Segment results for prior periods will be recast so they are reported on a comparable basis, with no impact to total company financial results.

Transactions Affecting Comparability of Results of Operations

Acquisitions

RobustWealth. On July 2, 2018, we finalized the acquisition of RobustWealth, a financial technology company. The acquisition adds RobustWealth's digital capabilities to our industry knowledge, asset management experience and technology to help consumers meet their financial goals on an enhanced digital advice platform. The RobustWealth platform will retain its open architecture philosophy, and RobustWealth will continue to sell its platform to outside firms as part of its growth strategy. RobustWealth is consolidated within the Corporate segment due to its strategic benefits across the organization with the majority of goodwill allocated to the Principal Global Investors segment.

INTERNOS. On April 16, 2018, we finalized the acquisition of INTERNOS, a London-based European real estate investment manager. Upon acquisition, INTERNOS became Principal Real Estate Europe Limited and operates as our dedicated European real estate private equity investment boutique, expanding our global real estate capabilities. At the time of closing, the acquisition increased our AUM by \$3.5 billion. Principal Real Estate Europe Limited is reported within the Principal Global Investors segment.

MetLife Afore, S.A. de C.V. On February 20, 2018, we finalized the acquisition of MetLife Afore, S.A. de C.V., which was MetLife, Inc.'s pension fund management business in Mexico. At the time of closing, the acquisition increased our AUM by \$3.8 billion, making us the fifth largest AFORE in Mexico in terms of AUM. The results of this acquisition are reflected in the Principal International segment.

Other

Actuarial Assumption Updates. We periodically review and update actuarial assumptions that are inputs to the models for DAC and other actuarial balances and make model refinements as necessary. During the third quarter of 2018, assumption updates and model refinements were made resulting in an unlocking of DAC and other actuarial balances that increased consolidated net income by \$32.1 million for the year ended December 31, 2018. The pre-tax operating earnings impact was \$(53.5) million for our Principal International segment, \$19.2 million for our Retirement and Income Solutions segment and \$(9.3) million for our U.S. Insurance Solutions segment for the year ended December 31, 2018.

During the third quarter of 2017, assumption updates and model refinements were made resulting in an unlocking of DAC and other actuarial balances that decreased consolidated net income by \$26.6 million for the year ended December 31, 2017. The pre-tax operating earnings impact was \$(32.8) million for our U.S. Insurance Solutions segment, \$(21.8) million for our Retirement and Income Solutions segment and \$(11.8) million for our Principal International segment for the year ended December 31, 2017.

During the third quarter of 2016, assumption updates and model refinements were made resulting in an unlocking of DAC and other actuarial balances that decreased consolidated net income by \$68.8 million for the year ended December 31, 2016. The pre-tax operating earnings impact was \$(33.2) million for our U.S. Insurance Solutions segment, \$(31.6) million for our Retirement and Income Solutions segment and \$(8.9) million for our Principal International segment for the year ended December 31, 2016.

The Individual Life insurance business actuarial assumption updates and model refinements affected several line items within our income statement. The following table presents the increase (decrease) on the Individual Life insurance income statement line items for the years ended December 31, 2018, 2017 and 2016.

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Pre-tax operating earnings	\$ (15.5)	\$ (47.0)	\$ (43.2)
Fees and other revenues	(2.3)	14.2	(9.5)
Benefits, claims and settlement expenses	20.7	18.5	53.6
Dividends to policyholders	1.8		8.2
Operating expenses	(9.3)	42.7	(28.1)

Real Estate Realignment. Effective August 1, 2018, we agreed to a realignment of one of our real estate investment teams. With the realignment, we no longer manage \$9.2 billion of assets for a large real estate client but accelerated the recognition of a significant performance fee that was earned due to our successful management of the assets, which drove market value appreciation of the real estate investments. During the third quarter we recognized, within the Principal Global Investors segment, \$253.1 million of fees and other revenue related to the performance fee. This was partially offset by \$151.9 million of operating expenses related to revenue sharing arrangements, resulting in a \$101.2 million increase to pre-tax operating earnings within the Principal Global Investors segment. Ongoing impacts to segment pre-tax operating earnings are not expected to be material.

CIMB Joint Ventures. On May 25, 2018, we and CIMB completed new ownership agreements in our joint ventures, CPAM and CPIAM. With the completion we increased our ownership stake to 60% with CIMB retaining 40% ownership and co-management of both CPAM and CPIAM. Our investment in both entities will continue to be reported using the equity method within the Principal International segment.

Tax Cuts and Jobs Act. The U.S. tax reform enacted on December 22, 2017, made broad and complex changes to the U.S. Internal Revenue Code applicable to us. The U.S. statutory tax rate was reduced from 35% to 21% effective January 1, 2018. Other provisions of the U.S. tax reform effective January 1, 2018, include, but are not limited to: 1) provisions reducing the dividends received deduction; 2) essentially eliminating U.S. federal income taxes on dividends from foreign subsidiaries; 3) retaining an element of current inclusion of certain earnings of controlled foreign corporations; 4) eliminating the corporate AMT and 5) changing how existing AMT credits will be realized. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" for further details.

Real Estate Transactions. In an effort to adjust the concentration of our real estate holdings in Southern California, improve the liquidity of our real estate portfolio and gain control of certain properties that were jointly owned, we entered an exchange agreement to exit certain real estate joint ventures in September 2017. The transaction resulted in us transferring our interest in certain real estate properties in exchange for our joint venture partner's interest in certain other real estate properties. In a subsequent transaction we sold certain of these real estate properties to a third party. Both transactions closed in September 2017.

We recognized a \$690.9 million net pre-tax realized capital gain (\$410.8 million net after-tax realized capital gain) for the year ended December 31, 2017, as a result of these transactions. For additional information related to these transactions, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Real Estate Transactions."

Other Factors Affecting Comparability

Fluctuations in Foreign Currency to U.S. Dollar Exchange Rates

Fluctuations in foreign currency to U.S. dollar exchange rates for locations in which we have operations can affect reported financial results. In years when foreign currencies weaken against the U.S. dollar, translating foreign currencies into U.S. dollars results in fewer U.S. dollars to be reported. When foreign currencies strengthen, translating foreign currencies into U.S. dollars results in more U.S. dollars to be reported.

Foreign currency exchange rate fluctuations create variances in our financial statement line items. The most significant impact occurs within our Principal International segment where pre-tax operating earnings were negatively impacted \$11.8 million and positively impacted \$12.6 million for the years ended December 31, 2018 and 2017, respectively, as a result of fluctuations in foreign currency to U.S. dollar exchange rates. This impact was calculated by comparing (a) the difference between current year results and prior year results to (b) the difference between current year results and prior year results translated using current year exchange rates for both periods. We use this approach to calculate the impact of exchange rates on all revenue and expense line items. For a discussion of our approaches to managing foreign currency exchange rate risk, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Foreign Currency Risk."

Effects of Inflation

The impact of inflation has not had a material effect on our annual consolidated results of operations over the past three years. However, we may be materially affected by inflation in the future.

Variable Investment Income

Variable investment income includes certain types of investment returns such as prepayment fees and income (loss) from certain elements of our other alternative asset classes, including results of value-add real estate sales activity. Due to its unpredictable nature, variable investment income may or may not be material to our financial results for a given reporting period and may create variances when comparing different reporting periods. For additional information, see "Investment Results."

Recent Regulatory Changes

On June 9, 2017, certain provisions of the DOL fiduciary rule became applicable. The regulation broadened the definition of a fiduciary under ERISA to include persons providing personalized investment recommendations to an employee benefit plan or an IRA for a fee or other compensation. The DOL also released two new prohibited transaction class exemptions and amendments to current prohibited transaction exemptions. The DOL set July 1, 2019, as the final applicability date for the remaining provisions of the fiduciary rule, such as the Best Interest Contract Exemption.

On March 15, 2018, the U.S. Court of Appeals for the Fifth Circuit in *U.S. Chamber of Commerce v. DOL* released an opinion invalidating the recent changes to the DOL fiduciary rule and related prohibited transaction exemptions in their entirety. AARP and three states then filed motions to intervene in the case and seek a rehearing, but the Fifth Circuit denied those motions. The DOL did not appeal the Fifth Circuit's decision and issued a Field Assistance Bulletin with a nonenforcement policy on prohibited transactions related to fiduciary investment advice. On June 21, 2018, the Fifth Circuit entered a mandate to officially vacate the fiduciary rule and related prohibited transactions, and we believe this mandate resulted in the law governing fiduciary investment advice returning to that in existence prior to June 9, 2017.

On May 9, 2018, the SEC issued three proposals. First, the SEC proposed Regulation Best Interest, which is designed to make it clear that a broker-dealer may not put its financial interest ahead of the interests of a retail customer in making recommendations. Second, the SEC proposed an interpretation to reaffirm and, in some cases, clarify the SEC's view of the fiduciary duty that investment advisers owe to their clients. Third, the SEC proposed a new standardized short-form disclosure that all broker-dealers and investment advisers would be required to provide to clients to describe the key points of the client relationship. The comment period on the proposals has closed, and the industry is awaiting further SEC action.

Despite the fluid environment, our assessment of the impact to our business and future financial results indicates any costs of adjusting to the new guidance would not be expected to have a significant effect on our financial condition or results of operation.

Recent Accounting Changes

For recent accounting changes, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 1, Nature of Operations and Significant Accounting Policies" under the caption, "Recent Accounting Pronouncements."

Results of Operations

The following table presents summary consolidated financial information for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(in millions)</i>				
Revenues:					
Premiums and other considerations	\$ 6,409.6	\$ 6,217.4	\$ 5,299.1	\$ 192.2	\$ 918.3
Fees and other revenues	4,273.8	3,892.3	3,627.4	381.5	264.9
Net investment income	3,629.2	3,459.3	3,296.5	169.9	162.8
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	(46.3)	606.0	269.5	(652.3)	336.5
Net other-than-temporary impairment (losses) recoveries on available-for-sale securities	10.6	(28.7)	(98.8)	39.3	70.1
Other-than-temporary impairment losses on fixed maturities available-for-sale reclassified to (from) other comprehensive income	(39.7)	(53.1)	0.4	13.4	(53.5)
Net impairment losses on available-for-sale securities	(29.1)	(81.8)	(98.4)	52.7	16.6
Net realized capital gains (losses)	(75.4)	524.2	171.1	(599.6)	353.1
Total revenues	14,237.2	14,093.2	12,394.1	144.0	1,699.1
Expenses:					
Benefits, claims and settlement expenses	8,192.5	7,822.6	6,913.2	369.9	909.4
Dividends to policyholders	123.6	124.6	156.6	(1.0)	(32.0)
Operating expenses	4,136.7	3,893.8	3,732.6	242.9	161.2
Total expenses	12,452.8	11,841.0	10,802.4	611.8	1,038.6
Income before income taxes	1,784.4	2,252.2	1,591.7	(467.8)	660.5
Income taxes (benefits)	230.7	(72.3)	229.9	303.0	(302.2)
Net income	1,553.7	2,324.5	1,361.8	(770.8)	962.7
Net income attributable to noncontrolling interest	7.2	14.1	45.3	(6.9)	(31.2)
Net income attributable to Principal Financial Group, Inc.	\$ 1,546.5	\$ 2,310.4	\$ 1,316.5	\$ (763.9)	\$ 993.9

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net Income Attributable to Principal Financial Group, Inc.

Net income attributable to Principal Financial Group, Inc. decreased primarily due to a \$568.3 million U.S. tax reform net benefit in 2017 and a \$410.8 million after-tax net realized capital gain resulting from real estate transactions in 2017. These decreases were partially offset by an \$86.4 million decrease in losses on derivatives not designated as hedging instruments.

Total Revenues

Premiums increased \$128.2 million for the U.S. Insurance Solutions segment primarily due to growth in the business. Premiums increased \$99.2 million for the Principal International segment primarily due to higher sales of single premium annuities with life contingencies in Chile.

Fees and other revenues increased \$296.7 million for the Principal Global Investors segment primarily due to an accelerated performance fee resulting from the realignment of a real estate team in the third quarter of 2018.

Net investment income increased primarily due to higher average invested assets in our U.S. operations. For additional information, see "Investments — Investment Results — Net Investment Income."

Net realized capital gains (losses) can be volatile due to other-than-temporary impairments of invested assets, mark-to-market adjustments of certain invested assets and our decision to sell invested assets. We had net realized capital

losses in 2018 as compared to net realized capital gains in 2017 primarily due to \$690.9 million in net gains resulting from real estate transactions in 2017. This was partially offset by a \$141.5 million decrease in losses on derivatives not designated as hedging instruments. For additional information, see "Investments — Investment Results — Net Realized Capital Gains (Losses)."

Total Expenses

Benefits, claims and settlement expenses increased for the Principal International segment primarily in Latin America due to \$97.9 million higher sales of single premium annuities with life contingencies in Chile and \$47.7 million higher reserves related to higher inflation-based interest crediting rates to customers. Benefits, claims and settlement expenses increased \$126.4 million for the Retirement and Income Solutions segment primarily due to an increase in reserves resulting from higher sales of single premium individual annuities with life contingencies. Benefits, claims and settlement expenses increased \$99.3 million for the U.S. Insurance Solutions segment primarily due to growth in the business.

Operating expenses increased \$202.2 million for the Principal Global Investors segment primarily due to an increase in operating expense related to the realignment of a real estate investment team in the third quarter of 2018.

Income Taxes

The effective income tax rates were 13% and (3)% for the years ended December 31, 2018 and 2017, respectively. The effective income tax rate increased to 13% for the year ended December 31, 2018, from (3)% for the year ended December 31, 2017, primarily due to the impact of the U.S. tax reform relative to changes in income before income taxes. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" under the caption, "Effective Income Tax Rate" for further discussion.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net Income Attributable to Principal Financial Group, Inc.

Net income attributable to Principal Financial Group, Inc. increased primarily due to a \$568.3 million U.S. tax reform net benefit in 2017 and a \$410.8 million after-tax net realized capital gain resulting from real estate transactions in 2017.

Total Revenues

Premiums increased \$810.2 million for the Retirement and Income Solutions segment primarily due to higher sales of single premium group and individual annuities with life contingencies. The single premium group annuity product, which is typically used to fund defined benefit plan terminations, can generate large premiums from very few customers and therefore premiums tend to vary from period to period.

Fees and other revenues increased \$92.1 million for the Retirement and Income Solutions segment primarily due to higher fees stemming from an increase in mean account values, which resulted from an increase in the daily average equity markets since 2016. Fees and other revenues increased \$79.9 million for the U.S. Insurance Solutions segment primarily due to growth in the business. Fees and other revenues increased \$61.1 million for the Principal Global Investors segment primarily due to an increase in management fee revenue resulting from higher AUM.

Net investment income increased primarily due to higher average invested assets in our U.S. operations. For additional information, see "Investments — Investment Results — Net Investment Income."

Net realized capital gains (losses) can be volatile due to other-than-temporary impairments of invested assets, mark-to-market adjustments of certain invested assets and our decision to sell invested assets. Net realized capital gains increased primarily due to \$690.9 million in net gains resulting from real estate transactions in 2017. This increase was partially offset by a \$347.1 million change in derivatives not designated as hedging instruments that had losses in 2017 versus gains in 2016. For additional information, see "Investments — Investment Results — Net Realized Capital Gains (Losses)."

Total Expenses

Benefits, claims and settlement expenses increased \$864.3 million for the Retirement and Income Solutions segment primarily due to an increase in reserves resulting from higher sales of single premium group and individual annuities with life contingencies.

Operating expenses increased for the U.S. Insurance Solutions segment primarily due to an \$82.9 million increase resulting from an unfavorable impact associated with actuarial assumption updates and model refinements in 2017 as compared to a favorable impact in 2016 and a \$72.2 million increase associated with growth in the business.

Income Taxes

The effective income tax rates were (3)% and 14% for the years ended December 31, 2017 and 2016, respectively. The effective income tax rate decreased to (3)% for the year ended December 31, 2017, from 14% for the year ended December 31, 2016, primarily due to a 36% benefit from the impact of the U.S. tax reform, partially offset by a 16% increase in pre-tax income with no proportionate increase in permanent tax adjustments and a 4% increase in state income taxes. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes" under the caption, "Effective Income Tax Rate" for further discussion.

Results of Operations by Segment

For results of operations by segment see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 16, Segment Information."

Retirement and Income Solutions Segment

Retirement and Income Solutions Trends

Several key factors impact revenue and earnings growth in the Retirement and Income Solutions segment. These factors include: the ability of our distribution channels to generate new sales and retain existing business; pricing decisions that take account of competitive conditions, persistency, investment returns, mortality trends, and operating expense levels; investment management performance; equity market returns and interest rate changes. Profitability ultimately depends on our ability to price products and invest assets at a level that enables us to earn a margin over the cost of providing benefits and the expense of acquiring and administering those products.

Net revenue is a key metric used to understand Retirement and Income Solutions earnings growth. Net revenue is defined as operating revenues less benefits, claims and settlement expenses less dividends to policyholders. Net revenue from Retirement and Income Solutions — Fee is primarily fee based and is impacted by changes in the equity markets. Net revenue from Retirement and Income Solutions — Spread is driven by the difference between investment income earned on the underlying general account assets and the interest rate credited to the contracts.

The following table presents the Retirement and Income Solutions segment net revenue for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Retirement and Income Solutions — Fee	\$ 1,621.1	\$ 1,594.3	\$ 1,511.1	\$ 26.8	\$ 83.2
Retirement and Income Solutions — Spread	549.3	544.2	491.5	5.1	52.7
Total Retirement and Income Solutions	\$ 2,170.4	\$ 2,138.5	\$ 2,002.6	\$ 31.9	\$ 135.9

Retirement and Income Solutions Segment Summary Financial Data

The following table presents certain summary financial data relating to the Retirement and Income Solutions segment for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Operating revenues:					
Premiums and other considerations	\$ 3,635.9	\$ 3,671.1	\$ 2,860.9	\$ (35.2)	\$ 810.2
Fees and other revenues	1,408.3	1,394.4	1,304.7	13.9	89.7
Net investment income	2,241.7	2,100.1	1,985.1	141.6	115.0
Total operating revenues	7,285.9	7,165.6	6,150.7	120.3	1,014.9
Expenses:					
Benefits, claims and settlement expenses, including dividends to policyholders	5,115.5	5,027.1	4,148.1	88.4	879.0
Operating expenses	1,289.8	1,238.7	1,208.1	51.1	30.6
Total expenses	6,405.3	6,265.8	5,356.2	139.5	909.6
Pre-tax operating earnings	\$ 880.6	\$ 899.8	\$ 794.5	\$ (19.2)	\$ 105.3

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017**Pre-Tax Operating Earnings**

Pre-tax operating earnings decreased in our Fee business primarily due to a \$24.3 million increase in DAC amortization stemming from unfavorable equity market performance in 2018 compared to favorable equity market performance in 2017, a \$17.1 million increase in expenses to support our businesses, an \$11.5 million increase in staff related costs, including pension and other postretirement benefits, and a \$6.2 million decrease in variable investment income. These decreases to pre-tax operating earnings were offset by a \$48.7 million impact associated with actuarial assumption updates and model refinements, which were favorable in 2018 compared to unfavorable in 2017. Pre-tax operating earnings decreased in our Spread business primarily due to a \$7.7 million less favorable impact associated with actuarial assumption updates and model refinements in 2018 compared to 2017.

Net Revenue

Net revenue increased in our Fee business primarily due to a \$33.7 million less unfavorable impact associated with actuarial assumption updates and model refinements in 2018 compared to 2017. The increase was slightly offset by a \$6.2 million decrease in variable investment income.

Operating Expenses

Operating expenses increased in our Fee business due to a \$24.3 million increase in DAC amortization stemming from unfavorable equity market performance in 2018 compared to favorable equity market performance in 2017, a \$17.1 million increase in expenses to support our businesses and an \$11.5 million increase in staff related costs, including pension and other postretirement benefits. These increases were partially offset by a \$22.0 million decrease in commission expense relating to changes in commission arrangements with advisors. Operating expenses increased in our Spread business primarily due to a \$7.1 million increase in expenses to support our businesses and a \$3.4 million increase in sales compensation due to growth in our single premium individual annuities block of business.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016**Pre-Tax Operating Earnings**

Pre-tax operating earnings increased \$33.4 million in our Fee business primarily due to higher fees stemming from an increase in mean account values, which resulted from an increase in the daily average equity markets since 2016. Pre-tax operating earnings increased in our Spread business primarily due to a \$54.4 million increase attributed to higher mean account values stemming from growth in the business and a \$24.6 million favorable impact associated with actuarial assumption updates and model refinements in 2017 compared to 2016.

Net Revenue

Net revenue increased \$83.2 million in our Fee business primarily due to higher fees stemming from an increase in mean account values, which resulted from an increase in the daily average equity markets since 2016. Net revenue increased \$52.7 million in our Spread business primarily due to higher fees from an increase in mean account values, which resulted from growth in the business.

Operating Expenses

Operating expenses increased in our Fee business primarily due to a \$24.4 million increase in staff related costs and a \$15.1 million increase in non-deferrable commission expense and investment management fee expense related to an increase in mean account values, which resulted from an increase in the daily average equity markets since 2016. Operating expenses decreased in our Spread business primarily due to a \$20.7 million decrease in DAC amortization expense resulting from a favorable impact associated with actuarial assumption updates and model refinements in 2017 compared to 2016.

Principal Global Investors Segment***Principal Global Investors Trends***

Our overall AUM decreased \$37.4 billion in 2018 driven by negative net cash flow, negative market returns and the realignment of a real estate investment team. We continue to expand our global presence and believe we are well positioned to capture changing market conditions and client needs.

The following table provides a summary of AUM managed by Principal Global Investors by the business area that sourced or generated the AUM. Principal Global Investors sourced represents institutional and fund platform AUM sourced by Principal Global Investors' distribution teams. General account represents general account assets of domestic

insurance companies and other balance sheet assets. Other affiliated sources represents AUM sourced by other PFG businesses (e.g., separate account assets).

	For the year ended December 31,		
	2018	2017	2016
	(in billions)		
Principal Global Investors sourced	\$ 189.2	\$ 219.2	\$ 200.3
General account	79.8	76.4	72.8
Other affiliated sources	124.5	135.3	117.4
Total AUM	<u>\$ 393.5</u>	<u>\$ 430.9</u>	<u>\$ 390.5</u>

Principal Global Investors Segment Summary Financial Data

AUM is the base by which we generate management fee revenues. Market performance and net cash flow are the two main drivers of AUM growth. Market performance reflects equity, fixed income, real estate and other alternative investment performance. Net cash flow reflects client deposits and withdrawals. The fee levels on these client deposits and withdrawals are increasingly becoming the more important factor to revenue growth and will vary widely based on business and/or product mix.

The following table presents the AUM rollforward for assets managed by Principal Global Investors for the periods indicated:

	For the year ended December 31,		
	2018	2017	2016
	(in billions)		
AUM, beginning of period	\$ 430.9	\$ 390.5	\$ 360.8
Net cash flow (1)	(15.2)	(2.7)	9.0
Investment performance (2)	(13.7)	43.1	21.7
Operations acquired (3)	3.5	—	—
Operations disposed (4)	(11.0)	—	—
Other (5)	(1.0)	—	(1.0)
AUM, end of period	<u>\$ 393.5</u>	<u>\$ 430.9</u>	<u>\$ 390.5</u>

- (1) Similar to the asset management industry, we experienced elevated withdrawals in 2018 primarily due to increased demand for lower cost options, higher interest rates, volatility in capital markets and tax-related redemption activity.
- (2) Variations in investment performance are primarily the result of fluctuations in market performance over time.
- (3) Reflects assets managed by Principal Global Investors resulting from the acquisition of INTERNOS in April 2018.
- (4) Reflects outflows of \$9.2 billion related to the realignment of a real estate investment management team in the third quarter of 2018 and \$1.8 billion related to a decision to exit the actively managed currency market in the fourth quarter of 2018.
- (5) Primarily reflects the transfer of assets between managers and the effect of exchange rates.

The following table presents certain summary financial data relating to the Principal Global Investors segment for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Operating revenues:					
Fees and other revenues	\$ 1,730.9	\$ 1,434.2	\$ 1,373.1	\$ 296.7	\$ 61.1
Net investment income	5.4	10.2	14.0	(4.8)	(3.8)
Total operating revenues	<u>1,736.3</u>	<u>1,444.4</u>	<u>1,387.1</u>	<u>291.9</u>	<u>57.3</u>
Total expenses	<u>1,177.4</u>	<u>969.0</u>	<u>937.4</u>	<u>208.4</u>	<u>31.6</u>
Pre-tax operating earnings attributable to noncontrolling interest	5.7	5.7	5.9	—	(0.2)
Pre-tax operating earnings	<u>\$ 553.2</u>	<u>\$ 469.7</u>	<u>\$ 443.8</u>	<u>\$ 83.5</u>	<u>\$ 25.9</u>

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Pre-Tax Operating Earnings

Pre-tax operating earnings increased due to a \$253.1 million accelerated performance fee resulting from the realignment of a real estate investment team in the third quarter of 2018. This was partially offset by an increase of \$151.9 million in operating expenses related to the realignment.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Pre-Tax Operating Earnings

Pre-tax operating earnings increased due to a \$96.9 million increase in management fee revenue as a result of increased AUM partially offset by a \$39.2 million decrease in performance fee revenue largely due to a prior year triennial performance fee in our real estate business. Additionally, expenses supporting the business increased \$31.6 million.

Principal International Segment

Principal International Trends

Our Principal International businesses focus on locations with growing middle classes, favorable demographics and increasing long-term savings, ideally with voluntary or mandatory pension markets. With variations depending upon the specific location, we have targeted these markets for sales of retirement and related products and services, including mutual funds, asset management, income annuities and life insurance accumulation products to businesses and individuals.

We have pursued our international strategy through a combination of acquisitions, start-up operations and joint ventures, which require infusions of capital consistent with our strategy of long-term growth and profitability.

Principal International Segment Summary Financial Data

AUM is generally a key indicator of earnings growth for the segment, as AUM is the base by which we can generate local currency profits. The Cuprum business in Chile differs in that the majority of fees are collected with each deposit by the mandatory retirement customers, based on a capped salary level, as opposed to asset levels. Net customer cash flow and market performance are the two main drivers of local currency AUM growth. Net customer cash flow reflects our ability to attract and retain client deposits. Market performance reflects the investment returns on our underlying AUM. Our financial results are also impacted by fluctuations of the foreign currency to U.S. dollar exchange rates for the locations in which we have business. AUM of our foreign subsidiaries is translated into U.S. dollar equivalents at the end of the reporting period using the spot foreign exchange rates. Revenue and expenses for our foreign subsidiaries are translated into U.S. dollar equivalents at the average foreign exchange rates for the reporting period.

The following table presents the Principal International segment AUM rollforward for the years indicated:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in billions)</i>		
AUM, beginning of period	\$ 160.7	\$ 137.1	\$ 109.9
Net cash flow	5.1	6.3	9.1
Investment performance (1)	4.0	13.3	9.9
Operations acquired (2)	3.8	—	—
Operations disposed (3)	(0.2)	—	—
Effect of exchange rates	(17.4)	4.3	9.1
Other	(0.5)	(0.3)	(0.9)
AUM, end of period	<u>\$ 155.5</u>	<u>\$ 160.7</u>	<u>\$ 137.1</u>

- (1) Variations in investment performance are primarily the result of fluctuations in market performance over time.
- (2) Reflects the February 2018 acquisition of MetLife, Inc.'s pension fund management business in Mexico.
- (3) Reflects the December 2018 disposition of a closed block of business in Mexico.

Net revenue is a key metric used to understand the earnings growth for the Principal International segment. The following table presents the net revenue of the Principal International segment for the years indicated.

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Net revenue	\$ 728.2	\$ 760.1	\$ 678.0	\$ (31.9)	\$ 82.1

The following table presents certain summary financial data relating to the Principal International segment for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Operating revenues:					
Premiums and other considerations	\$ 317.2	\$ 218.0	\$ 274.6	\$ 99.2	\$ (56.6)
Fees and other revenues	484.4	433.5	407.4	50.9	26.1
Net investment income	571.3	600.0	570.0	(28.7)	30.0
Total operating revenues	1,372.9	1,251.5	1,252.0	121.4	(0.5)
Expenses:					
Benefits, claims and settlement expenses	644.7	491.4	574.0	153.3	(82.6)
Operating expenses	469.2	426.2	387.6	43.0	38.6
Total expenses	1,113.9	917.6	961.6	196.3	(44.0)
Pre-tax operating earnings attributable to noncontrolling interest	3.3	3.9	2.3	(0.6)	1.6
Pre-tax operating earnings	\$ 255.7	\$ 330.0	\$ 288.1	\$ (74.3)	\$ 41.9

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Pre-Tax Operating Earnings

Pre-tax operating earnings decreased \$93.8 million in Latin America primarily due to the impacts of the third quarter actuarial assumption updates and model refinements in Brazil, which resulted in a \$41.7 million decrease in pre-tax operating earnings relative to the year earlier period, \$32.1 million of unfavorable relative market performance on our required regulatory investments and \$13.9 million of foreign currency headwinds. This was partially offset by an increase in Asia's pre-tax operating earnings of \$24.7 million due to continued growth in the business.

Net Revenue

Net revenue decreased \$53.8 million in Latin America primarily due to the impacts of the third quarter actuarial assumption updates and model refinements in Brazil, which resulted in a \$41.7 million decrease in net revenue relative to the year earlier period, and \$31.0 million of unfavorable relative market performance on our required regulatory investments. This was partially offset by a \$21.3 million increase in Asia's net revenue due to continued growth in the business.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Pre-Tax Operating Earnings

Pre-tax operating earnings increased \$29.1 million in Latin America primarily due to \$17.8 million of increased earnings from our equity method investment in Brasilprev, of which \$11.3 million was due to the strengthening of the Brazilian real against the U.S. dollar, and due to \$17.0 million favorable relative market performance on our required regulatory investments relative to the year earlier period. In addition, Asia pre-tax operating earnings increased \$21.8 million due to continued growth in the business.

Net Revenue

Net revenue increased \$57.0 million in Latin America due to \$17.8 million of increased earnings from our equity method investment in Brasilprev, of which \$11.3 million was due to the strengthening of the Brazilian real against the U.S. dollar, and due to \$17.3 million favorable relative market performance in our required regulatory investments. Net revenue in Asia increased \$25.2 million due to continued growth in the business.

U.S. Insurance Solutions Segment

U.S. Insurance Solutions Segment Summary Financial Data

Premium and fees are a key metric for growth in the U.S. Insurance Solutions segment. We receive premiums on our specialty benefits insurance products as well as our traditional life insurance products. Fees are generated from our specialty benefits fee-for-service products as well as our universal life, variable universal life and indexed universal life insurance products. We use several reinsurance programs to help manage the mortality and morbidity risk. Premium and fees is reported net of reinsurance premiums.

In our Specialty Benefits insurance business, premium and fees growth is a result of strong retention, sales and in-group growth. In our Individual Life insurance business, premium and fees growth is driven by recurring premiums and sales with a focus on maintaining a balanced product portfolio.

The following table presents the U.S. Insurance Solutions segment premium and fees for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Specialty Benefits insurance	\$ 2,169.5	\$ 2,021.1	\$ 1,862.3	\$ 148.4	\$ 158.8
Individual Life insurance	1,091.8	1,082.3	996.1	9.5	86.2

The following table presents certain summary financial data relating to the U.S. Insurance Solutions segment for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Operating revenues:					
Premiums and other considerations	\$ 2,456.5	\$ 2,328.3	\$ 2,163.6	\$ 128.2	\$ 164.7
Fees and other revenues (1)	804.6	774.9	694.6	29.7	80.3
Net investment income	819.8	799.4	779.1	20.4	20.3
Total operating revenues	4,080.9	3,902.6	3,637.3	178.3	265.3
Expenses:					
Benefits, claims and settlement expenses (1)	2,446.0	2,346.3	2,220.5	99.7	125.8
Dividends to policyholders (1)	123.4	124.4	156.2	(1.0)	(31.8)
Operating expenses (1)	1,067.9	1,047.2	899.4	20.7	147.8
Total expenses	3,637.3	3,517.9	3,276.1	119.4	241.8
Pre-tax operating earnings (1)	\$ 443.6	\$ 384.7	\$ 361.2	\$ 58.9	\$ 23.5

(1) For further details related to the impact associated with actuarial assumption updates and model refinements on results for 2018, 2017, and 2016, see "Transactions Affecting Comparability of Results of Operations — Other — Actuarial Assumption Updates."

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Pre-Tax Operating Earnings

Pre-tax operating earnings increased \$33.5 million in our Specialty Benefits insurance business primarily due to more favorable claims experience. Pre-tax operating earnings increased \$25.4 million in our Individual Life insurance business primarily due to a less unfavorable impact associated with actuarial assumption updates and model refinements in 2018 as compared to 2017.

Operating Revenues

Premium and fees increased primarily due to growth in the business.

Total Expenses

Benefits, claims and settlement expenses increased primarily due to \$114.3 million related to growth in the business, partially offset by \$40.1 million of favorable claims experience in our Specialty Benefits insurance business.

Operating expenses increased \$64.6 million in our Specialty Benefits insurance business primarily due to growth in the business. Operating expenses decreased \$43.9 million in our Individual Life insurance business primarily due to a favorable impact associated with actuarial assumption updates and model refinements in 2018 as compared to an unfavorable impact in 2017.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016**Pre-Tax Operating Earnings**

Pre-tax operating earnings increased primarily due to growth in the business.

Operating Revenues

Premium and fees increased primarily due to growth in the business.

Total Expenses

Benefits, claims and settlement expenses increased \$91.1 million in our Specialty Benefits insurance business primarily due to growth in the business. Benefits, claims and settlement expenses increased in our Individual Life insurance business primarily due to a \$61.5 million increase associated with growth in the business, partially offset by a \$35.1 million decrease resulting from a less unfavorable impact associated with actuarial assumption updates and model refinements in 2017 as compared to 2016.

Operating expenses increased in our Specialty Benefits insurance business primarily due to a \$50.7 million increase associated with growth in the business and a \$12.1 million increase resulting from a favorable impact associated with actuarial assumption updates and model refinements in 2016 and no impact in 2017. Operating expenses increased \$83.1 million in our Individual Life insurance business primarily resulting from an unfavorable impact associated with actuarial assumption updates and model refinements in 2017 as compared to a favorable impact in 2016.

Corporate Segment**Corporate Segment Summary Financial Data**

The following table presents certain summary financial data relating to the Corporate segment for the years indicated:

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(in millions)</i>				
Total operating revenues	\$ (51.2)	\$ (60.8)	\$ (46.3)	\$ 9.6	\$ (14.5)
Total expenses	124.8	148.8	150.1	(24.0)	(1.3)
Pre-tax operating earnings attributable to noncontrolling interest	2.6	0.9	22.5	1.7	(21.6)
Pre-tax operating losses	<u>\$ (178.6)</u>	<u>\$ (210.5)</u>	<u>\$ (218.9)</u>	<u>\$ 31.9</u>	<u>\$ 8.4</u>

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017**Pre-Tax Operating Losses**

Pre-tax operating losses decreased primarily due to interest and penalty abatements received related to tax settlements recorded in 2018.

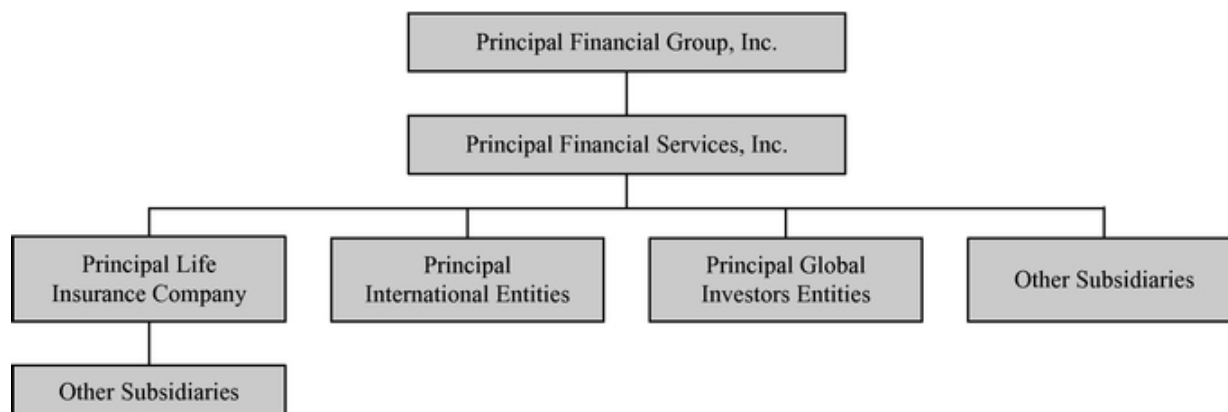
Year Ended December 31, 2017 Compared to Year Ended December 31, 2016**Pre-Tax Operating Losses**

Pre-tax operating losses decreased primarily due to a \$17.1 million reduction in financing activities and a \$14.7 million reduction in pension and OPEB expense. These were partially offset by a \$20.0 million fee resulting from our election to discontinue an arrangement with one of our financing counterparties in the first quarter of 2017.

Liquidity and Capital Resources

Liquidity and capital resources represent the overall strength of a company and its ability to generate strong cash flows, borrow funds at a competitive rate and raise new capital to meet operating and growth needs. Our legal entity

structure has an impact on our ability to meet cash flow needs as an organization. Following is a simplified organizational structure.



Liquidity

Our liquidity requirements have been and will continue to be met by funds from consolidated operations as well as the issuance of commercial paper, common stock, debt or other capital securities and borrowings from credit facilities. We believe the cash flows from these sources are sufficient to satisfy the current liquidity requirements of our operations, including reasonably foreseeable contingencies.

We maintain a level of cash and securities which, combined with expected cash inflows from investments and operations, we believe to be adequate to meet anticipated short-term and long-term payment obligations. We will continue our prudent capital management practice of regularly exploring options available to us to maximize capital flexibility, including accessing the capital markets and careful attention to and management of expenses.

We perform rigorous liquidity stress testing to ensure our asset portfolio includes sufficient high quality liquid assets that could be utilized to bolster our liquidity position under increasingly stressed market conditions. These assets could be utilized as collateral for secured borrowing transactions with various third parties or by selling the securities in the open market if needed.

We also manage liquidity risk by limiting the sales of liabilities with features such as puts or other options that can be exercised at inopportune times. For example, as of December 31, 2018, approximately \$9.0 billion, or 99%, of our institutional guaranteed investment contracts and funding agreements cannot be redeemed by contractholders prior to maturity. Our individual annuity liabilities also contain surrender charges and other provisions limiting early surrenders.

The following table summarizes the withdrawal characteristics of our domestic general account investment contracts as of December 31, 2018.

	<u>Contractholder funds</u> <i>(in millions)</i>	<u>Percentage</u>
Not subject to discretionary withdrawal	\$ 9,982.8	31.3%
Subject to discretionary withdrawal with adjustments:		
Specified surrender charges	8,712.8	27.3
Market value adjustments	7,327.9	23.0
Subject to discretionary withdrawal without adjustments	5,848.8	18.4
Total domestic investment contracts	<u>\$ 31,872.3</u>	<u>100.0%</u>

Universal life insurance and certain traditional life insurance policies are also subject to discretionary withdrawals by policyholders. However, life insurance policies tend to be less susceptible to withdrawal than our investment contracts because policyholders may be subject to a new underwriting process in order to obtain a new life insurance policy. In addition, our life insurance liabilities include surrender charges to discourage early surrenders.

We had the following short-term credit facilities with various financial institutions as of December 31, 2018:

<u>Obligor/Applicant</u>	<u>Financing structure</u>	<u>Maturity</u>	<u>Capacity</u>	<u>Amount outstanding (3)</u>
				<i>(in millions)</i>
PFG, PFS, and Principal Life as co-borrowers (1)	Credit facility	November 2023	\$ 600.0	\$ —
PFG, PFS, Principal Life and Principal Financial Services V (UK) LTD as co-borrowers (1)	Credit facility	November 2023	200.0	—
Principal International Chile (2)	Unsecured lines of credit		141.4	42.9
Principal Life	Unsecured line of credit	September 2019	60.0	—
Total			\$ 1,001.4	\$ 42.9

- (1) The credit facility was extended during the fourth quarter of 2018 and is supported by eighteen banks.
- (2) The unsecured lines of credit can be used for repurchase agreements or other borrowings. Each line has a maturity of less than one year.
- (3) The amount outstanding is reported in short-term debt on the consolidated statements of financial position.

The revolving credit facilities are committed and available for general corporate purposes. Most of the banks supporting the credit facilities have other relationships with us. Due to the financial strength and the strong relationships we have with these providers, we are comfortable we have very low risk the financial institutions would be unable or unwilling to fund these facilities.

The Holding Companies: Principal Financial Group, Inc. and Principal Financial Services, Inc. The principal sources of funds available to our parent holding company, PFG, are dividends from subsidiaries as well as its ability to borrow funds at competitive rates and raise capital to meet operating and growth needs. These funds are used by PFG to meet its obligations, which include the payment of dividends on common stock, debt service and the repurchase of stock. The declaration and payment of common stock dividends is subject to the discretion of our Board of Directors and will depend on our overall financial condition, results of operations, capital levels, cash requirements, future prospects, receipt of dividends from Principal Life (as described below), risk management considerations and other factors deemed relevant by the Board. No significant restrictions limit the payment of dividends by PFG, except those generally applicable to corporations incorporated in Delaware.

Dividends from Principal Life, our primary subsidiary, are limited by Iowa law. Under Iowa law, Principal Life may pay dividends only from the earned surplus arising from its business and must receive the prior approval of the Commissioner of Insurance of the State of Iowa (the "Commissioner") to pay stockholder dividends or make any other distribution if such distribution would exceed certain statutory limitations. Iowa law gives the Commissioner discretion to disapprove requests for distributions in excess of these limitations. Extraordinary dividends include those made, together with dividends and other distributions, within the preceding twelve months that exceed the greater of (i) 10% of statutory policyholder surplus as of the previous year-end or (ii) the statutory net gain from operations from the previous calendar year, not to exceed earned surplus. Based on statutory results for the year ended December 31, 2018, the ordinary stockholder dividend limitation for Principal Life is approximately \$1,085.7 million in 2019.

Total stockholder dividends paid by Principal Life to its parent in 2018 were \$840.0 million, all of which was extraordinary and approved by the Commissioner. As of December 31, 2018, we had \$1,569.2 million of cash and liquid assets held in our holding companies and other subsidiaries, which is available for corporate purposes. This includes assets in excess of targeted statutory capital ratios and immediate working capital needs. Corporate balances held in foreign holding companies meet the indefinite reinvestment exception (see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes"). We recorded a one-time deemed repatriation tax on certain accumulated foreign earnings as a result of the U.S. tax reform; however, we have not had a change in the indefinite reinvestment assertion as we still have plans in place to use cash offshore.

On May 1, 2017, Principal Life sold its ownership interest in Principal Global Investors, LLC to Principal Life's direct parent, PFS, in connection with a corporate reorganization designed to better utilize and allocate capital internally. Subsequent to the sale, Principal Life paid an extraordinary dividend of \$1,068.4 million to its parent, which was approved by the Commissioner, primarily from proceeds received from the sale. In 2017, total stockholder dividends paid by Principal Life to its parent were \$1,818.4 million, all of which was extraordinary and approved by the Commissioner.

In 2016, total stockholder dividends paid by Principal Life to its parent were \$1,175.0 million, of which \$650.0 million was extraordinary and approved by the Commissioner.

Operations. Our primary consolidated cash flow sources are premiums from insurance products, pension and annuity deposits, asset management fee revenues, administrative services fee revenues, income from investments and proceeds from the sales or maturity of investments. Cash outflows consist primarily of payment of benefits to policyholders and beneficiaries, income and other taxes, current operating expenses, payment of dividends to policyholders, payments in connection with investments acquired, payments made to acquire subsidiaries, payments relating to policy and contract surrenders, withdrawals, policy loans, interest payments and repayment of short-term debt

and long-term debt. Our investment strategies are generally intended to provide adequate funds to pay benefits without forced sales of investments. For a discussion of our investment objectives and strategies, see "Investments."

Cash Flows. All cash flow activity, as reported in our consolidated statements of cash flows, provides relevant information regarding our sources and uses of cash. The following discussion of our operating, investing and financing portions of the cash flows excludes cash flows attributable to the separate accounts.

Net cash provided by operating activities was \$5,156.5 million, \$4,188.0 million and \$3,857.8 million for the years ended December 31, 2018, 2017 and 2016, respectively. Our insurance businesses typically generate positive cash flows from operating activities, as premiums collected from our insurance products and income received from our investments exceed acquisition costs, benefits paid, redemptions and operating expenses. These positive cash flows are then invested to support the obligations of our insurance and investment products and required capital supporting these products. Our cash flows from operating activities are affected by the timing of premiums, fees and investment income received and benefits and expenses paid. The increase in cash provided by operating activities in 2018 compared to 2017 was primarily due to growth in the business and a decrease in net cash outflows for trading securities and equity securities with operating intent. The increase in cash provided by operating activities in 2017 compared to 2016 was the result of fluctuations in receivables and payables associated with the timing of settlements. The increase was partially offset by net outflows from trading securities.

Net cash used in investing activities was \$5,702.5 million, \$4,052.8 million and \$5,153.9 million for the years ended December 31, 2018, 2017 and 2016, respectively. The increase in cash used in investing activities in 2018 compared to 2017 was driven by increased net purchases of fixed maturities available-for-sale and equity securities with intent to hold, an increase in mortgage loans acquired or originated and a decrease in cash provided from the sale of real estate. The decrease in cash used in investing activities in 2017 compared to 2016 was driven by decreased net purchases of available-for-sale securities and the net sale of real estate.

Net cash provided by financing activities was \$1,052.7 million and \$1,450.9 million for the years ended December 31, 2018 and 2016, respectively, compared to net cash used in financing activities of \$384.0 million for the year ended December 31, 2017. The increase in cash provided by financing activities in 2018 compared to 2017 was the result of higher net investment contract deposits in 2018 as compared to 2017. The increase in cash used in financing activities in 2017 compared to 2016 was the result of lower net investment contract deposits primarily in the investment only business.

Shelf Registration. On May 3, 2017, our shelf registration statement was filed with the SEC and became effective. The shelf registration replaced the shelf registration that had been in effect since May 2014. Under our current shelf registration, we have the ability to issue, in unlimited amounts, unsecured senior debt securities or subordinated debt securities, junior subordinated debt, preferred stock, common stock, warrants, depository shares, purchase contracts and purchase units of PFG. Our wholly owned subsidiary, PFS, may guarantee, fully and unconditionally or otherwise, our obligations with respect to any non-convertible securities, other than common stock, described in the shelf registration. For information on senior notes issued from our shelf registration, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 9, Debt."

Short-Term Debt. For short-term debt information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 9, Debt."

Long-Term Debt. On November 10, 2016, we issued \$650.0 million of senior notes, in two tranches. The proceeds from the issuance of these notes were used to redeem our notes payable due in 2017 and 2019. On November 18 and December 5, 2016, we used available cash to purchase approximately \$94.4 million in aggregate principal amount of our senior notes due in 2036. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 9, Debt" for further information.

Contingent Funding Agreements for Senior Debt Issuance. On March 8, 2018, we entered into two contingent funding agreements that give us the right at any time over a ten-year or thirty-year period to issue up to \$400.0 million or \$350.0 million, respectively, of senior notes. For more information on the contingent funding agreements, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 9, Debt" under the caption "Contingent Funding Agreements for Senior Debt Issuance."

Stockholders' Equity. Proceeds from the issuance of our common stock were \$64.0 million, \$162.5 million and \$37.8 million in 2018, 2017 and 2016, respectively.

The following table summarizes our return of capital to common stockholders.

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Dividends to stockholders	\$ 598.6	\$ 540.0	\$ 464.9
Repurchase of common stock	671.6	220.4	277.3
Total cash returned to stockholders	\$ 1,270.2	\$ 760.4	\$ 742.2
Number of shares repurchased	12.1	3.6	6.7

For additional stockholders' equity information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 13, Stockholders' Equity."

Capitalization

The following table summarizes our capital structure:

	December 31, 2018	December 31, 2017
	(\$ in millions)	
Debt:		
Short-term debt	\$ 42.9	\$ 39.5
Long-term debt	3,259.6	3,178.4
Total debt	3,302.5	3,217.9
Total stockholders' equity attributable to PFG	11,390.0	12,849.3
Total capitalization	\$ 14,692.5	\$ 16,067.2
Debt to equity	29%	25%
Debt to capitalization	22%	20%

Contractual Obligations

The following table presents payments due by period for long-term contractual obligations as of December 31, 2018.

Contractual obligations (1)	Total payments	Payments due in year ending			
		2019	2020 - 2021	2022 - 2023	2024 and thereafter
		(in millions)			
Contractholder funds (2)	\$ 100,750.9	\$ 6,731.6	\$ 13,637.2	\$ 9,466.8	\$ 70,915.3
Future policy benefits and claims (3)	56,825.6	3,245.4	5,977.4	5,591.0	42,011.8
Long-term debt (4)	3,259.6	26.7	59.8	597.3	2,575.8
Certificates of deposit (5)	500.1	212.3	210.9	75.7	1.2
Other long-term liabilities (6)	2,276.0	1,905.0	75.5	71.7	223.8
Capital leases (7)	34.3	12.7	19.2	2.2	0.2
Long-term debt interest (4)	2,505.4	139.1	269.3	250.3	1,846.7
Operating leases (8)	235.2	50.3	79.8	48.7	56.4
Purchase obligations (9)	1,310.7	1,256.6	43.5	10.6	—
Total contractual obligations	\$ 167,697.8	\$ 13,579.7	\$ 20,372.6	\$ 16,114.3	\$ 117,631.2

- (1) Contractual obligations exclude short-term liabilities, other policyholder funds, taxes and short-term debt as these are not long-term and/or not contractual in nature. Contractual obligations also exclude obligations under our pension and OPEB plans as we do not anticipate contributions will be needed to satisfy the minimum funding requirements of ERISA for our qualified pension plan, nor do we anticipate contributions to the OPEB plans due to the funded status of the trust. In addition, separate account liabilities are excluded. Separate account liabilities represent the fair market value of the assets of the funds that are separately administered by us. Generally, the separate account contract owner, rather than us, bears the investment risk of these funds. The separate account liabilities are legally segregated and are not subject to claims that arise out of any other business of ours. Net deposits, net investment income and realized and unrealized capital gains and losses on the separate accounts are not reflected in the consolidated statements of operations. The separate account obligations will be fully funded by cash flows from the separate account assets.
- (2) Contractholder funds include GICs, funding agreements, individual fixed annuities, universal life insurance and other investment contracts. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 8, Insurance Liabilities" for additional information.
- Amounts included in the contractholder funds line item reflect estimated cash payments to be made to policyholders. The sum of the cash outflows shown for all years in the table exceeds the corresponding liability amount included in our consolidated statements of financial position as of December 31, 2018. The liability amount in our consolidated statements of financial position reflects either the account value (in the case of individual fixed annuities, universal life insurance and GICs) or the par value plus accrued interest and other adjustments (in the case of funding agreements and other investment contracts).
- (3) Amounts included in the future policy benefits and claims line item reflect estimated cash payments to be made to policyholders. The sum of the cash outflows shown for all years in the table exceeds the corresponding liability amount included in our consolidated statements of financial position as of December 31, 2018. The liability amount in our consolidated statements of financial position reflects estimated cash payments to policyholders, reductions for expected future premiums, assumptions with regard to the timing of cash payments and discounting for interest.
- (4) For long-term debt information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 9, Debt."

- (5) Amounts included in the certificates of deposit line item reflect estimated cash payments to be made, including expected interest payments. Certificates of deposit are reported with other liabilities on our consolidated statements of financial position.
- (6) Amounts included in the other long-term liabilities line item are contractual, non-cancelable and long-term in nature. The total payments primarily relate to savings deposits as well as premium associated with purchased option contracts where payments are made over the life of the contract. This line item excludes accruals, short-term items and items not contractual in nature.
- (7) Amounts included in the capital leases line item represent future minimum lease payments due under capital leases for buildings and hardware storage equipment. For capital lease information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 12, Contingencies, Guarantees and Indemnifications" under the caption, "Capital Leases."
- (8) Amounts included in the operating leases line item represent payments due under various operating leases for office space, data processing equipment and office furniture and equipment. For operating lease information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 12, Contingencies, Guarantees and Indemnifications" under the caption, "Operating Leases."
- (9) Purchase obligations include material contracts where we have a non-cancelable commitment to purchase goods and services in addition to commitments to originate loans and purchase investments.

Pension and OPEB Plan Funding

We have defined benefit pension plans covering substantially all of our U.S. employees and certain agents. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 11, Employee and Agent Benefits" for a complete discussion of these plans and their effect on the consolidated financial statements.

We report the net funded status of our pension and OPEB plans in the consolidated statements of financial position. The net funded status represents the difference between the fair value of plan assets and the projected benefit obligation for pension and OPEB plans. The measurement of the net funded status can vary based upon the fluctuations in the fair value of the plan assets and the actuarial assumptions used for the plans as discussed below. The net underfunded status of the pension and OPEB obligation was \$196.0 million pre-tax and \$253.7 million pre-tax as of December 31, 2018 and 2017, respectively. Nonqualified pension plan assets are not included as part of the funding status mentioned above. The nonqualified pension plan assets are held in Rabbi trusts for the benefit of all nonqualified plan participants. The assets held in a Rabbi trust are available to satisfy the claims of general creditors only in the event of bankruptcy. Therefore, these assets are fully consolidated in our consolidated statements of financial position and are not reflected in our funded status as they do not qualify as plan assets under U.S. GAAP. The market value of assets held in these trusts was \$348.8 million and \$352.0 million as of December 31, 2018 and 2017, respectively.

Our funding policy for the qualified pension plan is to fund the plan annually in an amount at least equal to the minimum annual contributions required under ERISA and, generally, not greater than the maximum amount that can be deducted for U.S. federal income tax purposes. We do not anticipate contributions will be needed in 2019 to satisfy the minimum funding requirements of ERISA for our qualified pension plan. We are unable to estimate the amount that may be contributed, but it is possible that we may fund the plans in 2019 up to \$25 million. This includes funding for both our qualified and nonqualified pension plans. We may contribute to our OPEB plans in 2019 pending further analysis.

Contractual Commitments

We have made commitments to fund certain limited partnerships and other funds in which we are not the general partner or investment manager. As of December 31, 2018, the amount of unfunded commitments was \$664.7 million. We are only required to fund additional equity under these commitments when called upon to do so by the partnership or fund; therefore, these commitments are not liabilities on our consolidated statements of financial position.

Off-Balance Sheet Arrangements

Variable Interest Entities. We have relationships with various types of special purpose entities and other entities where we have a variable interest as described in Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 3, Variable Interest Entities." We have made commitments to fund certain limited partnerships, as previously discussed in "Contractual Commitments", some of which are classified as unconsolidated variable interest entities.

Guarantees and Indemnifications. As of December 31, 2018, no significant changes to guarantees and indemnifications have occurred since December 31, 2017. For guarantee and indemnification information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 12, Contingencies, Guarantees and Indemnifications" under the caption, "Guarantees and Indemnifications."

Financial Strength and Credit Ratings

Our ratings are influenced by the relative ratings of our peers/competitors as well as many other factors including our operating and financial performance, capital levels, asset quality, liquidity, asset/liability management, overall portfolio mix, financial leverage (i.e., debt), risk exposures and operating leverage.

In August 2018, Fitch affirmed the 'AA-' financial strength ratings of Principal Life and PNLIC. Fitch also affirmed PFG's senior unsecured debt at 'A-'. The outlook on all ratings remains 'stable'. The rating reflects very strong and stable operating profitability and a very strong business profile, reflecting strong market position and significant operating scale focusing on small and midsize businesses in the retirement market.

In April 2018, S&P affirmed the financial strength ratings of Principal Life and PNLIC at 'A+'. S&P upgraded PFG's senior unsecured debt rating to 'A-' from 'BBB+'. The outlook remains 'stable' for all ratings. Principal Life's enterprise risk management rating was affirmed as 'Strong'. The rating affirmation reflects S&P's view that we have a very strong competitive position as a leader in the U.S. small to midsize 401(k) market, with strong asset management and insurance solution capabilities. The upgrade of the senior debt rating reflects growth in unregulated cash flow available to the holding company.

In February 2018, A.M. Best affirmed the financial strength ratings of Principal Life and PNLIC at 'A+'. The outlook remains 'stable' for all ratings. The affirmation reflects Principal's very strong balance sheet strength as well as its favorable operating performance, favorable business profile and appropriate enterprise risk management.

In the fourth quarter of 2018, A.M. Best changed its outlook on the U.S. life insurance sector to 'stable' from 'negative' due to increased profitability, improved regulatory and tax environments and a strengthening U.S. economy, along with overall reduced balance sheet risk due to a proactive approach taken by companies in recent years. Fitch, S&P and Moody's continue to maintain a 'stable' outlook as well.

The following table summarizes our significant financial strength and debt ratings from the major independent rating organizations. The debt ratings shown are indicative ratings. Outstanding issuances are rated the same as indicative ratings unless otherwise noted. Actual ratings can differ from indicative ratings based on contractual terms. A rating is not a recommendation to buy, sell or hold securities. Such a rating may be subject to revision or withdrawal at any time by the assigning rating agency. Each rating should be evaluated independently of any other rating.

	A.M. Best	Fitch	S&P	Moody's
Principal Financial Group				
Senior Unsecured Debt (1)	a-	A-	A-	Baa2
Junior Subordinated Debt (2)	bbb+		BBB+	Baa3
Long-Term Issuer Default Rating		A		
Principal Financial Services				
Senior Unsecured Debt	a-		A-	Baa1
Long-Term Issuer Default Rating		A		
Principal Life Insurance Company				
Insurer Financial Strength	A+	AA-	A+	A1
Issuer Credit Rating	aa-			
Commercial Paper	AMB-1+		A-1+	P-1
Enterprise Risk Management Rating			Strong	
Principal National Life Insurance Company				
Insurer Financial Strength	A+	AA-	A+	A1

- (1) Principal Financial Group's senior debt issuance has been rated "Baa1" by Moody's.
- (2) Principal Financial Group's junior subordinated debt issuance has been rated "BBB" by S&P and "Baa2" by Moody's.

Impacts of Income Taxes

For income tax information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 10, Income Taxes."

Fair Value Measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three levels. The fair value hierarchy gives the highest priority (Level 1) to unadjusted quoted prices in active markets for identical assets or liabilities and gives the lowest priority (Level 3) to unobservable inputs. The level in the fair value hierarchy within which the fair value measurement in its entirety falls is determined based on the lowest level input that is significant to the fair value measurement in its entirety considering factors specific to the asset or liability. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" for further details, including a reconciliation of changes in Level 3 fair value measurements.

As of December 31, 2018, 39% of our net assets (liabilities) were Level 1, 57% were Level 2 and 4% were Level 3. Excluding separate account assets as of December 31, 2018, 3% of our net assets (liabilities) were Level 1, 97% were Level 2 and 0% were Level 3.

As of December 31, 2017, 41% of our net assets (liabilities) were Level 1, 56% were Level 2 and 3% were Level 3. Excluding separate account assets as of December 31, 2017, 3% of our net assets (liabilities) were Level 1, 97% were Level 2 and 0% were Level 3.

Changes in Level 3 Fair Value Measurements

Net assets (liabilities) measured at fair value on a recurring basis using significant unobservable inputs (Level 3) as of December 31, 2018, were \$8,729.4 million as compared to \$7,791.7 million as of December 31, 2017. The increase was primarily related to gains and net purchases in our separate account assets and net purchases of certain structured securities. These increases were partially offset by net transfers out of Level 3 into Level 2 for certain fixed maturities, available for sale. The transfers out of Level 3 were due to our obtaining prices from recognized third party pricing vendors or from internal models using substantially all market observable information versus relying on broker quotes or utilizing significant unobservable inputs.

Net assets (liabilities) measured at fair value on a recurring basis using significant unobservable inputs (Level 3) as of December 31, 2017, were \$7,791.7 million as compared to \$7,779.6 million as of December 31, 2016. The increase was primarily related to gains in our separate account assets. These gains were partially offset by net sales of our separate account assets and net transfers out of Level 3 into Level 2 for certain fixed maturities, available-for-sale. The transfers out of Level 3 were due to our obtaining prices from recognized third party pricing vendors or from internal models using substantially all market observable information versus relying on broker quotes or utilizing significant unobservable inputs.

Investments

We had total consolidated assets as of December 31, 2018, of \$243,036.1 million, of which \$84,766.6 million were invested assets. The rest of our total consolidated assets are comprised primarily of separate account assets for which we do not bear investment risk; therefore, the discussion and financial information below does not include such assets.

Overall Composition of Invested Assets

Invested assets as of December 31, 2018, were predominantly high quality and broadly diversified across asset class, individual credit, industry and geographic location. Asset allocation is determined based on cash flow and the risk/return requirements of our products. As shown in the following table, the major categories of invested assets are fixed maturities and commercial mortgage loans. The remainder is invested in other investments, equity securities, real estate and residential mortgage loans. In addition, policy loans are included in our invested assets.

	December 31, 2018		December 31, 2017	
	Carrying amount	% of total	Carrying amount	% of total
	(\$ in millions)			
Fixed maturities:				
Public	\$ 40,168.2	48%	\$ 41,999.3	51%
Private	20,576.4	24	17,955.1	22
Equity securities	1,843.7	2	1,866.6	2
Mortgage loans:				
Commercial	13,972.0	16	12,871.5	16
Residential	1,364.9	2	1,279.0	2
Real estate held for sale	209.6	—	212.9	—
Real estate held for investment	1,520.1	2	1,523.8	2
Policy loans	801.4	1	808.3	1
Other investments	4,310.3	5	3,586.2	4
Total invested assets	<u>84,766.6</u>	<u>100%</u>	<u>82,102.7</u>	<u>100%</u>
Cash and cash equivalents	2,977.5		2,470.8	
Total invested assets and cash	<u>\$ 87,744.1</u>		<u>\$ 84,573.5</u>	

Investment Results

Net Investment Income

The following table presents the yield and investment income, excluding net realized capital gains and losses, for our invested assets for the years indicated. We calculate annualized yields using a simple average of asset classes at the beginning and end of the reporting period. The yields for available-for-sale fixed maturities are calculated using

amortized cost. Prior to 2018, yields on equity securities classified as available-for-sale were calculated using cost. All other yields are calculated using carrying amounts.

	For the year ended December 31,						Increase (decrease)			
	2018		2017		2016		2018 vs. 2017		2017 vs. 2016	
	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount
	(\$ in millions)									
Fixed maturities	4.3%	\$ 2,506.3	4.3%	\$ 2,354.9	4.4%	\$ 2,274.0	—%	\$ 151.4	(0.1)%	\$ 80.9
Equity securities	2.1	38.8	4.0	67.8	3.6	51.5	(1.9)	(29.0)	0.4	16.3
Mortgage loans — commercial	4.2	568.0	4.4	544.6	4.4	513.4	(0.2)	23.4	—	31.2
Mortgage loans — residential	5.6	73.4	4.9	61.3	5.3	60.5	0.7	12.1	(0.4)	0.8
Real estate	9.2	158.8	8.3	129.4	9.1	127.9	0.9	29.4	(0.8)	1.5
Policy loans	5.6	45.0	5.6	45.6	5.6	46.3	—	(0.6)	—	(0.7)
Cash and cash equivalents	2.1	56.2	1.1	28.6	0.5	14.2	1.0	27.6	0.6	14.4
Other investments	7.2	285.1	8.7	316.4	8.5	293.1	(1.5)	(31.3)	0.2	23.3
Total	4.4	3,731.6	4.5	3,548.6	4.6	3,380.9	(0.1)	183.0	(0.1)	167.7
Investment expenses	(0.1)	(102.4)	(0.1)	(89.3)	(0.1)	(84.4)	—	(13.1)	—	(4.9)
Net investment income	4.3%	\$ 3,629.2	4.4%	\$ 3,459.3	4.5%	\$ 3,296.5	(0.1)%	\$ 169.9	(0.1)%	\$ 162.8

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net investment income from fixed maturities increased primarily due to higher average invested assets in our U.S. operations.

Net investment income from equity securities decreased primarily due to unfavorable relative market performance on our required regulatory investments in our Latin America business.

Net investment income from real estate increased primarily due to the sale of certain value-add real estate, additional leasing in the portfolio and decreased operating expenses at the properties in the current year vs. prior year.

Net investment income from cash and cash equivalents increased primarily due to an increase in short-term interest rates coupled with increased cash equivalents activity compared to the prior year.

Net investment income from other investments decreased primarily due to lower earnings in our equity method investment in Brazil.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net investment income from fixed maturities increased primarily due to higher average invested assets, partially offset by lower investment yields on invested assets in our U.S. operations.

Net investment income from equity securities increased primarily due to favorable relative market performance on our required regulatory investments in our Latin America business.

Net investment income from commercial mortgages increased primarily due to higher average invested assets and higher prepayments, partially offset by lower investment yields on invested assets in our U.S. operations.

Net investment income from other investments increased primarily due to the change in volume of interest rate swaps designated as hedging instruments and associated market impacts, partially offset by the sale of value-add joint venture real estate during 2016.

Net Realized Capital Gains (Losses)

The following table presents the contributors to net realized capital gains and losses for the years indicated.

	For the year ended December 31,			Increase (decrease)	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(in millions)				
Fixed maturities, available-for-sale — credit impairments (1)	\$ (29.1)	\$ (80.6)	\$ (96.5)	\$ 51.5	\$ 15.9
Commercial mortgage loans — credit impairments	1.6	2.0	(1.2)	(0.4)	3.2
Other — credit impairments	4.6	6.9	4.0	(2.3)	2.9
Fixed maturities, available-for-sale and trading — noncredit	(41.2)	(21.6)	49.9	(19.6)	(71.5)
Derivatives and related hedge activities (2)	(26.5)	(168.0)	179.1	141.5	(347.1)
Other gains (losses)	15.2	785.5	35.8	(770.3)	749.7
Net realized capital gains (losses)	\$ (75.4)	\$ 524.2	\$ 171.1	\$ (599.6)	\$ 353.1

(1) Includes credit impairments as well as losses on sales of fixed maturities to reduce credit risk, net of realized credit recoveries on the sale of previously impaired securities. Credit gains on sales, excluding associated foreign currency fluctuations that are included in derivatives

and related hedge activities, were a net gain of \$0.0 million, \$1.1 million and \$0.2 million for the years ended December 31, 2018, 2017 and 2016, respectively.

- (2) Includes fixed maturities, trading net losses of \$(2.4) million, \$0.0 million and \$0.0 million for the years ended December 31, 2018, 2017 and 2016, respectively, which are a component of the GMWB embedded derivative hedging program net realized capital gains (losses) reflected in this line.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net realized capital losses on fixed maturities, available for sale — credit impairments decreased primarily due to lower impairments on corporate and structured fixed maturities.

Net realized capital losses on derivatives and related hedge activities decreased primarily due to gains in 2018 versus losses in 2017 on the GMWB embedded derivatives, including changes in the spread reflecting our own creditworthiness, and related hedging instruments and on interest rate swaps not designated as hedging instruments due to changes in interest rates. These changes were partially offset by currency derivatives that had losses in 2018 versus gains in 2017 due to changes in exchange rates.

Other gains decreased primarily due to net gains resulting from real estate transactions in 2017.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Fixed maturities, available-for-sale and trading — noncredit had net losses in 2017 as compared to net gains in 2016 primarily due to the sale of a long dated structured security in 2016 and other noncredit sales at losses in 2017 versus gains in 2016.

Derivatives and related hedge activities had net losses in 2017 as compared to net gains in 2016 primarily due to losses in 2017 versus gains in 2016 on interest rate swap derivatives not designated as hedging instruments due to changes in interest rates and increased losses on the GMWB embedded derivatives, including changes in the spread reflecting our own creditworthiness, and related hedging instruments.

Other gains increased primarily due to net gains resulting from real estate transactions in 2017.

U.S. Investment Operations

Of our invested assets, \$77,274.5 million were held by our U.S. operations as of December 31, 2018. Our U.S. invested assets are managed primarily by our Principal Global Investors segment. Our Investment Committee, appointed by our Board of Directors, is responsible for establishing investment policies and monitoring risk limits and tolerances. Our primary investment objective is to maximize after-tax returns consistent with acceptable risk parameters. We seek to protect customers' benefits by optimizing the risk/return relationship on an ongoing basis, through asset/liability matching, reducing credit risk, avoiding high levels of investments that may be redeemed by the issuer, maintaining sufficiently liquid investments and avoiding undue asset concentrations through diversification. We are exposed to two primary sources of investment risk:

- credit risk, relating to the uncertainty associated with the continued ability of an obligor to make timely payments of principal and interest and
- interest rate risk, relating to the market price and/or cash flow variability associated with changes in market yield curves.

Our ability to manage credit risk is essential to our business and our profitability. We devote considerable resources to the credit analysis of each new investment. We manage credit risk through industry, issuer and asset class diversification.

A dedicated committee, comprised of senior investment professional staff members, approves the credit rating for the fixed maturities we purchase. We have teams of security analysts, organized by industry and asset class, that analyze and monitor these investments. Investments held in the portfolio are monitored on a continuous basis with a formal review documented annually or more frequently if material events affect the issuer. The analysis includes both fundamental and technical factors. The fundamental analysis encompasses both quantitative and qualitative analysis of the issuer. The qualitative analysis includes an assessment of both accounting and management aggressiveness of the issuer. In addition, technical indicators such as stock price volatility and credit default swap levels are monitored. We regularly review our investments to determine whether we should re-rate them, employing the following criteria:

- material changes in the issuer's revenues, margins, capital structure or collateral values;
- significant management or organizational changes;
- significant changes regarding the issuer's industry;
- debt service coverage or cash flow ratios that fall below industry-specific thresholds;
- violation of financial covenants and
- other business factors that relate to the issuer.

We purchase credit default swaps to hedge certain credit exposures in our investment portfolio. We economically hedged credit exposure in our portfolio by purchasing credit default swaps with a notional amount of \$95.0 million and \$143.5 million as of December 31, 2018 and December 31, 2017, respectively. We sell credit default swaps to offer credit protection to investors when entering into synthetic replicating transactions. When selling credit protection, if there is an event of default by the referenced name, we are obligated to pay the counterparty the referenced amount of the contract and receive in return the referenced security. For further information on credit derivatives sold, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 5, Derivative Financial Instruments" under the caption, "Credit Derivatives Sold."

Our use of derivatives exposes us to counterparty risk, or the risk that the counterparty fails to perform the terms of the derivative contract. We actively manage this risk by:

- obtaining approval of all new counterparties by the Investment Committee;
- establishing exposure limits that take into account non-derivative exposure we have with the counterparty as well as derivative exposure;
- performing similar credit analysis prior to approval on each derivatives counterparty that we do when lending money on a long-term basis;
- diversifying our risk across numerous approved counterparties;
- implementing credit support annex (collateral) agreements ("CSAs") for over-the-counter derivative transactions or similar agreements with a majority of our counterparties to further limit counterparty exposures, which provide for netting of exposures;
- limiting exposure to A credit or better for over-the-counter derivative counterparties without CSAs;
- conducting stress-test analysis to determine the maximum exposure created during the life of a prospective transaction;
- daily monitoring of counterparty credit ratings, exposures and associated collateral levels and
- trading mandatorily cleared contracts through centralized clearinghouses.

We manage our exposure on a net basis, whereby we net positive and negative exposures for each counterparty with agreements in place. For further information on derivative exposure, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Balance Sheet Offsetting."

A dedicated risk management team is responsible for centralized monitoring of the commercial mortgage loan portfolio. We apply a variety of strategies to minimize credit risk in our commercial mortgage loan portfolio. When considering new commercial mortgage loans, we review the cash flow fundamentals of the property, make a physical assessment of the underlying commercial real estate, conduct a comprehensive market analysis and compare against industry lending practices. We use a proprietary risk rating model to evaluate all new and substantially all existing loans within the portfolio. The proprietary risk model is designed to stress projected cash flows under simulated economic and market downturns. Our lending guidelines are typically 75% or less loan-to-value ratio and a debt service coverage ratio of at least 1.2 times. We analyze investments outside of these guidelines based on cash flow quality, tenancy and other factors. The following table presents loan-to-value and debt service coverage ratios for our brick and mortar commercial mortgage loans:

	Weighted average loan-to-value ratio		Debt service coverage ratio	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
New mortgages	50%	51%	2.2X	2.5X
Entire mortgage portfolio	45%	45%	2.5X	2.7X

We also seek to manage call or prepayment risk arising from changes in interest rates. We assess and price for call or prepayment risks in all of our investments and monitor these risks in accordance with asset/liability management policies.

The amortized cost and weighted average yield, calculated using amortized cost, of non-structured fixed maturity securities that will be callable at the option of the issuer, excluding securities with a make-whole provision, were \$3,027.6 million and 3.6%, respectively, as of December 31, 2018 and \$2,869.7 million and 3.4%, respectively, as of December 31, 2017. In addition, the amortized cost and weighted average yield of residential mortgage-backed pass-through securities ("RMBS"), residential collateralized mortgage obligations, and asset-backed securities — home equity with material prepayment risk were \$6,474.6 million and 3.3%, respectively, as of December 31, 2018 and \$5,538.6 million and 3.1%, respectively, as of December 31, 2017.

Our investment decisions and objectives are a function of the underlying risks and product profiles of each primary business operation. In addition, we diversify our product portfolio offerings to include products that contain features that will protect us against fluctuations in interest rates. Those features include adjustable crediting rates, policy surrender charges and market value adjustments on liquidations. For further information on our management of interest rate risk, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk — Interest Rate Risk."

Overall Composition of U.S. Invested Assets

As shown in the following table, the major categories of U.S. invested assets are fixed maturities and commercial mortgage loans. The remainder is invested in other investments, real estate, residential mortgage loans and equity securities. In addition, policy loans are included in our invested assets. The following discussion analyzes the composition of U.S. invested assets, but excludes invested assets of the separate accounts.

	December 31, 2018		December 31, 2017	
	Carrying amount	% of total	Carrying amount	% of total
	(\$ in millions)			
Fixed maturities:				
Public	\$ 36,599.0	47%	\$ 38,026.4	51%
Private	20,527.8	27	17,943.2	24
Equity securities	418.6	1	411.8	1
Mortgage loans:				
Commercial	13,721.2	18	12,700.8	17
Residential	905.8	1	722.7	1
Real estate held for sale	207.7	—	210.7	—
Real estate held for investment	1,518.6	2	1,522.0	2
Policy loans	779.8	1	783.4	1
Other investments	2,596.0	3	1,815.4	3
Total invested assets	77,274.5	100%	74,136.4	100%
Cash and cash equivalents	2,728.1		2,284.4	
Total invested assets and cash	\$ 80,002.6		\$ 76,420.8	

Fixed Maturities

Fixed maturities include bonds, ABS, redeemable preferred stock and certain non-redeemable preferred securities. Included in the privately placed category as of December 31, 2018 and December 31, 2017, were \$15.2 billion and \$12.7 billion, respectively, of securities subject to certain holding periods and resale restrictions pursuant to Rule 144A of the Securities Act of 1933.

Fixed maturities were diversified by category of issuer, as shown in the following table for the years indicated.

	December 31, 2018		December 31, 2017	
	Carrying amount	Percent of total	Carrying amount	Percent of total
	(\$ in millions)			
U.S. government and agencies	\$ 1,419.0	2%	\$ 1,328.8	2%
States and political subdivisions	6,214.1	11	6,793.8	12
Non-U.S. governments	732.0	1	528.3	1
Corporate — public	18,939.8	33	20,679.9	37
Corporate — private	13,502.8	24	13,026.8	23
Residential mortgage-backed pass-through securities	2,775.6	5	2,879.2	5
Commercial mortgage-backed securities	3,927.8	7	3,675.9	7
Residential collateralized mortgage obligations	3,368.7	6	2,483.7	5
Asset-backed securities	6,247.0	11	4,573.2	8
Total fixed maturities	\$ 57,126.8	100%	\$ 55,969.6	100%

We believe it is desirable to hold residential mortgage-backed pass-through securities due to their credit quality and liquidity as well as portfolio diversification characteristics. Our portfolio is comprised of Government National Mortgage Association, Federal National Mortgage Association and Federal Home Loan Mortgage Corporation pass-through securities. In addition, our residential collateralized mortgage obligation portfolio offers structural features that allow cash flows to be matched to our liabilities.

We purchase CMBS to diversify the overall credit risks of the fixed maturities portfolio and to provide attractive returns. The primary risks in holding CMBS are structural and credit risks. Structural risks include the security's priority in the issuer's capital structure, the adequacy of and ability to realize proceeds from the collateral and the potential for prepayments. Credit risks involve collateral and issuer/servicer risk where collateral and servicer performance may deteriorate. CMBS are predominantly comprised of large pool securitizations that are diverse by property type, borrower and geographic dispersion. The risks to any CMBS deal are determined by the credit quality of the underlying loans and how those loans perform over time. Another key risk is the vintage of the underlying loans and the state of the markets during a particular vintage. In the CMBS market, there is a material difference in the outlook for the performance of loans originated in 2004 and earlier relative to loans originated in 2005 through 2008. For loans originated prior to 2005, underwriting assumptions were more conservative regarding required debt service coverage and loan-to-value ratios. For the 2005 through 2008 vintages, real estate values peaked and the underwriting expectations were that values would continue to increase, which makes those loan values more sensitive to market declines. The 2009 and later vintages

represent a return to debt service coverage ratios and loan-to-value ratios that more closely resemble loans originated prior to 2005.

Similar to CMBS, we purchase ABS for diversification and to provide attractive returns. The primary risks in holding ABS are also structural and credit risks, which are similar to those noted above for CMBS. Our ABS portfolio is diversified by type of asset, issuer, and vintage. We actively monitor holdings of ABS to recognize adverse changes in the risk profile of each security. Prepayments in the ABS portfolio are, in general, insensitive to changes in interest rates or are insulated from such changes by call protection features. In the event we are subject to prepayment risk, we monitor the factors that impact the level of prepayment and prepayment speed for those ABS. In addition, we hold a diverse class of securities, which limits our exposure to any one security.

The international exposure held in our U.S. operation's fixed maturities portfolio was 20% of total fixed maturities as of both December 31, 2018 and December 31, 2017. It is comprised of corporate and foreign government fixed maturities. The following table presents the carrying amount of our international exposure for our U.S. operation's fixed maturities portfolio for the years indicated.

	December 31, 2018	December 31, 2017
	<i>(in millions)</i>	
European Union, excluding UK	\$ 3,276.6	\$ 3,119.1
United Kingdom	2,343.5	2,513.9
Asia-Pacific	1,634.3	1,550.7
Australia/New Zealand	1,477.0	1,511.2
Latin America	1,014.5	1,047.5
Europe, non-European Union	759.2	720.2
Middle East and Africa	552.1	455.2
Other (1)	317.9	283.6
Total	\$ 11,375.1	\$ 11,201.4

(1) Includes exposure from two countries and various supranational organizations as of both December 31, 2018, and December 31, 2017.

International fixed maturities exposure is determined by the country of domicile of the parent entity of an individual asset. All international fixed maturities held by our U.S. operations are either denominated in U.S. dollars or have been swapped into U.S. dollar equivalents. Our international investments are analyzed internally by country and industry credit investment professionals. We control concentrations using issuer and country level exposure benchmarks, which are based on the credit quality of the issuer and the country. Our investment policy limits total international fixed maturities investments and we are within those internal limits. Exposure to Canada is not included in our international exposure. As of December 31, 2018 and December 31, 2017, our investments in Canada totaled \$1,833.6 million and \$1,854.5 million, respectively.

Fixed Maturities Credit Concentrations. One aspect of managing credit risk is through industry, issuer and asset class diversification. Our credit concentrations are managed to established limits. The following table presents our top ten exposures as of December 31, 2018.

	Amortized cost
	<i>(in millions)</i>
People's Republic of China (1)	\$ 230.9
Mars, Incorporated	208.2
Berkshire Hathaway Inc.	200.1
Duke Energy Corporation	191.1
JPMorgan Chase & Co.	188.7
Wells Fargo & Company	180.9
Comcast Corporation	177.8
Morgan Stanley	177.4
Bank of America Corporation	171.3
Union Pacific Corporation	169.4
Total top ten exposures	\$ 1,895.8

(1) Primarily includes exposure to state-owned entities operating in the energy, electric and chemical sectors.

Fixed Maturities Valuation and Credit Quality. Valuation techniques for the fixed maturities portfolio vary by security type and the availability of market data. The use of different pricing techniques and their assumptions could produce different financial results. See Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements" for further details regarding our pricing methodology. Once prices are determined, they are reviewed by pricing analysts for reasonableness based on asset class and observable market data. Investment analysts who are familiar with specific securities review prices for reasonableness through direct interaction with external sources, review of recent trade activity or use of internal models. All fixed maturities placed on the "watch

list" are periodically analyzed by investment analysts. These analysts periodically meet with the Chief Investment Officer and the Portfolio Managers to determine reasonableness of the analysts' prices. The valuation of impaired bonds for which there is no quoted price is typically based on relative value analysis and the present value of the future cash flows expected to be received. Although we believe these values reasonably reflect the fair value of those securities, the key assumptions about risk premiums, performance of underlying collateral (if any) and other market factors involve qualitative and unobservable inputs.

The Securities Valuation Office ("SVO") of the NAIC monitors the bond investments of insurers for regulatory capital and reporting purposes and, when required, assigns securities to one of six categories referred to as NAIC designations. Although NAIC designations are not produced to aid the investment decision making process, NAIC designations may serve as a reasonable proxy for Nationally Recognized Statistical Rating Organizations' ("NRSRO") credit ratings for certain bonds. For most corporate bonds, NAIC designations 1 and 2 include bonds generally considered investment grade by such rating organizations. Bonds are considered investment grade when rated "Baa3" or higher by Moody's, or "BBB-" or higher by S&P. NAIC designations 3 through 6 include bonds generally referred to as below investment grade. Bonds are considered below investment grade when rated "Ba1" or lower by Moody's, or "BB+" or lower by S&P.

However, for loan-backed and structured securities, as defined by the NAIC, the NAIC designation is not always a reasonable indication of an NRSRO rating as described below. For CMBS and non-agency RMBS, Blackrock Solutions undertakes the modeling of those NAIC designations. Prior to December 31, 2018, other loan-backed and structured securities may have also been subject to an intrinsic price matrix as provided by the NAIC. This may result in a final designation being higher or lower than the NRSRO credit rating.

The following table presents our total fixed maturities by NAIC designation as of the years indicated as well as the percentage, based on fair value, that each designation comprises.

NAIC designation	December 31, 2018			December 31, 2017		
	Amortized cost	Carrying amount	Percent of carrying amount	Amortized cost	Carrying amount	Percent of carrying amount
	(\$ in millions)					
1	\$ 39,482.7	\$ 39,638.6	69%	\$ 36,314.6	\$ 37,769.0	67%
2	15,332.9	15,293.1	27	14,766.4	15,714.7	28
3	1,932.9	1,873.3	3	1,906.8	1,987.7	4
4	288.2	266.7	1	342.6	335.4	1
5	48.6	32.6	—	142.4	126.0	—
6	24.2	22.5	—	38.3	36.8	—
Total fixed maturities	\$ 57,109.5	\$ 57,126.8	100%	\$ 53,511.1	\$ 55,969.6	100%

Fixed maturities included 44 securities with an amortized cost of \$582.8 million, gross gains of \$7.0 million, gross losses of \$7.3 million and a carrying amount of \$582.5 million as of December 31, 2018, that were still pending a review and assignment of a designation by the SVO. Due to the timing of when fixed maturities are purchased, legal documents are filed and the review by the SVO is completed, we will always have securities in our portfolio that are unrated over a reporting period. In these instances, an equivalent designation is assigned based on our fixed income analyst's assessment.

Commercial Mortgage-Backed Securities. As of December 31, 2018, based on amortized cost, 99% of our CMBS portfolio had an NAIC designation of 1 and 95% was issued during the more conservative underwriting periods prior to 2005 and after 2008.

The following tables present our exposure by credit quality, based on NAIC designations, and vintage for our CMBS portfolio as of the years indicated.

NAIC designation	December 31, 2018							
	2004 and prior		2005 to 2008		2009 and after		Total	
	Amortized cost	Carrying amount	Amortized cost	Carrying amount	Amortized cost	Carrying amount	Amortized cost	Carrying amount
	(in millions)							
1	\$ 27.0	\$ 27.6	\$ 176.4	\$ 179.4	\$ 3,763.6	\$ 3,686.7	\$ 3,967.0	\$ 3,893.7
2	—	—	5.5	5.2	6.3	5.9	11.8	11.1
3	—	—	5.8	4.6	—	—	5.8	4.6
4	—	—	5.9	5.7	—	—	5.9	5.7
5	0.1	—	10.0	9.6	—	—	10.1	9.6
6	0.9	0.6	2.8	2.5	—	—	3.7	3.1
Total (1)	\$ 28.0	\$ 28.2	\$ 206.4	\$ 207.0	\$ 3,769.9	\$ 3,692.6	\$ 4,004.3	\$ 3,927.8

(1) The CMBS portfolio included agency CMBS with a \$279.6 million amortized cost and a \$272.6 million carrying amount.

NAIC designation	December 31, 2017							
	2004 and prior		2005 to 2008		2009 and after		Total	
	Amortized cost	Carrying amount	Amortized cost	Carrying amount	Amortized cost	Carrying amount	Amortized cost	Carrying amount
	(in millions)							
1	\$ 66.6	\$ 69.0	\$ 370.3	\$ 365.3	\$ 3,193.0	\$ 3,176.3	\$ 3,629.9	\$ 3,610.6
2	—	—	11.7	12.4	1.2	1.2	12.9	13.6
3	—	—	33.0	32.9	—	—	33.0	32.9
4	—	—	13.4	6.8	—	—	13.4	6.8
5	0.2	0.1	6.5	5.8	—	—	6.7	5.9
6	2.5	2.2	3.0	3.9	—	—	5.5	6.1
Total (1)	\$ 69.3	\$ 71.3	\$ 437.9	\$ 427.1	\$ 3,194.2	\$ 3,177.5	\$ 3,701.4	\$ 3,675.9

(1) The CMBS portfolio included agency CMBS with a \$357.6 million amortized cost and a \$355.2 million carrying amount.

Fixed Maturities Watch List. We monitor any decline in the credit quality of fixed maturities through the designation of "problem securities," "potential problem securities" and "restructured securities". We define problem securities in our fixed maturity portfolio as securities: (i) with principal and/or interest payments in default or where default is perceived to be imminent in the near term, or (ii) issued by a company that went into bankruptcy subsequent to the acquisition of such securities. We define potential problem securities in our fixed maturity portfolio as securities included on an internal "watch list" for which management has concerns as to the ability of the issuer to comply with the present debt payment terms and which may result in the security becoming a problem or being restructured. The decision whether to classify a performing fixed maturity security as a potential problem involves significant subjective judgments by our management as to the likely future industry conditions and developments with respect to the issuer. We define restructured securities in our fixed maturity portfolio as securities where a concession has been granted to the borrower related to the borrower's financial difficulties that would not have otherwise been considered. We determine that restructures should occur in those instances where greater economic value will be realized under the new terms than through liquidation or other disposition and may involve a change in contractual cash flows. If the present value of the restructured cash flows is less than the current cost of the asset being restructured, a realized capital loss is recorded in net income and a new cost basis is established.

The following table presents the total carrying amount of our fixed maturities portfolio, as well as its problem, potential problem and restructured fixed maturities for the years indicated.

	December 31, 2018	December 31, 2017
	(\$ in millions)	
Total fixed maturities (public and private)	\$ 57,126.8	\$ 55,969.6
Problem fixed maturities (1)	\$ 69.0	\$ 33.8
Potential problem fixed maturities	50.0	35.0
Restructured fixed maturities	2.5	4.8
Total problem, potential problem and restructured fixed maturities	\$ 121.5	\$ 73.6
Total problem, potential problem and restructured fixed maturities as a percent of total fixed maturities	0.21%	0.13%

(1) The problem fixed maturities carrying amount is net of other-than-temporary impairment losses.

Fixed Maturities Impairments. We have a process in place to identify securities that could potentially have a credit impairment that is other than temporary. This process involves monitoring market events that could impact issuers' credit ratings, business climate, management changes, litigation and government actions and other similar factors. This process also involves monitoring late payments, pricing levels, downgrades by rating agencies, key financial ratios, financial statements, revenue forecasts and cash flow projections as indicators of credit issues.

Each reporting period, a group of individuals including the Chief Investment Officer, our Portfolio Managers, the assigned analysts and representatives from Investment Accounting review all securities to determine whether an other-than-temporary decline in value exists and whether losses should be recognized. The analysis focuses on each issuer's ability to service its debts in a timely fashion. Formal documentation of the analysis and our decision is prepared and approved by management.

We consider relevant facts and circumstances in evaluating whether a credit or interest rate related impairment of a security is other than temporary. Relevant facts and circumstances considered include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in value; (3) the financial position and access to capital of the issuer, including the current and future impact of any specific events; (4) for structured securities, the adequacy of the expected cash flows; and (5) our intent to sell the security or whether it is more likely than not we will be required to sell the security before recovery of its amortized cost which, in some cases, may extend to maturity. To the extent we determine a security is deemed to be other than temporarily impaired, an impairment loss is recognized. For additional details, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments."

We would not consider a security with unrealized losses to be other than temporarily impaired when it is not our intent to sell the security, it is not more likely than not that we would be required to sell the security before recovery of the amortized cost, which may be at maturity, and we expect to recover the amortized cost basis. However, we do sell securities under certain circumstances, such as when we have evidence of a change in the issuer's creditworthiness, when we anticipate poor relative future performance of securities, when a change in regulatory requirements modifies what constitutes a permissible investment or the maximum level of investments held or when there is an increase in capital requirements or a change in risk weights of debt securities. Sales generate both gains and losses.

A number of significant risks and uncertainties are inherent in the process of monitoring credit impairments and determining if an impairment is other than temporary. These risks and uncertainties include: (1) the risk that our assessment of an issuer's ability to meet all of its contractual obligations will change based on changes in the credit characteristics of that issuer; (2) the risk that the economic outlook will be worse than expected or have more of an impact on the issuer than anticipated; (3) the risk that our investment professionals are making decisions based on fraudulent or misstated information in the financial statements provided by issuers and (4) the risk that new information obtained by us or changes in other facts and circumstances lead us to change our intent to not sell the security prior to recovery of its amortized cost. Any of these situations could result in a charge to net income in a future period.

The net realized loss relating to other-than-temporary credit impairments and credit related sales of fixed maturities was \$29.1 million, \$79.6 million, and \$95.1 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Fixed Maturities Available-for-Sale

The following tables present our fixed maturities available-for-sale by industry category and the associated gross unrealized gains and losses, including other-than-temporary impairment losses reported in AOCI, as of the years indicated.

	December 31, 2018			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Carrying amount
	(in millions)			
Finance — Banking	\$ 4,556.4	\$ 48.2	\$ 119.6	\$ 4,485.0
Finance — Brokerage	416.6	4.2	11.5	409.3
Finance — Finance Companies	342.5	2.7	9.0	336.2
Finance — Financial Other	415.5	15.2	9.2	421.5
Finance — Insurance	2,441.0	158.3	43.7	2,555.6
Finance — Real estate investment trusts ("REITs")	1,482.5	9.1	38.9	1,452.7
Industrial — Basic Industry	1,052.8	32.2	27.3	1,057.7
Industrial — Capital Goods	2,148.3	29.3	62.2	2,115.4
Industrial — Communications	2,567.7	137.4	46.1	2,659.0
Industrial — Consumer Cyclical	1,580.7	31.2	46.6	1,565.3
Industrial — Consumer Non-Cyclical	3,900.9	77.1	119.1	3,858.9
Industrial — Energy	2,377.9	115.9	55.8	2,438.0
Industrial — Other	424.2	5.2	8.7	420.7
Industrial — Technology	1,858.7	12.3	46.7	1,824.3
Industrial — Transportation	1,595.8	19.7	53.4	1,562.1
Utility — Electric	3,020.0	83.6	81.6	3,022.0
Utility — Natural Gas	476.7	14.1	16.4	474.4
Utility — Other	301.5	4.3	7.7	298.1
Government guaranteed	1,321.3	73.5	21.6	1,373.2
Total corporate securities	32,281.0	873.5	825.1	32,329.4
Residential mortgage-backed pass-through securities	2,481.3	21.5	49.8	2,453.0
Commercial mortgage-backed securities	3,990.5	17.1	93.6	3,914.0
Residential collateralized mortgage obligations	3,400.8	18.9	56.4	3,363.3
Asset-backed securities — Home equity (1)	264.5	12.0	2.9	273.6
Asset-backed securities — All other	3,551.5	8.4	23.4	3,536.5
Collateralized debt obligations — Credit	16.8	—	3.9	12.9
Collateralized debt obligations — CMBS	0.2	—	—	0.2
Collateralized debt obligations — Loans	2,434.3	—	26.6	2,407.7
Total mortgage-backed and other asset-backed securities	16,139.9	77.9	256.6	15,961.2
U.S. government and agencies	1,419.6	16.2	16.8	1,419.0
States and political subdivisions	6,110.7	195.9	95.0	6,211.6
Non-U.S. governments	683.5	61.2	13.9	730.8
Total fixed maturities, available-for-sale	<u>\$ 56,634.7</u>	<u>\$ 1,224.7</u>	<u>\$ 1,207.4</u>	<u>\$ 56,652.0</u>

(1) This exposure is all related to sub-prime mortgage loans.

	December 31, 2017			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Carrying amount
	(in millions)			
Finance — Banking	\$ 4,314.2	\$ 166.7	\$ 9.6	\$ 4,471.3
Finance — Brokerage	349.0	16.9	1.6	364.3
Finance — Finance Companies	309.7	7.6	0.2	317.1
Finance — Financial Other	509.0	29.7	4.8	533.9
Finance — Insurance	2,505.9	281.2	3.5	2,783.6
Finance — REITs	1,378.8	48.4	3.8	1,423.4
Industrial — Basic Industry	1,158.8	82.9	0.9	1,240.8
Industrial — Capital Goods	2,085.2	126.2	3.4	2,208.0
Industrial — Communications	2,359.8	238.1	3.0	2,594.9
Industrial — Consumer Cyclical	1,670.2	74.6	2.3	1,742.5
Industrial — Consumer Non-Cyclical	3,748.4	217.3	9.6	3,956.1
Industrial — Energy	2,532.5	241.6	11.8	2,762.3
Industrial — Other	450.8	15.4	0.6	465.6
Industrial — Technology	1,601.2	70.2	2.4	1,669.0
Industrial — Transportation	1,459.7	70.5	4.6	1,525.6
Utility — Electric	3,228.4	219.6	13.7	3,434.3
Utility — Natural Gas	482.5	26.8	1.1	508.2
Utility — Other	270.1	16.8	0.6	286.3
Government guaranteed	1,220.1	167.4	2.4	1,385.1
Total corporate securities	31,634.3	2,117.9	79.9	33,672.3
Residential mortgage-backed pass-through securities	2,483.7	50.3	21.3	2,512.7
Commercial mortgage-backed securities	3,700.7	32.4	57.9	3,675.2
Residential collateralized mortgage obligations	2,486.0	20.5	22.8	2,483.7
Asset-backed securities — Home equity (1)	202.4	15.7	4.1	214.0
Asset-backed securities — All other	3,007.8	5.7	13.6	2,999.9
Collateralized debt obligations — Credit	51.7	—	13.4	38.3
Collateralized debt obligations — CMBS	0.2	0.2	—	0.4
Collateralized debt obligations — Loans	1,320.2	2.5	2.1	1,320.6
Total mortgage-backed and other asset-backed securities	13,252.7	127.3	135.2	13,244.8
U.S. government and agencies	1,292.1	44.3	7.6	1,328.8
States and political subdivisions	6,438.3	371.4	15.9	6,793.8
Non-U.S. governments	492.1	37.3	1.1	528.3
Total fixed maturities, available-for-sale	<u>\$ 53,109.5</u>	<u>\$ 2,698.2</u>	<u>\$ 239.7</u>	<u>\$ 55,568.0</u>

(1) This exposure is all related to sub-prime mortgage loans.

Of the \$1,207.4 million in gross unrealized losses as of December 31, 2018, \$8.1 million in losses were attributed to securities scheduled to mature in one year or less, \$111.1 million attributed to securities scheduled to mature between one to five years, \$294.6 million attributed to securities scheduled to mature between five to ten years, \$537.0 million attributed to securities scheduled to mature after ten years and \$256.6 million related to mortgage-backed and other ABS that are not classified by maturity year. As of December 31, 2018, we were in a \$17.3 million net unrealized gain position as compared to a \$2,458.5 million net unrealized gain position as of December 31, 2017. The \$2,441.2 million decrease in net unrealized gains for the year ended December 31, 2018, can be attributed to widening of credit spreads and an approximate 31 basis points increase in interest rates.

Fixed Maturities Available-For-Sale Unrealized Losses. We believe our long-term fixed maturities portfolio is well diversified among industry types and between publicly traded and privately placed securities. Each year, we direct the majority of our net cash inflows into investment grade fixed maturities. Our current policy is to limit the percentage of cash flow invested in below investment grade assets to 10% of cash flow.

We invest in privately placed fixed maturities to enhance the overall value of the portfolio, increase diversification and obtain higher yields than are possible with comparable quality public market securities. Generally, private placements provide broader access to management information, strengthened negotiated protective covenants, call protection features and, where applicable, a higher level of collateral. They are, however, generally not freely tradable because of restrictions imposed by U.S. federal and state securities laws and illiquid trading markets.

The following table presents our fixed maturities available-for-sale by investment grade and below investment grade and the associated gross unrealized gains and losses, including the other-than-temporary impairment losses reported in AOCI, as of the years indicated.

	December 31, 2018				December 31, 2017			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Carrying amount	Amortized cost	Gross unrealized gains	Gross unrealized losses	Carrying amount
	<i>(in millions)</i>							
Investment grade:								
Public	\$ 35,064.8	\$ 938.0	\$ 729.4	\$ 35,273.4	\$ 34,596.8	\$ 1,998.4	\$ 132.4	\$ 36,462.8
Private	19,311.8	266.4	358.9	19,219.3	16,117.7	600.4	63.7	16,654.4
Below investment grade:								
Public	974.7	6.4	62.5	918.6	1,129.7	53.1	20.1	1,162.7
Private	1,283.4	13.9	56.6	1,240.7	1,265.3	46.3	23.5	1,288.1
Total fixed maturities, available-for-sale	<u>\$ 56,634.7</u>	<u>\$ 1,224.7</u>	<u>\$ 1,207.4</u>	<u>\$ 56,652.0</u>	<u>\$ 53,109.5</u>	<u>\$ 2,698.2</u>	<u>\$ 239.7</u>	<u>\$ 55,568.0</u>

The following tables present the carrying amount and the gross unrealized losses, including other-than-temporary impairment losses reported in AOCI, on investment grade fixed maturities available-for-sale by aging category as of the years indicated.

	December 31, 2018					
	Public		Private		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	<i>(in millions)</i>					
Three months or less	\$ 1,615.5	\$ 31.8	\$ 1,874.6	\$ 26.4	\$ 3,490.1	\$ 58.2
Greater than three to six months	2,507.5	56.7	1,767.5	26.8	4,275.0	83.5
Greater than six to nine months	2,727.4	100.6	2,081.4	45.9	4,808.8	146.5
Greater than nine to twelve months	7,077.1	271.1	3,641.4	116.3	10,718.5	387.4
Greater than twelve to twenty-four months	4,002.7	119.5	2,553.6	91.7	6,556.3	211.2
Greater than twenty-four to thirty-six months	2,241.1	134.7	859.6	42.2	3,100.7	176.9
Greater than thirty-six months	287.2	15.0	96.7	9.6	383.9	24.6
Total fixed maturities, available-for-sale	<u>\$ 20,458.5</u>	<u>\$ 729.4</u>	<u>\$ 12,874.8</u>	<u>\$ 358.9</u>	<u>\$ 33,333.3</u>	<u>\$ 1,088.3</u>

	December 31, 2017					
	Public		Private		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	<i>(in millions)</i>					
Three months or less	\$ 3,012.2	\$ 11.5	\$ 2,440.0	\$ 10.3	\$ 5,452.2	\$ 21.8
Greater than three to six months	2,201.7	21.7	1,203.9	13.2	3,405.6	34.9
Greater than six to nine months	148.8	1.7	174.5	5.3	323.3	7.0
Greater than nine to twelve months	36.2	0.6	34.2	2.5	70.4	3.1
Greater than twelve to twenty-four months	2,813.9	77.8	1,050.7	21.0	3,864.6	98.8
Greater than twenty-four to thirty-six months	241.5	7.4	61.9	2.0	303.4	9.4
Greater than thirty-six months	184.3	11.7	113.7	9.4	298.0	21.1
Total fixed maturities, available-for-sale	<u>\$ 8,638.6</u>	<u>\$ 132.4</u>	<u>\$ 5,078.9</u>	<u>\$ 63.7</u>	<u>\$ 13,717.5</u>	<u>\$ 196.1</u>

The following tables present the carrying amount and the gross unrealized losses, including other-than-temporary impairment losses reported in AOCI, on below investment grade fixed maturities available-for-sale by aging category as of the years indicated.

	December 31, 2018					
	Public		Private		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	<i>(in millions)</i>					
Three months or less	\$ 354.1	\$ 9.7	\$ 511.8	\$ 15.6	\$ 865.9	\$ 25.3
Greater than three to six months	73.4	3.7	93.8	6.3	167.2	10.0
Greater than six to nine months	76.1	6.8	148.2	7.6	224.3	14.4
Greater than nine to twelve months	146.6	15.0	227.9	14.1	374.5	29.1
Greater than twelve to twenty-four months	58.7	4.5	35.9	3.0	94.6	7.5
Greater than twenty-four to thirty-six months	6.4	2.3	4.3	0.2	10.7	2.5
Greater than thirty-six months	57.2	20.5	38.1	9.8	95.3	30.3
Total fixed maturities, available-for-sale	<u>\$ 772.5</u>	<u>\$ 62.5</u>	<u>\$ 1,060.0</u>	<u>\$ 56.6</u>	<u>\$ 1,832.5</u>	<u>\$ 119.1</u>

	December 31, 2017					
	Public		Private		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	<i>(in millions)</i>					
Three months or less	\$ 38.3	\$ 0.7	\$ 65.4	\$ 0.5	\$ 103.7	\$ 1.2
Greater than three to six months	—	—	11.1	0.3	11.1	0.3
Greater than six to nine months	1.5	5.7	46.3	1.9	47.8	7.6
Greater than nine to twelve months	1.1	0.1	—	—	1.1	0.1
Greater than twelve to twenty-four months	6.0	0.1	4.5	0.1	10.5	0.2
Greater than twenty-four to thirty-six months	28.4	4.3	23.5	3.9	51.9	8.2
Greater than thirty-six months	73.0	9.2	55.9	16.8	128.9	26.0
Total fixed maturities, available-for-sale	<u>\$ 148.3</u>	<u>\$ 20.1</u>	<u>\$ 206.7</u>	<u>\$ 23.5</u>	<u>\$ 355.0</u>	<u>\$ 43.6</u>

The following tables present the carrying amount and the gross unrealized losses, including other-than-temporary impairment losses reported in AOCI, on fixed maturities available-for-sale where the estimated fair value had declined and remained below amortized cost by 20% or more as of the years indicated.

	December 31, 2018					
	Problem, potential problem and restructured		All other fixed maturity securities		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	<i>(in millions)</i>					
Three months or less	\$ 10.4	\$ 5.7	\$ 66.6	\$ 20.8	\$ 77.0	\$ 26.5
Greater than three to six months	6.5	5.8	14.9	6.1	21.4	11.9
Greater than six to nine months	0.4	0.5	11.7	3.6	12.1	4.1
Greater than twelve months	9.2	6.5	5.3	2.7	14.5	9.2
Total fixed maturities, available-for-sale	<u>\$ 26.5</u>	<u>\$ 18.5</u>	<u>\$ 98.5</u>	<u>\$ 33.2</u>	<u>\$ 125.0</u>	<u>\$ 51.7</u>

	December 31, 2017					
	Problem, potential problem and restructured		All other fixed maturity securities		Total	
	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses	Carrying amount	Gross unrealized losses
	(in millions)					
Three months or less	\$ 0.5	\$ 1.0	\$ 25.4	\$ 16.8	\$ 25.9	\$ 17.8
Greater than three to six months	—	—	0.1	—	0.1	—
Greater than six to nine months	—	—	0.5	0.1	0.5	0.1
Greater than twelve months	18.7	12.7	24.2	11.1	42.9	23.8
Total fixed maturities, available-for-sale	\$ 19.2	\$ 13.7	\$ 50.2	\$ 28.0	\$ 69.4	\$ 41.7

Mortgage Loans

Mortgage loans consist of commercial mortgage loans on real estate and residential mortgage loans. The carrying amount of our commercial mortgage loan portfolio was \$13,721.2 million and \$12,700.8 million as of December 31, 2018 and December 31, 2017, respectively. The carrying amount of our residential mortgage loan portfolio was \$905.8 million and \$722.7 million as of December 31, 2018 and December 31, 2017, respectively.

Commercial Mortgage Loans. We generally report commercial mortgage loans on real estate at cost adjusted for amortization of premiums and accrual of discounts, computed using the interest method and net of valuation allowances.

Commercial mortgage loans play an important role in our investment strategy by:

- providing strong risk-adjusted relative value in comparison to other investment alternatives;
- enhancing total returns and
- providing strategic portfolio diversification.

As a result, we have focused on constructing a high quality portfolio of mortgages. Our portfolio is generally comprised of mortgages originated with conservative loan-to-value ratios, high debt service coverages and general purpose property types with a strong credit tenancy.

Our commercial mortgage loan portfolio consists primarily of non-recourse, fixed rate mortgages on fully or near fully leased properties. The mortgage portfolio is comprised primarily of office properties, apartments, well anchored retail properties and general-purpose industrial properties.

Our commercial mortgage loan portfolio is diversified by geography and specific collateral property type. Commercial mortgage lending in the state of California accounted for 21% and 18% of our commercial mortgage loan portfolio before valuation allowance as of December 31, 2018 and December 31, 2017, respectively. We are, therefore, exposed to potential losses resulting from the risk of catastrophes, such as earthquakes, that may affect the region. Like other lenders, we generally do not require earthquake insurance for properties on which we make commercial mortgage loans. With respect to California properties, however, we obtain an engineering report specific to each property. The report assesses the building's design specifications, whether it has been upgraded to meet seismic building codes and the maximum loss that is likely to result from a variety of different seismic events. We also obtain a report that assesses, by building and geographic fault lines, the amount of loss our commercial mortgage loan portfolio might suffer under a variety of seismic events.

The typical borrower in our commercial loan portfolio is a single purpose entity or single asset entity. As of December 31, 2018 and December 31, 2017, the total number of commercial mortgage loans outstanding was 795 and 813, of which 48% and 52% were for loans with principal balances less than \$10.0 million, respectively. The average loan size of our commercial mortgage portfolio was \$17.3 million and \$15.6 million as of December 31, 2018 and December 31, 2017, respectively.

Commercial Mortgage Loan Credit Monitoring. For further details on monitoring and management of our commercial mortgage loan portfolio, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Mortgage Loan Credit Monitoring."

We categorize loans that are 60 days or more delinquent, loans in process of foreclosure and loans with borrowers or credit tenants in bankruptcy that are delinquent as "problem" loans. Valuation allowances or charge-offs have been recognized on most problem loans. We categorize loans that are delinquent less than 60 days where the default is expected to be cured and loans with borrowers or credit tenants in bankruptcy that are current as "potential problem" loans. The decision whether to classify a loan delinquent less than 60 days as a potential problem involves significant subjective judgments by management as to the likely future economic conditions and developments with respect to the borrower. We categorize loans for which the original note rate has been reduced below market and loans for which the principal has been reduced as "restructured" loans. We also consider loans that are refinanced more than one year beyond the original maturity or call date at below market rates as restructured.

The following table presents the carrying amounts of problem, potential problem and restructured commercial mortgages relative to the carrying amount of all commercial mortgages for the years indicated.

	December 31, 2018	December 31, 2017
	(\$ in millions)	
Total commercial mortgages	\$ 13,721.2	\$ 12,700.8
Potential problem commercial mortgages	\$ 5.9	\$ —
Total problem, potential problem and restructured commercial mortgages	\$ 5.9	\$ —
Total problem, potential problem and restructured commercial mortgages as a percent of total commercial mortgages	0.04%	—%

Commercial Mortgage Loan Valuation Allowance. The valuation allowance for commercial mortgage loans includes loan specific reserves for loans that are deemed to be impaired as well as reserves for pools of loans with similar risk characteristics where a property risk or market specific risk has not been identified but for which we anticipate a loss may occur. For further details on the commercial mortgage loan valuation allowance, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 4, Investments" under the caption, "Mortgage Loan Valuation Allowance."

The following table represents our commercial mortgage loan valuation allowance for the years indicated.

	For the year ended December 31, 2018	For the year ended December 31, 2017
	(\$ in millions)	
Balance, beginning of period	\$ 25.8	\$ 27.4
Provision	(1.5)	(1.6)
Balance, end of period	\$ 24.3	\$ 25.8
Valuation allowance as % of carrying value before reserves	0.18%	0.20%

Residential Mortgage Loans. The residential mortgage loan portfolio is composed of first lien mortgages with an amortized cost of \$893.3 million and \$706.1 million and home equity mortgages with an amortized cost of \$15.1 million and \$23.0 million as of December 31, 2018 and December 31, 2017, respectively. The home equity loans are generally second lien mortgages made up of closed-end loans and lines of credit. Non-performing residential mortgage loans, which are defined as loans 90 days or greater delinquent plus non-accrual loans, totaled \$7.2 million and \$8.4 million as of December 31, 2018 and December 31, 2017, respectively.

We establish the residential mortgage loan valuation allowance at levels considered adequate to absorb estimated probable losses within the portfolio based on management's evaluation of the size and current risk characteristics of the portfolio. Such evaluation considers numerous factors, including, but not limited to net charge-off trends, loss forecasts, collateral values, geographic location, borrower credit scores, delinquency rates, industry condition and economic trends. The changes in the valuation allowance are reported in net realized capital gains (losses) on our consolidated statements of operations.

The following table represents our residential mortgage loan valuation allowance for the years indicated.

	For the year ended December 31, 2018	For the year ended December 31, 2017
	(\$ in millions)	
Balance, beginning of period	\$ 6.4	\$ 17.0
Provision	(4.5)	(10.5)
Charge-offs	(2.4)	(5.0)
Recoveries	3.1	4.9
Balance, end of period	\$ 2.6	\$ 6.4
Valuation allowance as % of carrying value before reserves	0.29%	0.88%

Real Estate

Real estate consists primarily of commercial equity real estate. As of December 31, 2018 and December 31, 2017, the carrying amount of our equity real estate investment was \$1,726.3 million and \$1,732.7 million, respectively. Our commercial equity real estate is held in the form of wholly owned real estate, real estate acquired upon foreclosure of commercial mortgage loans and majority owned interests in real estate joint ventures.

Equity real estate is categorized as either "real estate held for investment" or "real estate held for sale." Real estate held for investment totaled \$1,518.6 million and \$1,522.0 million as of December 31, 2018 and December 31, 2017, respectively. The carrying value of real estate held for investment is generally adjusted for impairments whenever events or changes in circumstances indicate the carrying amount of the asset may not be recoverable. Such impairment

adjustments are recorded as net realized capital losses in our consolidated results of operations. Impairment adjustments recorded for the year ended December 31, 2017, were \$1.1 million. No such impairment adjustments were recorded for the year ended December 31, 2018.

The carrying amount of real estate held for sale was \$207.7 million and \$210.7 million as of December 31, 2018 and December 31, 2017, respectively. Once we identify a real estate property to be sold and it is probable that it will be sold, we classify the property as held for sale. We establish a valuation allowance subject to periodic revisions, if necessary, to adjust the carrying value of the property to reflect the lower of its current carrying value or the fair value, less associated selling costs. The valuation allowance did not change for the year ended December 31, 2018 or for the year ended December 31, 2017.

We use research, both internal and external, to recommend appropriate product and geographic allocations and changes to the equity real estate portfolio. We monitor product, geographic and industry diversification separately and together to determine the most appropriate mix.

Equity real estate is distributed across geographic regions of the country. As of December 31, 2018, our largest equity real estate portfolio concentration was in the Pacific (43%) region of the United States. By property type, our largest concentrations were in apartments (32%), office (31%), and industrial (25%) as of December 31, 2018.

Other Investments

Our other investments totaled \$2,596.0 million as of December 31, 2018, compared to \$1,815.4 million as of December 31, 2017. Other investments include interests in unconsolidated entities, which include real estate properties owned jointly with venture partners and operated by the partners; sponsored investment funds; the cash surrender value of company owned life insurance; derivative assets and other investments.

International Investment Operations

Of our invested assets, \$7,492.1 million were held by our Principal International segment as of December 31, 2018. The assets are primarily managed by the local Principal International affiliate. Due to the regulatory constraints in each location, each company maintains its own investment policies. As shown in the following table, the major category of international invested assets is fixed maturities. The following table excludes invested assets of the separate accounts.

	December 31, 2018		December 31, 2017	
	Carrying amount	Percent of total	Carrying amount	Percent of total
	(\$ in millions)			
Fixed maturities:				
Public	\$ 3,569.2	48%	\$ 3,972.9	50%
Private	48.6	1	11.9	—
Equity securities	1,425.1	19	1,454.8	18
Mortgage loans:				
Commercial	250.8	3	170.7	2
Residential	459.1	6	556.3	7
Real estate held for sale	1.9	—	2.2	—
Real estate held for investment	1.5	—	1.8	—
Policy loans	21.6	—	24.9	—
Other investments:				
Direct financing leases	830.7	11	937.4	12
Investment in unconsolidated entities	864.5	12	763.8	10
Derivative assets and other investments	19.1	—	69.6	1
Total invested assets	<u>7,492.1</u>	<u>100%</u>	<u>7,966.3</u>	<u>100%</u>
Cash and cash equivalents	249.4		186.4	
Total invested assets and cash	<u>\$ 7,741.5</u>		<u>\$ 8,152.7</u>	

Regulations in certain locations require investment in the funds we manage. These required regulatory investments are classified as equity securities within our consolidated statements of financial position, with all mark-to-market changes reflected in net investment income. Our investment is primarily dictated by client activity and all investment performance is retained by us.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market Risk Exposures and Risk Management

Market risk is the risk we will incur losses due to adverse fluctuations in market rates and prices. Our primary market risk exposures are to interest rates, equity markets and foreign currency exchange rates. The active management of market risk is an integral part of our operations. We manage our overall market risk exposure within established risk tolerance ranges using several approaches, including:

- rebalancing our existing asset or liability portfolios;
- controlling the risk structure of newly acquired assets and liabilities and
- using derivative instruments to modify the market risk characteristics of existing assets or liabilities or assets expected to be purchased.

Interest Rate Risk

Interest rate risk is the risk of economic losses due to adverse changes in interest rates. Interest rate risk arises primarily from our holdings in interest sensitive assets and liabilities. Changes in interest rates impact numerous aspects of our operations, including but not limited to:

- yield on our invested assets;
- rate of interest we credit to contractholder account balances;
- timing of cash flows on assets and liabilities containing embedded prepayment options;
- cost of hedging our GMWB rider;
- discount rate used in valuing our pension and OPEB obligations;
- estimated gross profits and the amortization of our DAC asset and related actuarial balances;
- statutory reserve and capital requirements;
- asset-based fees earned on the fixed income assets we manage;
- interest expense on our long-term borrowings;
- fair value of intangible assets in our reporting units and
- fair value of financial assets and liabilities held at fair value on our consolidated statements of financial position.

Lower interest rates generally result in lower profitability in the long-term. Conversely, higher interest rates generally result in higher profitability in the long-term. However, an increase in market interest rates may cause a decline in the value of financial assets held at fair value on our consolidated statements of financial position.

Impact of Changes in Long-Term Interest Rate Assumptions

We use long-term interest rate assumptions to calculate reserves, DAC, other actuarial balances and benefit plan obligations in accordance with U.S. GAAP. In setting these assumptions, we consider a variety of factors, including historical experience, emerging trends and future expectations. We evaluate our assumptions on at least an annual basis. Due to the long-term nature of our assumptions, we generally do not revise our assumptions in response to short-term fluctuations in market interest rates. However, we will consider revising our assumptions if a significant change occurs in the factors noted above.

A reduction in our long-term interest rate assumptions may result in increases in our reserves and/or unlocking of our DAC asset and other actuarial balances. For additional information, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Deferred Acquisition Costs and Other Actuarial Balances."

In addition, we have implemented reinsurance transactions utilizing affiliated reinsurers and highly rated third parties to finance a portion of the statutory reserves for our term life insurance policies and universal life insurance policies with secondary guarantees. We calculate an economic reserve, which represents an estimate of our liability associated with these contracts. The excess of the required statutory reserve over the economic reserve is secured by financing provided by highly rated third parties. The long-term interest rate assumption is a key input in the calculation of the economic reserve. A reduction in our long-term interest rate assumption would reduce the portion of the statutory reserve that can be financed through affiliated reinsurers, thus increasing the amount of invested assets we must maintain to support statutory reserves. For additional information, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 15, Statutory Insurance Financial Information."

Impact of Changes in Interest Rates

Changes in interest rates or a sustained low interest rate environment may result in the following impacts, which would impact our financial position and results of operations:

Impact of Falling Interest Rates or Sustained Low Interest Rates	Impact of Rising Interest Rates
Adverse Impacts:	Positive Impacts:
A reduction in investment income, which may be partially offset by a reduction in the interest we credit on contractholder account balances; however, our ability to lower crediting rates may be constrained by guaranteed minimum interest rates and competitive pressures	An increase in investment income, which may be partially or fully offset by an increase in the interest we credit on contractholder account balances
An increase in the cost of hedging our GMWB rider	A decrease in the cost of hedging our GMWB rider
An increase in reserves and/or a true-up or unlocking of our DAC asset and other actuarial balances	A true-up or unlocking of our DAC asset and other actuarial balances
A reduction in the discount rate used in valuing our pension and OPEB obligations, leading to an increase in our Projected Benefit Obligation, Net Periodic Pension Cost, Accumulated Postretirement Benefit Obligation and Net Periodic Benefit Cost	An increase in the discount rate used in valuing our pension and OPEB obligations, leading to a decrease in our Projected Benefit Obligation, Net Periodic Pension Cost, Accumulated Postretirement Benefit Obligation and Net Periodic Benefit Cost
An increase in statutory capital we are required to hold as well as the amount of assets we must maintain to support statutory reserves	A decrease in statutory capital we are required to hold as well as the amount of assets we must maintain to support statutory reserves
An increase in prepayments or redemptions on mortgages and bonds we own, which would force us to reinvest the proceeds at lower interest rates	
Positive Impacts:	Adverse Impacts:
An increase in the value of the fixed income assets we manage, resulting in an increase in our fee revenue in the short-term	A decrease in the value of the fixed income assets we manage, resulting in a decrease in our fee revenue in the short-term
A decrease in the interest expense on our long-term borrowings, to the extent we are able to refinance our obligations at lower interest rates	An increase in the interest expense on our long-term borrowings, to the extent we refinance our obligations at higher interest rates
An increase in the fair value of certain financial assets held at fair value on our consolidated statements of financial position	A decrease in the fair value of certain financial assets held at fair value on our consolidated statements of financial position, as discussed below
	A reduction in the fair value of intangible assets in our reporting units, potentially leading to an impairment of goodwill or other intangible assets

We estimate a hypothetical 100 basis point immediate, parallel decrease in interest rates would reduce segment pre-tax operating earnings by less than 1% over the next 12 months excluding the impact of any potential unlocking of our DAC asset and other actuarial balances. This estimate reflects the impact of routine management actions in response to a drop in interest rates, such as reducing the interest rates we credit on contractholder account balances; however, it does not reflect the impact of other actions management may consider, such as curtailing sales of certain products. We anticipate the adverse segment pre-tax operating earnings impacts of a decrease in market interest rates will grow over time as assets mature and we are forced to reinvest at lower interest rates.

The selection of a 100 basis point immediate, parallel decrease in interest rates should not be construed as a prediction by us of future market events, but rather as an illustration of the impact of such an event. Our exposure will change as a result of ongoing portfolio transactions in response to new business, management's assessment of changing market conditions and changes in our mix of business.

If market rates increase rapidly, policy surrenders, withdrawals and requests for policy loans may increase as customers seek to achieve higher returns. This may result in unlocking of our DAC and other actuarial balances. We may be required to sell assets to raise the cash necessary to respond to such surrenders, withdrawals and loans, thereby realizing capital losses on the assets sold.

Guaranteed Minimum Interest Rate Exposure. The following table provides detail on the differences between the interest rates being credited to contractholders as of December 31, 2018, and the respective guaranteed minimum interest

rates ("GMIRs"). Account values are broken down by GMIR level within the Retirement and Income Solutions and U.S. Insurance Solutions segments.

	Account values (1)					Total
	At GMIR	Excess of crediting rates over GMIR:				
		Up to 0.50% above GMIR	0.51% to 1.00% above GMIR	1.01% to 2.00% above GMIR	2.01% or more above GMIR	
(\$ in millions)						
Guaranteed minimum interest rate						
Retirement and Income Solutions						
Up to 1.00%	\$ 362.5	\$ 340.7	\$ 6,172.6	\$ 3,019.5	\$ 2,321.3	\$ 12,216.6
1.01% - 2.00%	779.1	671.9	2.4	161.7	—	1,615.1
2.01% - 3.00%	5,303.7	—	—	0.4	—	5,304.1
3.01% - 4.00%	206.9	—	—	—	—	206.9
Subtotal	6,652.2	1,012.6	6,175.0	3,181.6	2,321.3	19,342.7
U.S. Insurance Solutions						
Up to 1.00%	—	21.7	4.4	—	—	26.1
1.01% - 2.00%	333.0	—	268.8	355.7	78.7	1,036.2
2.01% - 3.00%	1,857.4	780.1	484.0	103.2	—	3,224.7
3.01% - 4.00%	1,528.3	43.4	4.5	15.4	3.4	1,595.0
4.01% - 5.00%	243.0	27.2	16.6	10.8	—	297.6
Subtotal	3,961.7	872.4	778.3	485.1	82.1	6,179.6
Total	\$ 10,613.9	\$ 1,885.0	\$ 6,953.3	\$ 3,666.7	\$ 2,403.4	\$ 25,522.3
Percentage of total	41.6%	7.4%	27.2%	14.4%	9.4%	100.0%

(1) Includes only the account values, net of policy loans, for products with GMIRs and discretionary crediting rates.

In addition to the domestic account values shown in the table above, Principal International had \$636.8 million and \$513.4 million of account values with GMIRs in Hong Kong and Brazil, respectively, as of December 31, 2018. The Brazil amount includes account values from an equity method subsidiary, adjusted to reflect the proportion of the subsidiary's results reflected in our net income. Our liabilities in Principal International are generally denominated in the functional currency of the location of operation. The pattern of interest rate movements in our international operations will likely differ from the pattern of interest rate movements in the U.S.

Impact of Rising Interest Rates on the Fair Value of Financial Assets. An increase in market interest rates may cause a decline in the value of financial assets held at fair value on our consolidated statements of financial position. Although changes in the fair value of our financial assets due to changes in interest rates may impact the amount of equity reported in our consolidated statements of financial position, these changes will not cause an economic gain or loss unless we sell investments, terminate derivative positions, determine an investment is other than temporarily impaired, or determine a derivative instrument is no longer an effective hedge.

We estimate a hypothetical 100 basis point immediate, parallel increase in interest rates would reduce the net reported fair value of our financial assets and derivatives by \$3,893.7 million as of December 31, 2018, compared to \$3,831.5 million as of December 31, 2017. This estimate only reflects the change in fair value for financial assets and derivatives reported at fair value on our consolidated statements of financial position. Assets and liabilities not reported at fair value on our consolidated statements of financial position — including mortgage loans, liabilities relating to insurance contracts, investment contracts, debt and bank deposits — are excluded from this sensitivity analysis. We believe the excluded liability items would economically serve as a partial offset to the net interest rate risk of the financial instruments included in the sensitivity analysis. Separate account assets and liabilities are also excluded from this estimate, as any interest rate risk is borne by the holder of the separate account. For more information on fair value measurements, see Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 14, Fair Value Measurements."

Our selection of a 100 basis point immediate, parallel increase in interest rates is a hypothetical rate scenario we use to demonstrate potential risk. While a 100 basis point immediate, parallel increase does not represent our view of future market changes, it is a near term reasonably possible hypothetical change that illustrates the potential impact of such events. While this sensitivity analysis provides a representation of interest rate sensitivity, it is based on our portfolio exposures at a point in time and may not be representative of future market results. These exposures will change as a result of ongoing portfolio transactions in response to new business, management's assessment of changing market conditions and available investment opportunities.

Interest Rate Risk Management

We manage interest rate risk through the use of an integrated risk management framework. This helps us identify, assess, monitor, report and manage our risks within established limits and risk tolerances. Our internal risk committees monitor and discuss our risk profile and identify necessary actions to mitigate impacts from interest rate risk.

The product designs within our business units result in a variety of different interest rate risk profiles. Therefore, our business units use a variety of different approaches for managing their asset and liability interest rate risks.

- *Retirement Business Stable Cash Flows* — For stable and predictable cash flow liabilities, such as pension risk transfer, full service accumulation, investment only, and newer fixed deferred annuities, we use investment strategy and hedges to tightly align the cash flow run off of these asset and liability cash flows. Immunization and embedded value analysis are also utilized in the management of interest rate risk.
- *Retirement Business Dynamic Cash Flows* — Dynamic liability cash flows, such as older fixed deferred annuities, are sensitive to policyholder behavior and the current interest rate environment. The risk and return metrics from deterministic and stochastic interest rate scenarios are used to manage the interest rate risk for these liabilities.
- *U.S. Insurance Stable Cash Flows* — Our insurance businesses in many instances contain long-term guarantees with stable and predictable liability cash flows and recurring premiums. We manage the interest rate risk through investment strategy, product crediting rates and analyzing duration and embedded value sensitivity.
- *Principal International* — Our international businesses operate within local regulations and financial market conditions (e.g., derivative markets, assets available) to achieve similar asset and liability cash flow management objectives. In locations with a limited availability of long-dated assets and derivative markets, the duration gap is managed to risk tolerances specific to each location.

We also limit our exposure to interest rate risk through our business mix and strategy. We have intentionally limited our exposure to specific products where investment margins are critical to the product's profitability, and we continue to emphasize the sale of products that generate revenues in the form of fees for service or premiums for insurance coverage and expose us to minimal interest rate risk.

Prepayment risk is controlled by limiting our exposure to investments that are prepayable without penalty prior to maturity at the option of the issuer. We also require additional yield on these investments to compensate for the risk the issuer will exercise such option. Prepayment risk is also controlled by limiting the sales of liabilities with features such as puts or other options that can be exercised at inopportune times. We manage the interest rate risk associated with our long-term borrowings by monitoring the interest rate environment and evaluating refinancing opportunities as maturity dates approach.

The plan fiduciaries use a Dynamic Asset Allocation strategy for our qualified defined benefit pension plan, which strategically allocates an increasing portion of the assets of the pension plan to fixed income securities as the funding status improves. The intended purpose of using the Dynamic Asset Allocation strategy is that the expected change in the value of the plan assets and the change in pension benefit obligation due to market movements are more likely to have more correlation versus a static allocation of assets between categories. For more information see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Benefit Plans" and Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 11, Employee and Agent Benefits."

Use of Derivatives to Manage Interest Rate Risk. We use or have previously used various derivative financial instruments to manage our exposure to fluctuations in interest rates, including interest rate swaps, interest rate options, swaptions and futures. We use interest rate swaps and futures contracts to hedge changes in interest rates subsequent to the issuance of an insurance liability, such as a guaranteed investment contract, but prior to the purchase of a supporting asset, or during periods of holding assets in anticipation of near term liability sales. We use interest rate swaps primarily to more closely match the interest rate characteristics of assets and liabilities. They can be used to change the sensitivity to the interest rate of specific assets and liabilities as well as an entire portfolio. We use interest rate options to manage prepayment risks in our assets and minimum guaranteed interest rates and lapse risks in our liabilities. We have purchased swaptions to offset or modify existing exposures.

Foreign Currency Risk

Foreign currency risk is the risk we will incur economic losses due to adverse fluctuations in foreign currency exchange rates. This risk arises from foreign currency-denominated funding agreements issued to nonqualified institutional investors in the international market, foreign currency-denominated fixed maturity and equity securities, and our international operations, including expected cash flows and potential acquisition and divestiture activity.

We estimate as of December 31, 2018, a 10% immediate unfavorable change in each of the foreign currency exchange rates to which we are exposed would result in no material change to the net fair value of our foreign currency-denominated instruments identified above because we effectively hedge foreign currency-denominated instruments to minimize exchange rate impacts, which is consistent with our estimate as of December 31, 2017. However, fluctuations in

foreign currency exchange rates do affect the translation of segment pre-tax operating earnings and equity of our international operations into our consolidated financial statements.

For our Principal International segment, we estimate a 10% immediate unfavorable change in each of the foreign currency exchange rates to which we were exposed would have resulted in a \$313.9 million, or 10%, reduction in the total equity excluding noncontrolling interests of our international operations as of December 31, 2018, as compared to an estimated \$336.6 million, or 10%, reduction as of December 31, 2017. We estimate a 10% unfavorable change in the average foreign currency exchange rates to which we were exposed through our international operations would have resulted in a \$34.2 million, or 13%, reduction in segment pre-tax operating earnings of our international operations for the year ended December 31, 2018, as compared to an estimated \$41.1 million, or 12%, reduction for the year ended December 31, 2017.

The selection of a 10% immediate unfavorable change in all currency exchange rates should not be construed as a prediction by us of future market events, but rather as an illustration of the potential impact of such an event. These exposures will change as a result of a change in the size and mix of our foreign operations.

Use of Derivatives to Manage Foreign Currency Risk. The foreign currency risk on funding agreements and fixed maturities in our U.S. operations is mitigated by using currency swaps that swap the foreign currency interest and principal payments to our functional currency. The notional amount of our currency swap agreements associated with foreign-denominated liabilities was \$155.2 million and \$232.2 million as of December 31, 2018 and December 31, 2017, respectively. The notional amount of our currency swap agreements associated with foreign-denominated fixed maturities was \$542.5 million and \$455.6 million as of December 31, 2018 and December 31, 2017, respectively. The notional amount of our currency forwards hedging foreign-denominated equity securities was \$50.5 million and \$35.1 million as of December 31, 2018 and December 31, 2017, respectively.

With regard to our international operations, in order to enhance the diversification of our investment portfolios we may invest in bonds denominated in a currency that is different than the currency of our liabilities. We use foreign exchange derivatives to economically hedge the currency mismatch. Our Principal International operations had currency swaps with a notional amount of \$200.9 million and \$200.8 million as of December 31, 2018 and December 31, 2017, respectively. Our Principal International operations also utilized currency forwards with a notional amount of \$738.6 million and \$665.2 million as of December 31, 2018 and December 31, 2017, respectively.

We sometimes use derivatives to hedge currency risk associated with expected cash flows from our foreign operations. We held currency forwards with a notional amount of \$74.5 million and \$81.2 million as December 31, 2018 and December 31, 2017, respectively. We also utilized currency options with a notional amount of \$525.2 million and \$583.6 million as of December 31, 2018 and December 31, 2017, respectively.

We used currency forwards with a notional amount of \$134.0 million as of December 31, 2017, to manage the foreign currency risk associated with a business combination. No hedges of business combinations were outstanding as of December 31, 2018.

Equity Risk

Equity risk is the risk we will incur economic losses due to adverse fluctuations in common stock prices. As of December 31, 2018 and December 31, 2017, the fair value of our equity securities was \$1,843.7 million and \$1,866.6 million, respectively. We estimate a 10% decline in the prices of the equity securities would result in a decline in fair value of our equity securities of \$184.4 million as of December 31, 2018, as compared to a decline in fair value of our equity securities of \$186.7 million as of December 31, 2017.

We are also exposed to the risk that asset-based fees decrease as a result of declines in assets under management due to changes in investment prices and the risk that asset management fees calculated by reference to performance could be lower. The risk of decreased asset-based and asset management fees could also impact our estimates of total gross profits used as a basis for amortizing DAC and other actuarial balances. For further discussion, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Deferred Acquisition Costs and Other Actuarial Balances."

We also have equity risk associated with (1) fixed deferred annuity and universal life contracts that credit interest to customers based on changes in an external equity index; (2) variable annuity contracts that have a GMWB rider that allows the customer to make withdrawals of a specified annual amount, either for a fixed number of years or for the lifetime of the customer, even if the account value is reduced to zero; (3) variable annuity contracts that have a guaranteed minimum death benefit ("GMDB") that allows the death benefit to be paid, even if the account value has fallen below the GMDB amount and (4) investment contracts in which the return is subject to minimum contractual guarantees. We are also subject to equity risk based upon the assets that support our employee benefit plans. For further discussion of equity risk associated with these plans, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates — Benefit Plans."

We estimate an immediate 10% decline in the S&P 500 index, followed by a 2% per quarter increase would reduce our annual segment pre-tax operating earnings by approximately 4% to 6%. This estimate excludes the impact of any potential unlocking of our DAC asset and other actuarial balances. The selection of a 10% unfavorable change in the

S&P 500 index should not be construed as a prediction by us of future market events, but rather as an illustration of the potential impact of such an event. Our exposure will change as a result of changes in our mix of business.

Use of Derivatives to Manage Equity Risk. We economically hedge the fixed deferred annuity and universal life products, where the interest credited is linked to an external equity index, by purchasing options that match the product's profile or selling options to offset existing exposures. We economically hedged the GMWB exposure, which includes interest rate risk and equity risk, using futures, options and interest rate swaps with notional amounts of \$751.7 million, \$1,004.6 million, and \$3,492.8 million, respectively, as of December 31, 2018, and notional amounts of \$594.3 million, \$3,217.4 million, and \$3,893.7 million, respectively, as of December 31, 2017. The fair value of both the GMWB embedded derivative and associated hedging instruments are sensitive to financial market conditions and the variance related to the change in fair value of these items for a given period is largely dependent on market conditions at the end of the period.

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Principal Financial Group, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Principal Financial Group, Inc.'s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), (the COSO criteria). In our opinion, Principal Financial Group, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Company as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedules listed in the Index at Item 15(a) and our report dated February 13, 2019, expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Des Moines, Iowa
February 13, 2019

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Principal Financial Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Principal Financial Group, Inc. (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedules listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (**2013 framework**), and our report dated February 13, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1967.

Des Moines, Iowa
February 13, 2019

Principal Financial Group, Inc.

Consolidated Statements of Financial Position

	December 31, 2018	December 31, 2017
	<i>(in millions)</i>	
Assets		
Fixed maturities, available-for-sale (2018 and 2017 include \$94.5 million and \$268.0 million related to consolidated variable interest entities)	\$ 60,108.5	\$ 59,388.4
Fixed maturities, trading	636.1	566.0
Equity securities (2018 and 2017 include \$774.8 million and \$811.4 million related to consolidated variable interest entities)	1,843.7	1,866.6
Mortgage loans	15,336.9	14,150.5
Real estate (2018 and 2017 include \$364.0 million and \$370.3 million related to consolidated variable interest entities)	1,729.7	1,736.7
Policy loans	801.4	808.3
Other investments (2018 and 2017 include \$457.9 million and \$139.8 million related to consolidated variable interest entities and \$23.6 million and \$61.0 million measured at fair value under the fair value option)	4,310.3	3,586.2
Total investments	84,766.6	82,102.7
Cash and cash equivalents	2,977.5	2,470.8
Accrued investment income	636.2	610.6
Premiums due and other receivables	1,413.1	1,469.8
Deferred acquisition costs	3,693.5	3,540.7
Property and equipment	767.3	759.5
Goodwill	1,100.0	1,068.8
Other intangibles	1,315.1	1,314.7
Separate account assets (2018 and 2017 include \$37,183.3 million and \$41,540.8 million related to consolidated variable interest entities)	144,987.9	159,272.7
Other assets	1,378.9	1,330.9
Total assets	<u>\$ 243,036.1</u>	<u>\$ 253,941.2</u>
Liabilities		
Contractholder funds (2018 and 2017 include \$396.0 million and \$380.6 million related to consolidated variable interest entities)	\$ 39,699.7	\$ 38,082.5
Future policy benefits and claims	35,664.8	33,019.3
Other policyholder funds	888.4	922.3
Short-term debt	42.9	39.5
Long-term debt (2018 and 2017 include \$58.4 million and \$2.8 million related to consolidated variable interest entities)	3,259.6	3,178.4
Income taxes currently payable	25.3	16.7
Deferred income taxes	958.4	1,092.5
Separate account liabilities (2018 and 2017 include \$37,183.3 million and \$41,540.8 million related to consolidated variable interest entities)	144,987.9	159,272.7
Other liabilities (2018 and 2017 include \$104.9 million and \$270.2 million related to consolidated variable interest entities)	5,661.9	5,294.1
Total liabilities	231,188.9	240,918.0
Redeemable noncontrolling interest (2018 and 2017 include \$325.7 million and \$52.4 million related to consolidated variable interest entities)	391.2	101.3
Stockholders' equity		
Common stock, par value \$.01 per share — 2,500.0 million shares authorized, 476.7 million and 474.1 million shares issued, and 279.5 million and 289.0 million shares outstanding in 2018 and 2017	4.8	4.7
Additional paid-in capital	10,060.7	9,925.2
Retained earnings	10,290.2	9,482.9
Accumulated other comprehensive income (loss)	(1,565.1)	165.5
Treasury stock, at cost (197.2 million and 185.1 million shares in 2018 and 2017)	(7,400.6)	(6,729.0)
Total stockholders' equity attributable to Principal Financial Group, Inc.	11,390.0	12,849.3
Noncontrolling interest	66.0	72.6
Total stockholders' equity	11,456.0	12,921.9
Total liabilities and stockholders' equity	<u>\$ 243,036.1</u>	<u>\$ 253,941.2</u>

See accompanying notes.

Principal Financial Group, Inc.
Consolidated Statements of Operations

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions, except per share data)</i>		
Revenues			
Premiums and other considerations	\$ 6,409.6	\$ 6,217.4	\$ 5,299.1
Fees and other revenues	4,273.8	3,892.3	3,627.4
Net investment income	3,629.2	3,459.3	3,296.5
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	(46.3)	606.0	269.5
Net other-than-temporary impairment (losses) recoveries on available-for-sale securities	10.6	(28.7)	(98.8)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified to (from) other comprehensive income	(39.7)	(53.1)	0.4
Net impairment losses on available-for-sale securities	(29.1)	(81.8)	(98.4)
Net realized capital gains (losses)	(75.4)	524.2	171.1
Total revenues	14,237.2	14,093.2	12,394.1
Expenses			
Benefits, claims and settlement expenses	8,192.5	7,822.6	6,913.2
Dividends to policyholders	123.6	124.6	156.6
Operating expenses	4,136.7	3,893.8	3,732.6
Total expenses	12,452.8	11,841.0	10,802.4
Income before income taxes	1,784.4	2,252.2	1,591.7
Income taxes (benefits)	230.7	(72.3)	229.9
Net income	1,553.7	2,324.5	1,361.8
Net income attributable to noncontrolling interest	7.2	14.1	45.3
Net income attributable to Principal Financial Group, Inc.	1,546.5	2,310.4	1,316.5
Earnings per common share			
Basic earnings per common share	\$ 5.41	\$ 8.00	\$ 4.55
Diluted earnings per common share	\$ 5.36	\$ 7.88	\$ 4.50

See accompanying notes.

Principal Financial Group, Inc.**Consolidated Statements of Comprehensive Income**

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Net income	\$ 1,553.7	\$ 2,324.5	\$ 1,361.8
Other comprehensive income (loss), net:			
Net unrealized gains (losses) on available-for-sale securities	(1,529.6)	639.5	99.1
Noncredit component of impairment losses on fixed maturities, available-for-sale	26.4	31.2	(3.5)
Net unrealized gains (losses) on derivative instruments	16.0	(42.6)	15.5
Foreign currency translation adjustment	(287.6)	178.9	68.1
Net unrecognized postretirement benefit obligation	(60.9)	37.3	41.8
Other comprehensive income (loss)	(1,835.7)	844.3	221.0
Comprehensive income (loss)	(282.0)	3,168.8	1,582.8
Comprehensive income attributable to noncontrolling interest	2.7	17.7	49.7
Comprehensive income (loss) attributable to Principal Financial Group, Inc.	\$ (284.7)	\$ 3,151.1	\$ 1,533.1

See accompanying notes.

Principal Financial Group, Inc.

Consolidated Statements of Stockholders' Equity

	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Treasury stock	Noncontrolling interest	Total stockholders' equity
Balances as of January 1, 2016	\$ 4.7	\$ 9,544.8	\$ 6,875.9	\$ (882.5)	\$ (6,231.3)	\$ 65.8	\$ 9,377.4
Common stock issued	—	37.8	—	—	—	—	37.8
Stock-based compensation and additional related tax benefits	—	92.5	(7.1)	—	—	0.4	85.8
Treasury stock acquired, common	—	—	—	—	(277.3)	—	(277.3)
Dividends to common stockholders	—	—	(464.9)	—	—	—	(464.9)
Distributions to noncontrolling interest	—	—	—	—	—	(34.8)	(34.8)
Contributions from noncontrolling interest	—	—	—	—	—	5.5	5.5
Purchase of subsidiary shares from noncontrolling interest (1)	—	15.1	—	(9.3)	—	—	5.8
Adjustments to redemption amount of redeemable noncontrolling interest	—	(4.2)	—	—	—	—	(4.2)
Net income (1)	—	—	1,316.5	—	—	28.5	1,345.0
Other comprehensive income (1)	—	—	—	216.6	—	1.1	217.7
Balances as of December 31, 2016	4.7	9,686.0	7,720.4	(675.2)	(6,508.6)	66.5	10,293.8
Common stock issued	—	162.5	—	—	—	—	162.5
Stock-based compensation	—	90.2	(7.9)	—	—	0.4	82.7
Treasury stock acquired, common	—	—	—	—	(220.4)	—	(220.4)
Dividends to common stockholders	—	—	(540.0)	—	—	—	(540.0)
Distributions to noncontrolling interest	—	—	—	—	—	(8.4)	(8.4)
Contributions from noncontrolling interest	—	—	—	—	—	6.0	6.0
Purchase of subsidiary shares from noncontrolling interest (1)	—	(7.6)	—	—	—	(1.3)	(8.9)
Adjustments to redemption amount of redeemable noncontrolling interest	—	(5.9)	—	—	—	—	(5.9)
Net income (1)	—	—	2,310.4	—	—	7.1	2,317.5
Other comprehensive income (1)	—	—	—	840.7	—	2.3	843.0
Balances as of December 31, 2017	4.7	9,925.2	9,482.9	165.5	(6,729.0)	72.6	12,921.9
Common stock issued	0.1	63.9	—	—	—	—	64.0
Stock-based compensation	—	84.9	(7.7)	—	—	(0.4)	76.8
Treasury stock acquired, common	—	—	—	—	(671.6)	—	(671.6)
Dividends to common stockholders	—	—	(598.6)	—	—	—	(598.6)
Distributions to noncontrolling interest	—	—	—	—	—	(13.5)	(13.5)
Contributions from noncontrolling interest	—	—	—	—	—	3.3	3.3
Purchase of subsidiary shares from noncontrolling interest (1)	—	(20.6)	—	(1.6)	—	(1.8)	(24.0)
Adjustments to redemption amount of redeemable noncontrolling interest	—	7.3	—	—	—	(0.3)	7.0
Effects of implementation of accounting change related to equity investments, net	—	—	1.0	(1.0)	—	—	—
Effects of implementation of accounting change related to revenue recognition, net	—	—	(65.0)	25.6	—	(0.3)	(39.7)
Effects of implementation of accounting change related to intra-entity asset transfer taxes, net	—	—	8.7	—	—	—	8.7
Effects of implementation of accounting change related to the reclassification of certain tax effects, net	—	—	(77.6)	77.6	—	—	—
Net income (1)	—	—	1,546.5	—	—	9.3	1,555.8
Other comprehensive loss (1)	—	—	—	(1,831.2)	—	(2.9)	(1,834.1)
Balances as of December 31, 2018	\$ 4.8	\$ 10,060.7	\$ 10,290.2	\$ (1,565.1)	\$ (7,400.6)	\$ 66.0	\$ 11,456.0

(1) Excludes amounts attributable to redeemable noncontrolling interest. See Note 13, Stockholders' Equity, for further details.

See accompanying notes.

Principal Financial Group, Inc.

Consolidated Statements of Cash Flows

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Operating activities			
Net income	\$ 1,553.7	\$ 2,324.5	\$ 1,361.8
Adjustments to reconcile net income to net cash provided by operating activities:			
Net realized capital (gains) losses	75.4	(524.2)	(171.1)
Depreciation and amortization expense	205.1	195.7	186.6
Amortization of deferred acquisition costs and contract costs	277.3	234.6	285.1
Additions to deferred acquisition costs and contract costs	(443.4)	(421.8)	(402.3)
Stock-based compensation	77.4	82.7	84.4
Income from equity method investments, net of dividends received	(76.0)	(68.2)	(0.6)
Changes in:			
Accrued investment income	(28.7)	(30.0)	(35.0)
Net cash flows for trading securities and equity securities with operating intent	(133.7)	(332.2)	166.5
Premiums due and other receivables	37.8	(114.2)	98.7
Contractholder and policyholder liabilities and dividends	3,610.2	3,296.8	2,140.3
Current and deferred income taxes (benefits)	274.7	(164.4)	45.8
Real estate acquired through operating activities	(89.2)	(82.6)	(58.2)
Real estate sold through operating activities	133.6	1.4	229.0
Other assets and liabilities	(282.0)	(227.1)	(1.1)
Other	(35.7)	17.0	(72.1)
Net adjustments	3,602.8	1,863.5	2,496.0
Net cash provided by operating activities	5,156.5	4,188.0	3,857.8
Investing activities			
Fixed maturities available-for-sale and equity securities with intent to hold:			
Purchases	(13,909.8)	(13,371.6)	(13,763.8)
Sales	3,813.1	1,413.6	1,890.5
Maturities	6,217.6	8,743.2	7,742.8
Mortgage loans acquired or originated	(3,447.5)	(2,755.8)	(2,889.0)
Mortgage loans sold or repaid	2,228.4	1,872.0	2,068.7
Real estate acquired	(88.1)	(200.5)	(109.7)
Real estate sold	63.5	481.9	35.5
Net purchases of property and equipment	(92.3)	(164.8)	(154.9)
Purchase of interests in subsidiaries, net of cash acquired	(184.7)	—	—
Net change in other investments	(302.7)	(70.8)	26.0
Net cash used in investing activities	(5,702.5)	(4,052.8)	(5,153.9)
Financing activities			
Issuance of common stock	64.0	162.5	37.8
Acquisition of treasury stock	(671.6)	(220.4)	(277.3)
Proceeds from financing element derivatives	—	0.1	0.4
Payments for financing element derivatives	(65.9)	(77.6)	(87.7)
Excess tax benefits from share-based payment arrangements	—	—	12.0
Purchase of subsidiary shares from noncontrolling interest	(31.1)	(13.3)	(2.4)
Dividends to common stockholders	(598.6)	(540.0)	(464.9)
Issuance of long-term debt	80.8	2.8	656.1
Principal repayments of long-term debt	(1.3)	(56.5)	(799.3)
Net proceeds from (repayments of) short-term borrowings	8.5	(15.5)	(131.4)
Investment contract deposits	8,308.8	10,154.4	10,770.9
Investment contract withdrawals	(6,589.6)	(9,914.6)	(8,392.7)
Net increase in banking operation deposits	553.0	136.6	129.0
Other	(4.3)	(2.5)	0.4
Net cash provided by (used in) financing activities	1,052.7	(384.0)	1,450.9
Net increase (decrease) in cash and cash equivalents	506.7	(248.8)	154.8
Cash and cash equivalents at beginning of period	2,470.8	2,719.6	2,564.8
Cash and cash equivalents at end of period	\$ 2,977.5	\$ 2,470.8	\$ 2,719.6
Supplemental information:			
Cash paid for interest	\$ 150.2	\$ 148.6	\$ 162.0
Cash paid for income taxes	\$ 96.2	\$ 79.3	\$ 178.8
Supplemental disclosure of non-cash activities:			
Assets received in kind for pension risk transfer transactions	\$ —	\$ —	\$ 594.3
Assets and liability changes resulting from exchange agreement to exit real estate joint ventures:			
Real estate properties received	\$ —	\$ 743.2	\$ —
Long-term debt assumed on real estate properties received	\$ —	\$ 269.0	\$ —
Increase in other investments due to discontinuing equity method accounting	\$ —	\$ 222.4	\$ —

See accompanying notes.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements

December 31, 2018

1. Nature of Operations and Significant Accounting Policies

Description of Business

Principal Financial Group, Inc. ("PFG") is a leader in global investment management offering businesses, individuals and institutional clients a wide range of financial products and services, including retirement, asset management and insurance through our diverse family of financial services companies.

Basis of Presentation

The accompanying consolidated financial statements include the accounts of PFG and all other entities in which we directly or indirectly have a controlling financial interest as well as those variable interest entities ("VIEs") in which we are the primary beneficiary. The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("U.S. GAAP"). All significant intercompany accounts and transactions have been eliminated.

Consolidation

We have relationships with various special purpose entities and other legal entities that must be evaluated to determine if the entities meet the criteria of a VIE or a voting interest entity ("VOE"). This assessment is performed by reviewing contractual, ownership and other rights, including involvement of related parties, and requires use of judgment. First, we determine if we hold a variable interest in an entity by assessing if we have the right to receive expected losses and expected residual returns of the entity. If we hold a variable interest, then the entity is assessed to determine if it is a VIE. An entity is a VIE if the equity at risk is not sufficient to support its activities, if the equity holders lack a controlling financial interest or if the entity is structured with non-substantive voting rights. In addition to the previous criteria, if the entity is a limited partnership or similar entity, it is a VIE if the limited partners do not have the power to direct the entity's most significant activities through substantive kick-out rights or participating rights. A VIE is evaluated to determine the primary beneficiary. The primary beneficiary of a VIE is the enterprise with (1) the power to direct the activities of a VIE that most significantly impact the entity's economic performance and (2) the obligation to absorb losses of the entity or the right to receive benefits from the entity that could potentially be significant to the VIE. When we are the primary beneficiary, we are required to consolidate the entity in our financial statements. We reassess our involvement with VIEs on a quarterly basis. For further information about VIEs, refer to Note 3, Variable Interest Entities.

If an entity is not a VIE, it is considered a VOE. VOEs are generally consolidated if we own a greater than 50% voting interest. If we determine our involvement in an entity no longer meets the requirements for consolidation under either the VIE or VOE models, the entity is deconsolidated. Entities in which we have management influence over the operating and financing decisions but are not required to consolidate, other than investments accounted for at fair value under the fair value option, are reported using the equity method.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Recent Accounting Pronouncements

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
<i>Standards not yet adopted:</i>		
<p>Targeted improvements to the accounting for long-duration insurance contracts</p> <p>This authoritative guidance updates certain requirements in the accounting for long-duration insurance and annuity contracts.</p> <ol style="list-style-type: none"> The assumptions used to calculate the liability for future policy benefits on traditional and limited-payment contracts will be reviewed and updated periodically. Cash flow assumptions will be reviewed at least annually and updated when necessary with the impact recognized in net income. Discount rate assumptions are prescribed as the current upper-medium grade (low credit risk) fixed income instrument yield and will be updated quarterly with the impact recognized in other comprehensive income ("OCI"). Market risk benefits, which are certain market-based options or guarantees associated with deposit or account balance contracts, will be measured at fair value. The periodic change in fair value related to instrument-specific credit risk will be recognized in OCI while the remaining change in fair value will be recognized in net income. Deferred acquisition costs ("DAC") for all insurance and annuity contracts will be amortized on a constant basis over the expected term of the related contracts. Additional disclosures are required, including disaggregated rollforwards of significant insurance liabilities and other account balances and disclosures about significant inputs, judgments, assumptions and methods used in measurement. <p>The guidance for the liability for future policy benefits for traditional and limited-payment contracts and DAC will be applied on a modified retrospective basis; that is, to contracts in force as of the beginning of the earliest period presented based on their existing carrying amounts. An entity may elect to apply the changes retrospectively. The guidance for market risk benefits will be applied retrospectively. Early adoption is permitted.</p>	January 1, 2021	<p>Our implementation and evaluation process to date includes, but is not limited to, identifying and documenting contracts and contract features in scope of the guidance; identifying the actuarial models, systems and processes to be updated; and evaluating our systems solutions for implementing the new guidance. As we progress through our implementation, we will be able to better assess the impact to our consolidated financial statements; however, we expect this guidance to significantly change how we account for many of our insurance and annuity products.</p>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
<p>Goodwill impairment testing This authoritative guidance simplifies how an entity is required to test goodwill for impairment by eliminating Step 2 (which measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill to the carrying amount of that goodwill) from the goodwill impairment test. A goodwill impairment loss will be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. Entities will continue to have the option to perform a qualitative assessment to determine if a quantitative impairment test is necessary. Early adoption is permitted.</p>	January 1, 2020	We are currently evaluating the impact this guidance will have on our consolidated financial statements, but do not expect it to have a material impact on our consolidated financial statements. We expect the guidance will reduce complexity and costs associated with performing a Step 2 test, should one be needed in the future. However, the impact on the outcome of any such future impairment assessment will be dependent on modeling factors that are not currently determinable.
<p>Credit losses This authoritative guidance requires entities to use a current expected credit loss ("CECL") model to measure impairment for most financial assets that are not recorded at fair value through net income. Under the CECL model, an entity will estimate lifetime expected credit losses considering available relevant information about historical events, current conditions and reasonable and supportable forecasts. The CECL model does not apply to available-for-sale debt securities. This guidance also expands the required credit loss disclosures and will be applied using a modified retrospective approach by recording a cumulative effect adjustment to retained earnings as of the beginning of the fiscal year of adoption. Early adoption is permitted.</p>	January 1, 2020	Our implementation and evaluation process to date includes, but is not limited to, identifying financial assets within scope of the guidance and developing CECL models for the relevant assets. We believe estimated credit losses under the CECL model will generally result in earlier loss recognition for loans and other receivables.
<p>Leases This authoritative guidance requires lessee recognition of lease assets and lease liabilities on the balance sheet. The concept of an operating lease, where the lease assets and liabilities are off balance sheet, is eliminated under the new guidance. For lessors, the guidance modifies lease classification criteria and accounting for certain types of leases. Other key aspects of the guidance relate to the removal of the current real estate-specific guidance and new presentation and disclosure requirements. Lessees and lessors are required to recognize and measure leases using a modified retrospective approach, which includes certain optional practical expedients that may be elected. We elected the alternative transition method, which allows entities to initially apply the new standard at the adoption date and recognize a cumulative effect adjustment to the opening balance of retained earnings in the period of adoption.</p>	January 1, 2019	<p>Our evaluation process includes, but is not limited to, identifying leases that are within the scope of the guidance, reviewing and documenting our accounting for these contracts, implementing system and process changes and determining disclosure impacts.</p> <p>The guidance requires us to establish a lease asset and liability for our operating leases. The guidance will be applied at the beginning of the period of adoption and comparative periods will not be restated. Assets and liabilities will increase approximately \$165.0 million and \$161.0 million, respectively, due to the adoption of this guidance. The impact to total stockholders' equity will not be material.</p>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
<p>Implementation costs in a cloud computing arrangement that is a service contract This authoritative guidance aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This guidance can be applied either retrospectively or prospectively and early adoption is permitted.</p>	January 1, 2019	The effective date of the guidance is January 1, 2020; however, we have elected to early-adopt this guidance on a prospective basis, effective January 1, 2019. This guidance will not have a material impact on our consolidated financial statements.
<p>Targeted improvements to accounting for hedging activities This authoritative guidance updates certain recognition and measurement requirements for hedge accounting. The objective of the guidance is to more closely align the economics of a company's risk management activities in its financial results and reduce the complexity of applying hedge accounting. The updates include the expansion of hedging strategies that are eligible for hedge accounting, elimination of the separate measurement and reporting of hedge ineffectiveness, presentation of the changes in the fair value of the hedging instrument in the same consolidated statement of operations line as the earnings effect of the hedged item and simplification of hedge effectiveness assessments. This guidance also includes new disclosures and will be applied using a modified retrospective approach by recording a cumulative effect adjustment to retained earnings as of the beginning of the fiscal year of adoption.</p>	January 1, 2019	This guidance will not have a material impact on our consolidated financial statements.
<p>Premium amortization on purchased callable debt securities This authoritative guidance applies to entities that hold certain non-contingently callable debt securities, where the amortized cost basis is at a premium to the price repayable by the issuer at the earliest call date. Under the guidance the premium will be amortized to the first call date. This guidance requires adoption through a cumulative effect adjustment to retained earnings as of the beginning of the fiscal year of adoption.</p>	January 1, 2019	This guidance will not have a material impact on our consolidated financial statements.
<p>Nonemployee share-based payment accounting This authoritative guidance simplifies the accounting for share-based payments to nonemployees by generally aligning it with the accounting for share-based payments to employees. Under the guidance, the measurement of equity-classified nonemployee awards will be fixed at the grant date, where today the measurement is fixed at performance completion date. The guidance will be applied to equity-classified nonemployee awards for which a measurement date has not been established as of the date of adoption.</p>	January 1, 2019	This guidance will not have a material impact on our consolidated financial statements.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
<i>Standards adopted:</i>		
<p>Reclassification of certain tax effects from accumulated other comprehensive income This authoritative guidance permits a reclassification from accumulated other comprehensive income ("AOCI") to retained earnings for the stranded tax effects resulting from U.S. tax legislation enacted on December 22, 2017, which is referred to as the "Tax Cuts and Jobs Act" ("U.S. tax reform"). The amount of that reclassification includes the change in corporate income tax rate, as well as an election to include other income tax effects related to the application of U.S. tax reform. The guidance also requires disclosures about stranded tax effects.</p>	January 1, 2018	The effective date of the guidance was January 1, 2019; however, we elected to early adopt the guidance. The guidance was applied at the beginning of the period of adoption and comparative periods were not restated. We reclassified the stranded tax effects in AOCI resulting from U.S. tax reform, which includes the change in corporate income tax rate and an election to reclassify the tax effects of the one-time deemed repatriation tax. A reclassification of \$77.6 million was recorded as an increase to AOCI and a decrease to retained earnings.
<p>Revenue recognition This authoritative guidance replaces all general and most industry specific revenue recognition guidance currently prescribed by U.S. GAAP. The core principle is that an entity recognizes revenue to reflect the transfer of a promised good or service to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for that good or service. This guidance also provides clarification on when an entity is a principal or an agent in a transaction. In addition, the guidance updates the accounting for certain costs associated with obtaining and fulfilling a customer contract. The guidance may be applied using one of the following two methods: (1) retrospectively to each prior reporting period presented, or (2) retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.</p>	January 1, 2018	We adopted the guidance using the modified retrospective approach. The guidance did not have a material impact on our consolidated financial statements. Further details are included under the caption "Adoption of Revenue Recognition Guidance" and in Note 17, Revenues from Contracts with Customers.
<p>Income tax — intra-entity transfers of assets This authoritative guidance requires entities to recognize current and deferred income tax resulting from an intra-entity asset transfer when the transfer occurs. Prior to issuance of this guidance, U.S. GAAP did not allow recognition of income tax consequences until the asset had been sold to a third party. This guidance requires adoption through a cumulative effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption.</p>	January 1, 2018	We adopted the guidance using the modified retrospective approach. A cumulative effect adjustment of \$8.7 million was recorded as an increase to retained earnings. In addition, other assets and deferred income taxes decreased \$21.1 million and \$29.8 million, respectively, due to the adoption of this guidance.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
<p>Financial instruments — recognition and measurement This authoritative guidance addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The guidance eliminated the classification of equity securities into different categories (trading or available-for-sale) and requires equity investments to be measured at fair value with changes in the fair value recognized through net income. The guidance also updated certain financial instrument disclosures and eliminated the requirement to disclose the methods and significant assumptions used to estimate the fair value of financial instruments that are measured at amortized cost on the balance sheet.</p>	January 1, 2018	We adopted this guidance using the modified retrospective approach. A cumulative effect adjustment of \$1.0 million was recorded as a decrease to AOCI and a corresponding increase to retained earnings. The guidance did not have a material impact on our consolidated financial statements. As of December 31, 2017, we had \$96.0 million of equity securities classified as available-for-sale and \$1,770.6 million classified as trading. The consolidated statements of financial position have been updated to eliminate these classifications and present only equity securities. See Note 4, Investments, for further details.
<p>Nonfinancial asset derecognition and partial sales of nonfinancial assets This authoritative guidance clarifies the scope of the recently established guidance on nonfinancial asset derecognition and the accounting for partial sales of nonfinancial assets. The guidance conforms the derecognition guidance on nonfinancial assets with the model for transactions in the new revenue recognition standard.</p>	January 1, 2018	The guidance did not have a material impact on our consolidated financial statements.
<p>Presentation of net periodic pension cost and net periodic postretirement benefit cost This authoritative guidance requires that an employer disaggregate the service cost component from the other components of net benefit cost. The guidance also provides explicit guidance on the presentation of the service cost component and the other components of net benefit cost in the consolidated statement of operations and allows only the service cost component of net benefit cost to be eligible for capitalization.</p>	January 1, 2018	The guidance did not have a material impact on our consolidated financial statements.
<p>Definition of a business This authoritative guidance clarifies the definition of a business to assist with evaluating when transactions involving an integrated set of assets and activities (a "set") should be accounted for as acquisitions or disposals of assets or businesses. The guidance requires that when substantially all of the fair value of the gross assets acquired or disposed of is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. The guidance also requires a set to include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output to be considered a business. Lastly, the guidance removes the evaluation of whether a market participant could replace missing elements and narrows the definition of outputs by more closely aligning it with how outputs are described in the revenue recognition guidance. The guidance will be applied prospectively.</p>	January 1, 2018	The guidance did not have a material impact on our consolidated financial statements.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

Description	Date of adoption	Effect on our consolidated financial statements or other significant matters
Employee share-based payment accounting This authoritative guidance changes certain aspects of accounting for and reporting share-based payments to employees including changes related to the income tax effects of share-based payments, tax withholding requirements and accounting for forfeitures. Various transition methods will apply depending on the situation being addressed.	January 1, 2017	The guidance was adopted prospectively as indicated by the guidance for each area of change and did not have a material impact on our consolidated financial statements.
Short-duration insurance contracts This authoritative guidance requires additional disclosures related to short-duration insurance contracts.	December 31, 2016	The disclosure requirements of this guidance were adopted retrospectively. See Note 8, Insurance Liabilities, for further details.
Net asset value per share as a practical expedient for fair value This authoritative guidance removes the requirement to categorize within the fair value hierarchy all investments for which fair value is measured using the net asset value per share practical expedient.	January 1, 2016	The guidance was adopted retrospectively and did not have a material impact on our consolidated financial statements. See Note 14, Fair Value Measurements, for further details.
Simplifying the presentation of debt issuance costs This authoritative guidance requires debt issuance costs related to a recognized debt liability to be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts.	January 1, 2016	The guidance was adopted retrospectively and did not have a material impact on our consolidated financial statements.
Consolidations This authoritative guidance makes changes to both the variable interest and voting interest consolidation models and eliminates the investment company deferral for portions of the variable interest model. The amendments in the standard impact the consolidation analysis for interests in investment companies and limited partnerships and similar entities.	January 1, 2016	The guidance was adopted using the modified retrospective approach. See Note 3, Variable Interest Entities, for further details.

When we adopt new accounting standards, we have a process in place to perform a thorough review of the pronouncement, identify the financial statement and system impacts and create an implementation plan among our impacted business units to ensure we are compliant with the pronouncement on the date of adoption. This includes having effective processes and controls in place to support the reported amounts. Each of the standards listed above is in varying stages in our implementation process based on its issuance and adoption dates. We are on track to implement guidance by the respective effective dates.

Adoption of Revenue Recognition Guidance

On January 1, 2018, we adopted the guidance using the modified retrospective approach. A cumulative effect adjustment of \$39.7 million was recorded as a decrease to total stockholders' equity. The impact of the guidance to our consolidated financial statements primarily relates to a change to the amortization pattern, or a write-off, of existing capitalized costs transferred from DAC to a contract cost asset, where authoritative guidance was superseded. This was offset in part by deferring certain sales compensation related to obtaining customer contracts that was not previously capitalized.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Results of reporting periods beginning January 1, 2018, are presented under the new guidance, while prior period amounts are not adjusted and continue to be reported in accordance with our legacy accounting. The guidance did not have a material impact on our consolidated statements of operations and did not impact earnings per common share. The impacts to the consolidated statements of financial position were as follows:

Consolidated Statements of Financial Position

	December 31, 2018		
	As reported	As adjusted (1)	Impact of adopting revenue recognition accounting guidance
	<i>(in millions)</i>		
Assets			
Deferred acquisition costs (2)	\$ 3,693.5	\$ 3,887.2	\$ (193.7)
Other assets (3)	1,378.9	1,241.3	137.6
Liabilities			
Deferred income taxes	958.4	979.2	(20.8)
Stockholders' equity			
Total stockholders' equity	11,456.0	11,491.3	(35.3)

(1) Excludes the impact of adopting revenue recognition accounting guidance.

(2) Certain costs to obtain a contract previously recorded as DAC are now recorded as a contract cost asset or are no longer deferrable under revenue recognition guidance.

(3) Includes the contract cost asset.

Use of Estimates in the Preparation of Financial Statements

The preparation of our consolidated financial statements and accompanying notes requires management to make estimates and assumptions that affect the amounts reported and disclosed. These estimates and assumptions could change in the future as more information becomes known, which could impact the amounts reported and disclosed in the consolidated financial statements and accompanying notes. The most critical estimates include those used in determining:

- the fair value of investments in the absence of quoted market values;
- investment impairments and valuation allowances;
- the fair value of and accounting for derivatives;
- the DAC and other actuarial balances where the amortization is based on estimated gross profits;
- the measurement of goodwill, indefinite lived intangible assets, finite lived intangible assets and related impairments or amortization, if any;
- the liability for future policy benefits and claims;
- the value of our pension and other postretirement benefit obligations and
- accounting for income taxes and the valuation of deferred tax assets.

A description of such critical estimates is incorporated within the discussion of the related accounting policies that follow. In applying these policies, management makes subjective and complex judgments that frequently require estimates about matters that are inherently uncertain. Actual results could differ from these estimates.

Closed Block

Principal Life Insurance Company ("Principal Life") operates a closed block ("Closed Block") for the benefit of individual participating dividend-paying policies in force at the time of the 1998 mutual insurance holding company ("MIHC") formation. See Note 6, Closed Block, for further details.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)****Cash and Cash Equivalents**

Cash and cash equivalents include cash on hand, money market instruments and other debt issues with a maturity date of three months or less when purchased.

Investments

Fixed maturities include bonds, asset-backed securities ("ABS"), redeemable preferred stock and certain non-redeemable preferred securities. Equity securities include mutual funds, common stock, non-redeemable preferred stock and required regulatory investments. We classify fixed maturities as either available-for-sale or trading at the time of the purchase and, accordingly, carry them at fair value. Equity securities are also carried at fair value. See Note 14, Fair Value Measurements, for methodologies related to the determination of fair value. Unrealized gains and losses related to fixed maturities, available-for-sale, excluding those in fair value hedging relationships, are reflected in stockholders' equity, net of adjustments associated with DAC and related actuarial balances, derivatives in cash flow hedge relationships and applicable income taxes. Mark-to-market adjustments on equity securities, unrealized gains and losses related to hedged portions of fixed maturities, available-for-sale in fair value hedging relationships and mark-to-market adjustments on certain fixed maturities, trading are reflected in net realized capital gains (losses). Mark-to-market adjustments related to certain securities carried at fair value with an investment objective to realize economic value through mark-to-market changes are reflected in net investment income.

The cost of fixed maturities is adjusted for amortization of premiums and accrual of discounts, both computed using the interest method. The cost of fixed maturities classified as available-for-sale is adjusted for declines in value that are other than temporary. Impairments in value deemed to be other than temporary are primarily reported in net income as a component of net realized capital gains (losses), with noncredit impairment losses for certain fixed maturities, available-for-sale reported in OCI. Interest income, as well as prepayment fees and the amortization of the related premium or discount, is reported in net investment income. For loan-backed and structured securities, we recognize income using a constant effective yield based on currently anticipated cash flows.

Real estate investments are reported at cost less accumulated depreciation. The initial cost bases of properties acquired through loan foreclosures are the lower of the fair market values of the properties at the time of foreclosure or the outstanding loan balance. Buildings and land improvements are generally depreciated on the straight-line method over the estimated useful life of improvements and tenant improvement costs are depreciated on the straight-line method over the term of the related lease. We recognize impairment losses for properties when indicators of impairment are present and a property's expected undiscounted cash flows are not sufficient to recover the property's carrying value. In such cases, the cost basis of the property is reduced to fair value. Real estate expected to be disposed is carried at the lower of cost or fair value, less cost to sell, with valuation allowances established accordingly and depreciation no longer recognized. The carrying amount of real estate held for sale was \$209.6 million and \$212.9 million as of December 31, 2018 and 2017, respectively. Any impairment losses and any changes in valuation allowances are reported in net income.

Commercial and residential mortgage loans are generally reported at cost adjusted for amortization of premiums and accrual of discounts, computed using the interest method and net of valuation allowances. Interest income is accrued on the principal amount of the loan based on the loan's contractual interest rate. Interest income, as well as prepayment of fees and the amortization of the related premium or discount, is reported in net investment income. Any changes in the valuation allowances are reported in net realized capital gains (losses). We measure impairment based upon the difference between carrying value and estimated value less cost to sell. Estimated value is based on either the present value of expected cash flows discounted at the loan's effective interest rate, the loan's observable market price or the fair value of the collateral. If foreclosure is probable, the measurement of any valuation allowance is based upon the fair value of the collateral.

Net realized capital gains and losses on sales of investments are determined on the basis of specific identification. In general, in addition to realized capital gains and losses on investment sales and periodic settlements on derivatives not designated as hedges, we report gains and losses related to the following in net realized capital gains (losses): other-than-temporary impairments of securities and subsequent realized recoveries, mark-to-market adjustments on equity securities, mark-to-market adjustments on certain fixed maturities, trading, mark-to-market adjustments on sponsored investment funds, fair value hedge and cash flow hedge ineffectiveness, mark-to-market adjustments on derivatives not designated as hedges, changes in the mortgage loan valuation allowance provision, impairments of real estate held for investment and impairments of equity method investments. Investment gains and losses on sales of certain real estate held for sale due to investment strategy and mark-to-market adjustments on certain securities carried at fair value with an investment objective to realize economic value through mark-to-market changes are reported as net investment income and are excluded from net realized capital gains (losses).

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

Policy loans and certain other investments are reported at cost. Interests in unconsolidated entities, joint ventures and partnerships are generally accounted for using the equity method. We have other investments reported at fair value or for which the fair value option has been elected in prior periods. See Note 14, Fair Value Measurements, for detail on these investments.

Derivatives**Overview**

Derivatives are financial instruments whose values are derived from interest rates, foreign exchange rates, financial indices or the values of securities. Derivatives generally used by us include swaps, options, futures and forwards. Derivative positions are either assets or liabilities in the consolidated statements of financial position and are measured at fair value, generally by obtaining quoted market prices or through the use of pricing models. See Note 14, Fair Value Measurements, for policies related to the determination of fair value. Fair values can be affected by changes in interest rates, foreign exchange rates, financial indices, values of securities, credit spreads, and market volatility and liquidity.

Accounting and Financial Statement Presentation

We designate derivatives as either:

- (a) a hedge of the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment, including those denominated in a foreign currency ("fair value hedge");
- (b) a hedge of a forecasted transaction or the exposure to variability of cash flows to be received or paid related to a recognized asset or liability, including those denominated in a foreign currency ("cash flow hedge");
- (c) a hedge of a net investment in a foreign operation or
- (d) a derivative not designated as a hedging instrument.

Our accounting for the ongoing changes in fair value of a derivative depends on the intended use of the derivative and the designation, as described above, and is determined when the derivative contract is entered into or at the time of redesignation. Hedge accounting is used for derivatives that are specifically designated in advance as hedges and that reduce our exposure to an indicated risk by having a high correlation between changes in the value of the derivatives and the items being hedged at both the inception of the hedge and throughout the hedge period.

Fair Value Hedges. When a derivative is designated as a fair value hedge and is determined to be highly effective, changes in its fair value, along with changes in the fair value of the hedged asset, liability or firm commitment attributable to the hedged risk, are reported in net realized capital gains (losses). Any difference between the net change in fair value of the derivative and the hedged item represents hedge ineffectiveness.

Cash Flow Hedges. When a derivative is designated as a cash flow hedge and is determined to be highly effective, changes in its fair value are recorded as a component of OCI. Any hedge ineffectiveness is recorded immediately in net income. At the time the variability of cash flows being hedged impacts net income, the related portion of deferred gains or losses on the derivative instrument is reclassified and reported in net income.

Net Investment in a Foreign Operation Hedge. When a derivative is used as a hedge of a net investment in a foreign operation, its change in fair value, to the extent effective as a hedge, is recorded as a component of OCI. Any hedge ineffectiveness is recorded immediately in net income. If the foreign operation is sold or upon complete or substantially complete liquidation, the deferred gains or losses on the derivative instrument are reclassified into net income.

Non-Hedge Derivatives. If a derivative does not qualify or is not designated for hedge accounting, all changes in fair value are reported in net income without considering the changes in the fair value of the economically associated assets or liabilities.

Hedge Documentation and Effectiveness Testing. At inception, we formally document all relationships between hedging instruments and hedged items, as well as our risk management objective and strategy for undertaking various hedge transactions. This process includes associating all derivatives designated as fair value or cash flow hedges with specific assets or liabilities on the consolidated statements of financial position or with specific firm commitments or forecasted transactions. Effectiveness of the hedge is formally assessed at inception and throughout the life of the hedging relationship. Even if a derivative is highly effective and qualifies for hedge accounting treatment, the hedge might have some ineffectiveness.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

We use qualitative and quantitative methods to assess hedge effectiveness. Qualitative methods may include monitoring changes to terms and conditions and counterparty credit ratings. Quantitative methods may include statistical tests including regression analysis and minimum variance and dollar offset techniques.

Termination of Hedge Accounting. We prospectively discontinue hedge accounting when (1) the criteria to qualify for hedge accounting is no longer met, e.g., a derivative is determined to no longer be highly effective in offsetting the change in fair value or cash flows of a hedged item; (2) the derivative expires, is sold, terminated or exercised or (3) we remove the designation of the derivative being the hedging instrument for a fair value or cash flow hedge.

If it is determined that a derivative no longer qualifies as an effective hedge, the derivative will continue to be carried on the consolidated statements of financial position at its fair value, with changes in fair value recognized prospectively in net realized capital gains (losses). The asset or liability under a fair value hedge will no longer be adjusted for changes in fair value pursuant to hedging rules and the existing basis adjustment is amortized to the consolidated statements of operations line associated with the asset or liability. The component of AOCI related to discontinued cash flow hedges that are no longer highly effective is amortized to the consolidated statements of operations consistent with the net income impacts of the original hedged cash flows. If a cash flow hedge is discontinued because it is probable the hedged forecasted transaction will not occur, the deferred gain or loss is immediately reclassified from AOCI into net income.

Embedded Derivatives. We purchase and issue certain financial instruments and products that contain a derivative that is embedded in the financial instrument or product. We assess whether this embedded derivative is clearly and closely related to the asset or liability that serves as its host contract. If we deem that the embedded derivative's terms are not clearly and closely related to the host contract, and a separate instrument with the same terms would qualify as a derivative instrument, the derivative is bifurcated from that contract and held at fair value on the consolidated statements of financial position, with changes in fair value reported in net income.

Contractholder and Policyholder Liabilities

Contractholder and policyholder liabilities (contractholder funds, future policy benefits and claims and other policyholder funds) include reserves for investment contracts, individual and group annuities that provide periodic income payments, universal life insurance, variable universal life insurance, indexed universal life insurance, term life insurance, participating traditional individual life insurance, group dental and vision insurance, group short-term and long-term disability insurance, group life insurance, individual disability insurance and long-term care insurance. It also includes a provision for dividends on participating policies.

Investment contracts are contractholders' funds on deposit with us and generally include reserves for pension and annuity contracts. Reserves on investment contracts are equal to the cumulative deposits less any applicable charges and withdrawals plus credited interest. Reserves for universal life, variable universal life and indexed universal life insurance contracts are equal to cumulative deposits less charges plus credited interest, which represents the account balances that accrue to the benefit of the policyholders.

We hold additional reserves on certain long-duration contracts where benefit features result in gains in early years followed by losses in later years; universal life, variable universal life and indexed universal life insurance contracts that contain no lapse guarantee features; and annuities with guaranteed minimum death benefits.

Reserves for individual and group annuities that provide periodic income payments, nonparticipating term life insurance and disability income contracts are computed on a basis of assumed investment yield, mortality, morbidity and expenses, including a provision for adverse deviation, which generally varies by plan, year of issue and policy duration. Investment yield is based on our experience. Mortality, morbidity and withdrawal rate assumptions are based on our experience and are periodically reviewed against both industry standards and experience.

Reserves for participating life insurance contracts are based on the net level premium reserve for death and endowment policy benefits. This net level premium reserve is calculated based on dividend fund interest rates and mortality rates guaranteed in calculating the cash surrender values described in the contract.

Participating business represented approximately 7%, 7% and 8% of our life insurance in force and 26%, 29% and 33% of the number of life insurance policies in force as of December 31, 2018, 2017 and 2016, respectively. Participating business represented approximately 24%, 30% and 31% of life insurance premiums for the years ended December 31, 2018, 2017 and 2016, respectively. The amount of dividends to policyholders is declared annually by Principal Life's Board of Directors. The amount of dividends to be paid to policyholders is determined after consideration of several factors including interest, mortality, morbidity and other expense experience for the year and judgment as to the appropriate level of statutory surplus to be retained by Principal Life. At the end of the reporting period, Principal Life

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

establishes a dividend liability for the pro rata portion of the dividends expected to be paid on or before the next policy anniversary date.

Some of our policies and contracts require payment of fees or other policyholder assessments in advance for services that will be rendered over the estimated lives of the policies and contracts. These payments are established as unearned revenue liabilities upon receipt and included in other policyholder funds in the consolidated statements of financial position. These unearned revenue reserves are amortized to net income over the estimated lives of these policies and contracts in relation to the emergence of estimated gross profits ("EGPs").

Short-Duration Contracts

We include the following group products in our short-duration insurance contracts disclosures: long-term disability ("LTD"), group life waiver, dental, vision, short-term disability ("STD"), critical illness, accident and group life.

Future policy benefits and claims include reserves for group life and disability insurance that provide periodic income payments. These reserves are computed using assumptions of mortality, morbidity and investment performance. These assumptions are based on our experience, industry results, emerging trends and future expectations. Future policy benefits and claims also include reserves for incurred but unreported group disability, dental, vision, critical illness, accident and life insurance claims. We recognize claims costs in the period the service was provided to our policyholders. However, claims costs incurred in a particular period are not known with certainty until after we receive, process and pay the claims. We determine the amount of this liability using actuarial methods based on historical claim payment patterns as well as emerging cost trends, where applicable, to determine our estimate of claim liabilities.

We have defined claim frequency as follows for each short-duration product:

- LTD: Claim frequency is based on submitted reserve claim counts.
- Group Life Waiver: Claim frequency is based on submitted reserve claim counts, consistent with LTD.
- Dental and Vision: Claim frequency is based on the claim form, which may include one or more procedures.
- STD, Critical Illness and Accident: Claim frequency is based on submitted claims.
- Group Life: Claim frequency is based on submitted life claims (lives, not coverages).

We did not make any significant changes to our methodologies or assumptions used to calculate the liability for unpaid claims for short-duration contracts during 2018.

Liability for Unpaid Claims

The liability for unpaid claims for both long-duration and short-duration contracts is an estimate of the ultimate net cost of reported and unreported losses not yet settled. This liability is estimated using actuarial analyses and case basis evaluations. Although considerable variability is inherent in such estimates, we believe the liability for unpaid claims is adequate. These estimates are continually reviewed and, as adjustments to this liability become necessary, such adjustments are reflected in net income. Our liability for unpaid claims does not include any allocated claim adjustment expenses.

We incur claim adjustment expenses for both long-duration and short-duration contracts that cannot be allocated to a specific claim. Our claim adjustment expense liability is estimated using actuarial analyses based on historical trends of expenses and expected claim runout patterns.

See Note 8, Insurance Liabilities, under the caption "Liability for Unpaid Claims" for further details.

Recognition of Premiums and Other Considerations, Fees and Other Revenues and Benefits

Products with fixed and guaranteed premiums and benefits consist principally of whole life and term life insurance policies and individual disability income. Premiums from these products are recognized as premium revenue when due. Related policy benefits and expenses for individual life products are associated with earned premiums and result in the recognition of profits over the expected term of the policies and contracts.

Immediate annuities with life contingencies include products with fixed and guaranteed annuity considerations and benefits and consist principally of group and individual single premium annuities with life contingencies. Annuity considerations from these products are recognized as premium revenue. However, the collection of these annuity considerations does not represent the completion of the earnings process, as we establish annuity reserves using estimates

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

for mortality and investment assumptions, which include provision for adverse deviation as required by U.S. GAAP. We anticipate profits to emerge over the life of the annuity products as we earn investment income, pay benefits and release reserves.

Group life, dental, vision and disability premiums are generally recorded as premium revenue over the term of the coverage. Certain group contracts contain experience premium refund provisions based on a pre-defined formula that reflects their claim experience. Experience premium refunds reduce revenue over the term of the coverage and are adjusted to reflect current experience. Related policy benefits and expenses are associated with earned premiums and result in the recognition of profits over the term of the policies and contracts. Fees for contracts providing claim processing or other administrative services are recorded as revenue over the period the service is provided.

Universal life-type policies are insurance contracts with terms that are not fixed. Amounts received as payments for such contracts are not reported as premium revenues. Revenues for universal life-type insurance contracts consist of policy charges for the cost of insurance, policy initiation and administration, surrender charges and other fees that have been assessed against policy account values and investment income. Policy benefits and claims that are charged to expense include interest credited to contracts and benefit claims incurred in the period in excess of related policy account balances.

Investment contracts do not subject us to significant risks arising from policyholder mortality or morbidity and consist primarily of guaranteed investment contracts ("GICs"), funding agreements and certain deferred annuities. Amounts received as payments for investment contracts are established as investment contract liability balances and are not reported as premium revenues. Revenues for investment contracts consist of investment income and policy administration charges. Investment contract benefits that are charged to expense include benefit claims incurred in the period in excess of related investment contract liability balances and interest credited to investment contract liability balances.

Fees and other revenues are earned for asset management, investment advisory and distribution services provided to retail and institutional clients based largely upon contractual rates applied to the specified amounts in the clients' portfolios, which include various platforms such as mutual funds, collective investment trusts and business trusts. Additionally, fees and other revenues are earned for administrative services performed including recordkeeping and reporting services for retirement savings plans and other products. Fees and other revenues received for performance of asset management and administrative services are recognized as revenue when earned, typically when the service is performed.

Fees for managing customers' mandatory retirement savings accounts in Chile are collected with each monthly deposit made by our customers. If a customer stops contributing before retirement age, we collect no fees but services are still provided. We recognize revenue from these long-term service contracts as services are performed over the life of the contract.

Deferred Acquisition Costs

Incremental direct costs of contract acquisition as well as certain costs directly related to acquisition activities (underwriting, policy issuance and processing, medical and inspection and sales force contract selling) for the successful acquisition of new and renewal insurance policies and investment contract business are capitalized to the extent recoverable. Commissions and other incremental direct costs for the acquisition of long-term service contracts are also capitalized to the extent recoverable. Maintenance costs and acquisition costs that are not deferrable are charged to net income as incurred.

DAC for universal life-type insurance contracts and certain investment contracts are amortized over the expected lifetime of the contracts in relation to EGPs or, in certain circumstances, estimated gross revenues ("EGR"). This amortization is adjusted in the current period when EGPs or EGRs are revised. EGRs include similar assumptions as the revenue component of EGPs and the changes of future estimates and reflection of actual experience and market conditions is done in the same manner as EGPs.

For individual variable universal life insurance, individual variable annuities and group annuities that have separate account U.S. equity investment options, we utilize a mean reversion methodology (reversion to the mean assumption), a common industry practice, to determine the future domestic equity market growth rate assumption used for the calculation of EGPs.

DAC for participating life insurance policies are amortized in proportion to estimated gross margins ("EGM") rather than EGPs. EGMs include similar assumption items as EGPs. We stopped selling participating business in the

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

early 2000s. Some products allow for underwritten death benefit increases and cost of living adjustments, resulting in a small amount of new DAC each year, and the amortization schedules are modified as appropriate.

DAC for non-participating term life insurance and individual disability policies are amortized over the premium-paying period of the related policies using assumptions consistent with those used in computing policyholder liabilities. Once these assumptions are made for a given policy or group of policies, they will not be changed over the life of the policy unless a loss recognition event occurs.

DAC on insurance policies and investment contracts are subject to recoverability testing at the time of policy issue and loss recognition testing on an annual basis, or when an event occurs that may warrant loss recognition. If loss recognition or impairment is necessary, DAC would be written off to the extent it is determined that future policy premiums and investment income or gross profits are not adequate to cover related losses and expenses.

Deferred Acquisition Costs on Internal Replacements

All insurance and investment contract modifications and replacements are reviewed to determine if the internal replacement results in a substantially changed contract. If so, the acquisition costs, sales inducements and unearned revenue associated with the new contract are deferred and amortized over the lifetime of the new contract. In addition, the existing DAC, sales inducement costs and unearned revenue balances associated with the replaced contract are written off. If an internal replacement results in a substantially unchanged contract, the acquisition costs, sales inducements and unearned revenue associated with the new contract are immediately recognized in the period incurred. In addition, the existing DAC, sales inducement costs or unearned revenue balance associated with the replaced contract is not written off, but instead is carried over to the new contract.

Long-Term Debt

Long-term debt includes notes payable, nonrecourse mortgages and other debt with a maturity date greater than one year at the date of issuance. Current maturities of long-term debt are classified as long-term debt in our consolidated statements of financial position. Long-term debt is primarily recorded at the unpaid principal balance, net of unamortized discount, premium and issuance costs.

Reinsurance

We enter into reinsurance agreements with other companies in the normal course of business in order to limit losses and minimize exposure to significant risks. We may assume reinsurance from or cede reinsurance to other companies. Assets and liabilities related to reinsurance ceded are reported on a gross basis. Premiums and expenses are reported net of reinsurance ceded. The cost of reinsurance related to long-duration contracts is accounted for over the life of the underlying reinsured policies using assumptions consistent with those used to account for the underlying policies. We are contingently liable with respect to reinsurance ceded to other companies in the event the reinsurer is unable to meet the obligations it has assumed. As of December 31, 2018 and 2017, we had \$450.6 million and \$427.7 million of net ceded reinsurance recoverables related to claims that have been received, respectively. As of December 31, 2018 and 2017, \$435.6 million, or 97%, and \$417.4 million, or 98%, were with our five largest ceded reinsurers, respectively. Our total amount recoverable from reinsurers includes net ceded reinsurance recoverables related to claims that have been received and reserves ceded to reinsurers; however, it does not reflect potentially offsetting impacts of collateral. As of December 31, 2018 and 2017, the total amount recoverable from reinsurers was \$920.8 million and \$864.3 million, respectively, and is recognized in premiums due and other receivables.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****1. Nature of Operations and Significant Accounting Policies — (continued)**

The effects of reinsurance on premiums and other considerations and policy and contract benefits were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Premiums and other considerations:			
Direct	\$ 6,928.3	\$ 6,699.3	\$ 5,753.8
Assumed	1.7	1.9	1.7
Ceded	(520.4)	(483.8)	(456.4)
Net premiums and other considerations	<u>\$ 6,409.6</u>	<u>\$ 6,217.4</u>	<u>\$ 5,299.1</u>
Benefits, claims and settlement expenses:			
Direct	\$ 8,667.7	\$ 8,216.3	\$ 7,202.5
Assumed	24.9	27.7	28.1
Ceded	(500.1)	(421.4)	(317.4)
Net benefits, claims and settlement expenses	<u>\$ 8,192.5</u>	<u>\$ 7,822.6</u>	<u>\$ 6,913.2</u>

Separate Accounts

The separate accounts are legally segregated and are not subject to the claims that arise out of any of our other business. The client, rather than us, directs the investments and bears the investment risk of these funds. The separate account assets represent the fair value of funds that are separately administered by us for contracts with equity, real estate and fixed income investments and are presented as a summary total within the consolidated statements of financial position. An equivalent amount is reported as separate account liabilities, which represent the obligation to return the monies to the client. We receive fees for mortality, withdrawal and expense risks, as well as administrative, maintenance and investment advisory services that are included in the consolidated statements of operations. Net deposits, net investment income and realized and unrealized capital gains and losses of the separate accounts are not reflected in the consolidated statements of operations.

Separate account assets and separate account liabilities include certain international retirement accumulation products where the segregated funds and associated obligation to the client are consolidated within our financial statements. We have determined that summary totals are the most meaningful presentation for these funds.

As of December 31, 2018 and December 31, 2017, the separate accounts included a separate account valued at \$94.9 million and \$170.5 million, respectively, which primarily included shares of our stock that were allocated and issued to eligible participants of qualified employee benefit plans administered by us as part of the policy credits issued under our 2001 demutualization. These shares are included in both basic and diluted earnings per share calculations. In the consolidated statements of financial position, the separate account shares are recorded at fair value and are reported as separate account assets with a corresponding separate account liability to eligible participants of the qualified plan. Changes in fair value of the separate account shares are reflected in both the separate account assets and separate account liabilities and do not impact our results of operations.

Income Taxes

We file a U.S. consolidated income tax return that includes all of our qualifying subsidiaries. In addition, we file income tax returns in all states and foreign jurisdictions in which we conduct business. Our policy of allocating income tax expenses and benefits to companies in the group is generally based upon pro rata contribution of taxable income or operating losses. We are taxed at corporate rates on taxable income based on existing tax laws. Current income taxes are charged or credited to net income based upon amounts estimated to be payable or recoverable as a result of taxable operations for the current year. Deferred income taxes are provided for the tax effect of temporary differences in the financial reporting and income tax bases of assets and liabilities, net operating loss carryforwards and tax credit carryforwards using enacted income tax rates and laws. The effect on deferred income tax assets and deferred income tax liabilities of a change in tax rates is recognized in net income in the period in which the change is enacted. Subsequent to a change in tax rates and laws, any stranded tax effects remaining in AOCI will be released only if an entire portfolio is liquidated, sold or extinguished. However, a specific exception to this rule was adopted effective January 1, 2018, to reclassify the stranded tax effects generated by U.S. tax reform from AOCI to retained earnings. Further details are included under the caption "Recent Accounting Pronouncements."

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

1. Nature of Operations and Significant Accounting Policies — (continued)

Foreign Exchange

Assets and liabilities of our foreign subsidiaries and affiliates denominated in non-U.S. dollars, where the U.S. dollar is not the functional currency, are translated into U.S. dollar equivalents at the year-end spot foreign exchange rates. Resulting translation adjustments are reported as a component of stockholders' equity, along with any related hedge and tax effects. Revenues and expenses for these entities are translated at the average exchange rates. Revenue, expense and other foreign currency transaction and translation adjustments that affect cash flows are reported in net income, along with related hedge and tax effects.

Goodwill and Other Intangibles

Goodwill and other intangible assets include the cost of acquired subsidiaries in excess of the fair value of the net tangible assets recorded in connection with acquisitions. Goodwill and indefinite-lived intangible assets are not amortized. Rather, they are tested for impairment during the third quarter each year, or more frequently if events or changes in circumstances indicate that the asset might be impaired. Goodwill is tested at the reporting unit level, which is a business one level below the operating segment, if financial information is prepared and regularly reviewed by management at that level. Once goodwill has been assigned to a reporting unit, it is no longer associated with a particular acquisition; therefore, all of the activities within a reporting unit, whether acquired or organically grown, are available to support the goodwill value. Impairment testing for indefinite-lived intangible assets consists of a comparison of the fair value of the intangible asset with its carrying value.

Intangible assets with a finite useful life are amortized as related benefits emerge and are reviewed periodically for indicators of impairment in value. If facts and circumstances suggest possible impairment, the sum of the estimated undiscounted future cash flows expected to result from the use of the asset is compared to the current carrying value of the asset. If the undiscounted future cash flows are less than the carrying value, an impairment loss is recognized for the excess of the carrying amount of assets over their fair value.

Earnings Per Common Share

Basic earnings per common share is calculated by dividing net income available to common stockholders by the weighted-average number of common shares outstanding for the period and excludes the dilutive effect of equity awards. Diluted earnings per common share reflects the potential dilution that could occur if dilutive securities, such as options and non-vested stock grants, were exercised or resulted in the issuance of common stock.

2. Goodwill and Other Intangible Assets

Goodwill

The changes in the carrying amount of goodwill reported in our segments were as follows:

	<u>Retirement and Income Solutions</u>	<u>Principal Global Investors</u>	<u>Principal International</u>	<u>U.S. Insurance Solutions</u>	<u>Corporate</u>	<u>Consolidated</u>
	<i>(in millions)</i>					
Balance as of January 1, 2017	\$ 57.4	\$ 242.5	\$ 664.3	\$ 56.6	\$ —	\$ 1,020.8
Foreign currency	—	4.8	43.2	—	—	48.0
Balance as of December 31, 2017	57.4	247.3	707.5	56.6	—	1,068.8
Goodwill from acquisitions (1)	—	65.0	46.8	—	2.1	113.9
Goodwill disposed (2)	—	—	(12.0)	—	—	(12.0)
Foreign currency	—	(5.0)	(65.7)	—	—	(70.7)
Balance as of December 31, 2018	<u>\$ 57.4</u>	<u>\$ 307.3</u>	<u>\$ 676.6</u>	<u>\$ 56.6</u>	<u>\$ 2.1</u>	<u>\$ 1,100.0</u>

(1) Relates to the acquisitions of: a) RobustWealth, a financial technology company, which is consolidated within our Corporate segment with the majority of the goodwill allocated to our Principal Global Investors segment; b) INTERNOS, a London-based European real estate investment manager that, upon acquisition, became Principal Real Estate Europe Limited and is consolidated within our Principal Global Investors segment; c) MetLife Afore, S.A. de C.V., which was MetLife, Inc.'s pension fund management business in Mexico and is consolidated within our Principal International segment.

(2) Relates to sales of closed blocks of business in Mexico.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****2. Goodwill and Other Intangible Assets — (continued)****Finite Lived Intangible Assets**

Amortized intangible assets primarily relate to customer relationship intangibles associated with previous acquisitions in Chile, Mexico and Hong Kong. The finite lived intangible assets that continue to be subject to amortization over a weighted average remaining expected life of 14 years were as follows:

	<u>December 31,</u>	
	<u>2018</u>	<u>2017</u>
	<i>(in millions)</i>	
Gross carrying value	\$ 810.2	\$ 782.9
Accumulated amortization	<u>288.4</u>	<u>277.7</u>
Net carrying value	<u>\$ 521.8</u>	<u>\$ 505.2</u>

The amortization expense for intangible assets with finite useful lives was \$53.9 million, \$45.4 million and \$44.5 million for 2018, 2017 and 2016, respectively. As of December 31, 2018, the estimated amortization expense for the next five years is as follows (in millions):

Year ending December 31:	
2019	\$ 48.5
2020	48.2
2021	47.0
2022	46.3
2023	44.2

Indefinite Lived Intangible Assets

The net carrying amount of unamortized indefinite lived intangible assets was \$793.3 million and \$809.5 million as of December 31, 2018 and 2017, respectively. As of both December 31, 2018 and 2017, \$608.0 million relates to investment management contracts associated with our acquisition of WM Advisors, Inc. in 2006. The remaining balance primarily relates to the trade name intangible associated with our acquisition of Administradora de Fondos de Pensiones Cuprum S.A. ("Cuprum") in 2013.

3. Variable Interest Entities

We have relationships with various types of entities which may be VIEs. Certain VIEs are consolidated in our financial results. See Note 1, Nature of Operations and Significant Accounting Policies, under the caption "Consolidation" for further details of our consolidation accounting policies. We did not provide financial or other support to investees designated as VIEs for the periods ended December 31, 2018 and December 31, 2017.

Adoption of New Consolidation Guidance

Both the variable interest and voting interest consolidation models were changed under authoritative guidance effective January 1, 2016. The guidance eliminated the investment company deferral for portions of the variable interest model. Prior to January 1, 2016, the primary beneficiary of an investment company VIE was the enterprise who absorbed the majority of the entity's expected losses, received a majority of the expected residual returns or both. The new guidance requires all VIEs to be assessed under one method to determine the primary beneficiary.

The determination of whether interests in limited partnerships and similar entities are VIEs or VOEs has also changed under the pronouncement, by requiring evaluation of the equity holders' rights to determine if they have the power to direct the entity's most significant activities through substantive kick-out rights or participating rights. Limited partnerships and similar entities without these rights are VIEs.

We adopted the guidance using the modified retrospective approach effective January 1, 2016. Under the modified retrospective approach, the cumulative effect of initially applying the new guidance is recognized as of the date of initial application, and comparative periods are not restated. The changes resulting from the adoption were:

- The adoption resulted in the deconsolidation of \$8.6 billion of both assets and liabilities of certain mandatory privatized social security funds in which we provide asset management services. Prior to January 1, 2016, the funds were consolidated as VOEs and the funds were presented in separate account assets and liabilities in the

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****3. Variable Interest Entities — (continued)**

consolidated statements of financial position. The deconsolidation did not have a material impact to our consolidated statements of operations and did not result in a cumulative effect of the change on retained earnings.

- The adoption of the guidance resulted in consolidation of certain sponsored investment funds in which we provide asset management services. We consolidated \$180.1 million of assets and \$0.6 million of liabilities. Additionally, we recorded \$179.5 million of redeemable noncontrolling interest related to these funds. The consolidation of these funds did not have a material impact to our consolidated statements of operations and did not result in a cumulative effect of the change on retained earnings.
- We invest in partnerships and other funds. Prior to new accounting guidance certain of these investments were VOEs. Upon adoption of new accounting guidance, some of these investments are now considered VIEs. We are not the primary beneficiary of these VIEs.
- We provide asset management and other services to certain investment structures for which we earn performance-based management fees. These structures were considered VIEs prior to new accounting guidance, and we had a variable interest. We were not the primary beneficiary of these entities as we did not have the obligation to absorb losses or the right to receive benefits of the entities that could be potentially significant to the VIE. Subsequent to new accounting guidance, we no longer consider our fees a variable interest for those investment structures where our fees are deemed to be commensurate with the services provided, consistent with fees for similar services negotiated at arms-length, and we do not have additional interests in the entity that would absorb a significant amount of the entity's expected losses and expected residual returns of the entity.

Consolidated Variable Interest Entities***Grantor Trusts***

We contributed undated subordinated floating rate notes to two grantor trusts. The trusts separated their cash flows by issuing an interest-only certificate and a residual certificate related to each note contributed. Each interest-only certificate entitles the holder to interest on the stated note for a specified term, while the residual certificate entitles the holder to interest payments subsequent to the term of the interest-only certificate and to all principal payments. We retained the interest-only certificates and the residual certificates were subsequently sold to third parties. We determined these grantor trusts are VIEs due to insufficient equity to sustain them. We determined we are the primary beneficiary as a result of our contribution of securities into the trusts and our significant continuing interest in the trusts. In 2018, the interest-only certificates from one of the grantor trusts were sold to a third party.

Commercial Mortgage-Backed Securities

We sold commercial mortgage loans to a real estate mortgage investment conduit trust. The trust issued various commercial mortgage-backed securities ("CMBS") certificates using the cash flows of the underlying commercial mortgage loans it purchased. This is considered a VIE due to insufficient equity to sustain itself. We determined we are the primary beneficiary as we retained the special servicing role for the assets within the trust as well as the ownership of the bond class that controls the unilateral kick-out rights of the special servicer.

Mandatory Retirement Savings Funds

We hold an equity interest in Chilean mandatory privatized social security funds in which we provide asset management services. We determined the mandatory privatized social security funds, which also include contributions for voluntary pension savings, voluntary non-pension savings and compensation savings accounts, are VIEs. This is because the equity holders as a group lack the power, due to voting rights or similar rights, to direct the activities of the entity that most significantly impact the entity's economic performance and also because equity investors are protected from below-average market investment returns relative to the industry's return, due to a regulatory guarantee that we provide. Further we concluded we are the primary beneficiary through our power to make decisions and our significant variable interest in the funds. The purpose of the funds, which reside in legally segregated entities, is to provide long-term retirement savings. The obligation to the customer is directly related to the assets held in the funds and, as such, we present the assets as separate account assets and the obligation as separate account liabilities within our consolidated statements of financial position.

Principal International Hong Kong offers retirement pension schemes in which we provide trustee, administration and asset management services to employers and employees under the Hong Kong Mandatory Provident Fund and Occupational Retirement Schemes Ordinance pension schemes. Each pension scheme has various guaranteed and

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****3. Variable Interest Entities — (continued)**

non-guaranteed constituent funds, or investment options, in which customers can invest their money. The guaranteed funds provide either a guaranteed rate of return to the customer or a minimum guarantee on withdrawals under certain qualifying events. We determined the guaranteed funds are VIEs due to the fact the equity holders, as a group, lack the obligation to absorb expected losses due to the guarantee we provide. We concluded we are the primary beneficiary because we have the power to make decisions and to receive benefits and the obligation to absorb losses that could be potentially significant to the VIE. Therefore, we consolidate the underlying assets and liabilities of the funds and present as separate accounts or within the general account, depending on the terms of the guarantee.

Real Estate

We invest in several real estate limited partnerships and limited liability companies. The entities invest in real estate properties. Certain of these entities are VIEs based on the combination of our significant economic interest and related voting rights. We determined we are the primary beneficiary as a result of our power to control the entities through our significant ownership. Due to the nature of these real estate investments, the investment balance will fluctuate as we purchase and sell interests in the entities and as capital expenditures are made to improve the underlying real estate.

Sponsored Investment Funds

We sponsor and invest in certain investment funds for which we provide asset management services. Although our asset management fee is commensurate with the services provided and consistent with fees for similar services negotiated at arms-length, we have a variable interest for funds where our other interests are more than insignificant. The funds are VIEs as the equity holders lack power through voting rights to direct the activities of the entity that most significantly impact its economic performance. We determined we are the primary beneficiary of the VIEs where our interest in the entity is more than insignificant and we are the asset manager.

We also invest in certain series of another investment fund. These series are VIEs as the equity holders of each series lack the power to direct the most significant activities of the VIE. We determined we are the primary beneficiary of these series as our interest is more than insignificant and collectively we have the power to direct the most significant activities of the fund.

Assets and Liabilities of Consolidated Variable Interest Entities

The carrying amounts of our consolidated VIE assets, which can only be used to settle obligations of consolidated VIEs, and liabilities of consolidated VIEs for which creditors do not have recourse were as follows:

	December 31, 2018		December 31, 2017	
	Total assets	Total liabilities	Total assets	Total liabilities
	<i>(in millions)</i>			
Grantor trusts (1)	\$ 95.0	\$ 89.4	\$ 268.8	\$ 253.1
CMBS	6.4	—	9.4	—
Mandatory retirement savings funds (2)	37,915.7	37,579.3	42,311.4	41,921.4
Real estate (3)	379.2	70.6	387.1	19.5
Sponsored investment funds (4)	526.5	3.6	178.1	1.0
Total	<u>\$ 38,922.8</u>	<u>\$ 37,742.9</u>	<u>\$ 43,154.8</u>	<u>\$ 42,195.0</u>

- (1) The assets of grantor trusts are primarily fixed maturities, available-for-sale. The liabilities are primarily other liabilities that reflect an embedded derivative of the forecasted transaction to deliver the underlying securities.
- (2) The assets of the mandatory retirement savings funds include separate account assets and equity securities. The liabilities include separate account liabilities and contractholder funds.
- (3) The assets of the real estate VIEs primarily include real estate and cash. Liabilities primarily include long-term debt and other liabilities.
- (4) The assets of sponsored investment funds are primarily fixed maturities and equity securities, certain of which are reported with other investments, and cash. The consolidated statements of financial position included a \$325.7 million and \$52.4 million redeemable noncontrolling interest for sponsored investment funds as of December 31, 2018 and December 31, 2017, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

3. Variable Interest Entities — (continued)

Unconsolidated Variable Interest Entities

We hold a variable interest in a number of VIEs where we are not the primary beneficiary. Our investments in these VIEs are reported in fixed maturities, available-for-sale; fixed maturities, trading; equity securities (equity securities, trading as of December 31, 2017) and other investments in the consolidated statements of financial position and are described below.

Unconsolidated VIEs include certain CMBS, residential mortgage-backed pass-through securities ("RMBS") and other asset-backed securities ("ABS"). All of these entities were deemed VIEs because the equity within these entities is insufficient to sustain them. We determined we are not the primary beneficiary in the entities within these categories of investments. This determination was based primarily on the fact we do not own the class of security that controls the unilateral right to replace the special servicer or equivalent function.

We invest in cash collateralized debt obligations, collateralized bond obligations, collateralized loan obligations and other collateralized structures, which are VIEs due to insufficient equity to sustain the entities. We have determined we are not the primary beneficiary of these entities primarily because we do not control the economic performance of the entities and were not involved with the design of the entities or because we do not have a potentially significant variable interest in the entities for which we are the asset manager.

We have invested in various VIE trusts and similar entities as a debt holder. Most of these entities are classified as VIEs due to insufficient equity to sustain them. In addition, we have an entity classified as a VIE based on the combination of our significant economic interest and lack of voting rights. We have determined we are not the primary beneficiary primarily because we do not control the economic performance of the entities and were not involved with the design of the entities.

We have invested in partnerships and other funds, which are classified as VIEs. The entities are VIEs as equity holders lack the power to control the most significant activities of the entities because the equity holders do not have either the ability by a simple majority to exercise substantive kick-out rights or substantive participating rights. We have determined we are not the primary beneficiary because we do not have the power to direct the most significant activities of the entities.

As previously discussed, we sponsor, invest in and have other interests in certain investment funds that are VIEs. We determined we are not the primary beneficiary of the VIEs for which we are the asset manager but do not have a potentially significant variable interest in the funds.

We hold an equity interest in Mexican mandatory privatized social security funds in which we provide asset management services. Our equity interest in the funds is considered a variable interest. We concluded the funds are VIEs because the equity holders as a group lack decision-making ability through their voting rights. We are not the primary beneficiary of the VIEs because although we, as the asset manager, have the power to direct the activities of the VIEs, we do not have a potentially significant variable interest in the funds.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

3. Variable Interest Entities — (continued)

The carrying value and maximum loss exposure for our unconsolidated VIEs were as follows:

	<u>Asset carrying value</u>	<u>Maximum exposure to loss (1)</u>
	<i>(in millions)</i>	
December 31, 2018		
Fixed maturities, available-for-sale:		
Corporate	\$ 235.3	\$ 222.6
Residential mortgage-backed pass-through securities	2,460.6	2,488.5
Commercial mortgage-backed securities	3,945.6	4,023.1
Collateralized debt obligations (2)	2,420.8	2,451.3
Other debt obligations	7,153.2	7,196.6
Fixed maturities, trading:		
Residential mortgage-backed pass-through securities	322.6	322.6
Commercial mortgage-backed securities	13.8	13.8
Collateralized debt obligations (2)	11.8	11.8
Other debt obligations	9.7	9.7
Equity securities	103.9	103.9
Other investments:		
Other limited partnership and fund interests (3)	737.5	1,432.2
December 31, 2017		
Fixed maturities, available-for-sale:		
Corporate	\$ 244.2	\$ 224.5
Residential mortgage-backed pass-through securities	2,523.3	2,493.8
Commercial mortgage-backed securities	3,708.3	3,734.0
Collateralized debt obligations (2)	1,359.3	1,372.1
Other debt obligations	5,646.2	5,645.1
Fixed maturities, trading:		
Residential mortgage-backed pass-through securities	366.5	366.5
Commercial mortgage-backed securities	0.7	0.7
Equity securities	77.1	77.1
Other investments:		
Other limited partnership and fund interests	797.4	1,438.0

- (1) Our risk of loss is limited to our initial investment measured at amortized cost for fixed maturities, available-for-sale. Our risk of loss is limited to our investment measured at fair value for our fixed maturities, trading and equity securities. Our risk of loss is limited to our carrying value plus any unfunded commitments and/or guarantees and similar provisions for our other investments. Unfunded commitments are not liabilities on our consolidated statements of financial position because we are only required to fund additional equity when called upon to do so by the general partner or investment manager.
- (2) Primarily consists of collateralized loan obligations backed by secured corporate loans.
- (3) As of December 31, 2018, the maximum exposure to loss for other limited partnership and fund interests includes \$132.2 million of debt within certain of our managed international real estate funds that is fully secured by assets whose value exceeds the amount of the debt, but also includes recourse to the investment manager.

Money Market Funds

We are the investment manager for certain money market mutual funds. These types of funds are exempt from assessment under any consolidation model due to a scope exception for money market funds registered under Rule 2a-7 of the Investment Company Act of 1940 or similar funds. As of December 31, 2018 and December 31, 2017, money market mutual funds we manage held \$3.0 billion and \$4.4 billion in total assets, respectively. We have no contractual obligation to contribute to these funds; however, we provide support through the waiver of fees and through expense reimbursements. The amount of fees waived and expenses reimbursed was insignificant.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments

Fixed Maturities and Equity Securities

The amortized cost, gross unrealized gains and losses, other-than-temporary impairments in AOCI and fair value of available-for-sale securities were as follows:

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Other-than- temporary impairments in AOCI (1)
	<i>(in millions)</i>				
December 31, 2018					
Fixed maturities, available-for-sale:					
U.S. government and agencies	\$ 1,441.6	\$ 16.4	\$ 17.0	\$ 1,441.0	\$ —
Non-U.S. governments	833.4	71.7	14.6	890.5	—
States and political subdivisions	6,125.0	196.0	95.3	6,225.7	—
Corporate	35,134.6	1,249.9	845.2	35,539.3	—
Residential mortgage-backed pass-through securities	2,488.5	21.9	49.8	2,460.6	—
Commercial mortgage-backed securities	4,023.1	17.1	94.6	3,945.6	16.3
Collateralized debt obligations (2)	2,451.3	—	30.5	2,420.8	1.2
Other debt obligations	7,228.3	39.4	82.7	7,185.0	36.1
Total fixed maturities, available-for-sale	\$ 59,725.8	\$ 1,612.4	\$ 1,229.7	\$ 60,108.5	\$ 53.6
December 31, 2017					
Fixed maturities, available-for-sale:					
U.S. government and agencies	\$ 1,314.5	\$ 44.9	\$ 7.7	\$ 1,351.7	\$ —
Non-U.S. governments	820.5	84.6	3.6	901.5	—
States and political subdivisions	6,446.1	371.4	15.9	6,801.6	—
Corporate	34,673.0	2,464.2	104.1	37,033.1	0.5
Residential mortgage-backed pass-through securities	2,493.8	50.8	21.3	2,523.3	—
Commercial mortgage-backed securities	3,734.0	32.7	58.4	3,708.3	50.6
Collateralized debt obligations (2)	1,372.1	2.7	15.5	1,359.3	0.3
Other debt obligations	5,708.1	42.0	40.5	5,709.6	41.9
Total fixed maturities, available-for-sale	\$ 56,562.1	\$ 3,093.3	\$ 267.0	\$ 59,388.4	\$ 93.3
Total equity securities, available-for-sale	\$ 94.0	\$ 7.4	\$ 5.4	\$ 96.0	

- (1) Excludes \$64.2 million and \$103.0 million as of December 31, 2018 and December 31, 2017, respectively, of net unrealized gains on impaired fixed maturities, available-for-sale related to changes in fair value subsequent to the impairment date, which are included in gross unrealized gains and gross unrealized losses.
- (2) Primarily consists of collateralized loan obligations backed by secured corporate loans.

The amortized cost and fair value of fixed maturities, available-for-sale as of December 31, 2018, by expected maturity, were as follows:

	Amortized cost	Fair value
	<i>(in millions)</i>	
Due in one year or less	\$ 2,747.4	\$ 2,753.5
Due after one year through five years	10,602.1	10,631.7
Due after five years through ten years	10,511.7	10,389.7
Due after ten years	19,673.4	20,321.6
Subtotal	43,534.6	44,096.5
Mortgage-backed and other asset-backed securities	16,191.2	16,012.0
Total	\$ 59,725.8	\$ 60,108.5

Actual maturities may differ because borrowers may have the right to call or prepay obligations. Our portfolio is diversified by industry, issuer and asset class. Credit concentrations are managed to established limits.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

Net Investment Income

Major components of net investment income were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Fixed maturities, available-for-sale	\$ 2,479.9	\$ 2,342.3	\$ 2,253.8
Fixed maturities, trading	26.4	12.6	20.2
Equity securities, available-for-sale	—	21.7	20.1
Equity securities, trading	—	46.1	31.4
Equity securities	38.8	—	—
Mortgage loans	641.4	605.9	573.9
Real estate	158.8	129.4	127.9
Policy loans	45.0	45.6	46.3
Cash and cash equivalents	56.2	28.6	14.2
Derivatives (1)	0.1	(3.2)	(36.1)
Other	285.0	319.6	329.2
Total	<u>3,731.6</u>	<u>3,548.6</u>	<u>3,380.9</u>
Investment expenses	<u>(102.4)</u>	<u>(89.3)</u>	<u>(84.4)</u>
Net investment income	<u>\$ 3,629.2</u>	<u>\$ 3,459.3</u>	<u>\$ 3,296.5</u>

- (1) Relates to periodic settlements of derivatives used in fair value and cash flow hedges of fixed maturities, available-for-sale. See Note 5, Derivative Financial Instruments, for further details.

Net Realized Capital Gains and Losses

Major components of net realized capital gains (losses) on investments were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Fixed maturities, available-for-sale:			
Gross gains	\$ 40.2	\$ 14.7	\$ 74.6
Gross losses	(74.8)	(27.2)	(28.6)
Net impairment losses	(29.1)	(81.7)	(96.7)
Hedging, net	(39.6)	(28.5)	(37.9)
Fixed maturities, trading (1)	(9.0)	(8.0)	4.1
Equity securities, available-for-sale:			
Gross gains	—	0.2	—
Net impairment losses	—	(0.1)	(1.7)
Equity securities, trading (2)	—	65.0	6.8
Equity securities (3)	(17.7)	—	—
Mortgage loans	6.2	9.0	4.5
Derivatives	11.7	(149.8)	210.1
Other (4)	36.7	730.6	35.9
Net realized capital gains (losses)	<u>\$ (75.4)</u>	<u>\$ 524.2</u>	<u>\$ 171.1</u>

- (1) Unrealized gains (losses) on fixed maturities, trading still held at the reporting date were \$(12.2) million, \$(7.5) million and \$6.5 million for the years ended December 31, 2018, 2017 and 2016, respectively.
- (2) Unrealized gains (losses) on equity securities, trading still held at the reporting date were \$45.3 million and \$(0.8) million for the years ended December 31, 2017 and 2016, respectively. This excludes \$34.9 million and \$18.8 million of unrealized gains (losses) on equity securities, trading still held at the reporting date for the years ended December 31, 2017 and 2016, respectively, that were reported in net investment income.
- (3) Unrealized gains (losses) on equity securities still held at the reporting date were \$(39.9) million for the year ended December 31, 2018. This excludes \$4.9 million of unrealized gains (losses) on equity securities still held at the reporting date for the year ended December 31, 2018, that was reported in net investment income.
- (4) Further details relating to other gains in 2017 are included under the caption "Real Estate Transactions."

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****4. Investments — (continued)**

Proceeds from sales of investments (excluding call and maturity proceeds) in fixed maturities, available-for-sale were \$3,067.2 million, \$1,345.8 million and \$1,916.9 million in 2018, 2017 and 2016, respectively.

Other-Than-Temporary Impairments

We have a process in place to identify fixed maturity securities that could potentially have an impairment that is other than temporary. Prior to 2018, we also used this process to assess equity securities for impairment. This process involves monitoring market events that could impact issuers' credit ratings, business climate, management changes, litigation and government actions and other similar factors. This process also involves monitoring late payments, pricing levels, downgrades by rating agencies, key financial ratios, financial statements, revenue forecasts and cash flow projections as indicators of credit issues.

Each reporting period, all securities are reviewed to determine whether an other-than-temporary decline in value exists and whether losses should be recognized. We consider relevant facts and circumstances in evaluating whether a credit or interest rate related impairment of a security is other than temporary. Relevant facts and circumstances considered include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in value; (3) the financial position and access to capital of the issuer, including the current and future impact of any specific events; (4) for structured securities, the adequacy of the expected cash flows; (5) for fixed maturities, our intent to sell a security or whether it is more likely than not we will be required to sell the security before the recovery of its amortized cost which, in some cases, may extend to maturity and (6) for equity securities, our ability and intent to hold the security for a period of time that allows for the recovery in value. To the extent we determine a security is deemed to be other than temporarily impaired, an impairment loss is recognized.

The way in which impairment losses on fixed maturities are recognized in the financial statements is dependent on the facts and circumstances related to the specific security. If we intend to sell a security or it is more likely than not that we would be required to sell a security before the recovery of its amortized cost, we recognize an other-than-temporary impairment in net income for the difference between amortized cost and fair value. If we do not expect to recover the amortized cost basis, we do not plan to sell the security and if it is not more likely than not that we would be required to sell a security before the recovery of its amortized cost, the recognition of the other-than-temporary impairment is bifurcated. We recognize the credit loss portion in net income and the noncredit loss portion in OCI ("bifurcated OTTI"). Prior to 2018, impairment losses on equity securities were recognized in net income and were measured as the difference between amortized cost and fair value.

Total other-than-temporary impairment losses, net of recoveries from the sale of previously impaired securities, were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Fixed maturities, available-for-sale	\$ 10.6	\$ (28.6)	\$ (97.1)
Equity securities, available-for-sale	—	(0.1)	(1.7)
Total other-than-temporary impairment losses, net of recoveries from the sale of previously impaired securities	10.6	(28.7)	(98.8)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified to (from) OCI (1)	(39.7)	(53.1)	0.4
Net impairment losses on available-for-sale securities	\$ (29.1)	\$ (81.8)	\$ (98.4)

- (1) Represents the net impact of (a) gains resulting from reclassification of noncredit impairment losses for fixed maturities with bifurcated OTTI from net realized capital gains (losses) to OCI and (b) losses resulting from reclassification of previously recognized noncredit impairment losses from OCI to net realized capital gains (losses) for fixed maturities with bifurcated OTTI that had additional credit losses or fixed maturities that previously had bifurcated OTTI that have now been sold or are intended to be sold.

We estimate the amount of the credit loss component of a fixed maturity security impairment as the difference between amortized cost and the present value of the expected cash flows of the security. The present value is determined using the best estimate cash flows discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete an asset-backed or floating rate security. The methodology and assumptions for establishing the best estimate cash flows vary depending on the type of security. The ABS cash flow estimates are based on security specific facts and circumstances that may include collateral characteristics, expectations of delinquency and default rates, loss severity and prepayment speeds and structural support, including subordination and guarantees. The

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

corporate security cash flow estimates are derived from scenario-based outcomes of expected corporate restructurings or liquidations using bond specific facts and circumstances including timing, security interests and loss severity.

The following table provides a rollforward of accumulated credit losses for fixed maturities with bifurcated credit losses. The purpose of the table is to provide detail of (1) additions to the bifurcated credit loss amounts recognized in net realized capital gains (losses) during the period and (2) decrements for previously recognized bifurcated credit losses where the loss is no longer bifurcated and/or there has been a positive change in expected cash flows or accretion of the bifurcated credit loss amount.

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Beginning balance	\$ (124.3)	\$ (139.9)	\$ (131.5)
Credit losses for which an other-than-temporary impairment was not previously recognized	(11.3)	(15.0)	(43.4)
Credit losses for which an other-than-temporary impairment was previously recognized	(20.0)	(42.5)	(31.7)
Reduction for credit losses previously recognized on fixed maturities now sold, paid down or intended to be sold	29.5	63.3	60.5
Net reduction for positive changes in cash flows expected to be collected and amortization (1)	8.6	10.0	6.4
Foreign currency translation adjustment	—	(0.2)	(0.2)
Ending balance	<u>\$ (117.5)</u>	<u>\$ (124.3)</u>	<u>\$ (139.9)</u>

(1) Amounts are recognized in net investment income.

Gross Unrealized Losses for Available-for-Sale Securities

For available-for-sale securities with unrealized losses, including other-than-temporary impairment losses reported in OCI, the gross unrealized losses and fair value, aggregated by investment category and length of time that individual securities have been in a continuous unrealized loss position were as follows:

	December 31, 2018					
	Less than twelve months		Greater than or equal to twelve months		Total	
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses
	<i>(in millions)</i>					
Fixed maturities, available-for-sale:						
U.S. government and agencies	\$ 101.8	\$ 1.6	\$ 500.3	\$ 15.4	\$ 602.1	\$ 17.0
Non-U.S. governments	210.2	4.7	191.5	9.9	401.7	14.6
States and political subdivisions	1,359.9	33.9	1,590.3	61.4	2,950.2	95.3
Corporate	13,198.4	476.0	6,865.0	369.2	20,063.4	845.2
Residential mortgage-backed pass-through securities	236.7	1.0	1,410.2	48.8	1,646.9	49.8
Commercial mortgage-backed securities	790.3	11.6	2,223.2	83.0	3,013.5	94.6
Collateralized debt obligations (1)	2,233.3	24.0	162.6	6.5	2,395.9	30.5
Other debt obligations	985.5	4.9	3,665.1	77.8	4,650.6	82.7
Total fixed maturities, available-for-sale	<u>\$ 19,116.1</u>	<u>\$ 557.7</u>	<u>\$ 16,608.2</u>	<u>\$ 672.0</u>	<u>\$ 35,724.3</u>	<u>\$ 1,229.7</u>

(1) Primarily consists of collateralized loan obligations backed by secured corporate loans.

Of the total amounts, Principal Life's consolidated portfolio represented \$35,051.9 million in available-for-sale fixed maturities with gross unrealized losses of \$1,202.9 million. Of the available-for-sale fixed maturities within Principal Life's consolidated portfolio in a gross unrealized loss position, 95% were investment grade (rated AAA through BBB-) with an average price of 97 (carrying value/amortized cost) as of December 31, 2018. Gross unrealized losses in our fixed maturities portfolio increased during the year ended December 31, 2018, primarily due to widening of credit spreads and an increase in interest rates.

For those securities that had been in a continuous unrealized loss position for less than twelve months, Principal Life's consolidated portfolio held 2,076 securities with a carrying value of \$18,764.0 million and unrealized losses of

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

\$541.3 million reflecting an average price of 97 as of December 31, 2018. Of this portfolio, 92% was investment grade (rated AAA through BBB-) as of December 31, 2018, with associated unrealized losses of \$473.7 million. The unrealized losses on these securities can primarily be attributed to changes in market interest rates and changes in credit spreads since the securities were acquired.

For those securities that had been in a continuous unrealized loss position greater than or equal to twelve months, Principal Life's consolidated portfolio held 2,335 securities with a carrying value of \$16,287.9 million and unrealized losses of \$661.6 million. The average credit rating of this portfolio was AA- with an average price of 96 as of December 31, 2018. Of the \$661.6 million in unrealized losses, the corporate sector accounts for \$360.4 million in unrealized losses with an average price of 95 and an average credit rating of A-. The remaining unrealized losses also include \$82.2 million within the commercial mortgage-backed securities sector with an average price of 96 and an average credit rating of AA+. The unrealized losses on these securities can primarily be attributed to changes in market interest rates and changes in credit spreads since the securities were acquired.

Because we expected to recover our amortized cost, it was not our intent to sell the fixed maturity available-for-sale securities with unrealized losses and it was not more likely than not that we would be required to sell these securities before recovery of the amortized cost, which may be at maturity, we did not consider these investments to be other-than-temporarily impaired as of December 31, 2018.

	December 31, 2017					
	Less than twelve months		Greater than or equal to twelve months		Total	
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses
	<i>(in millions)</i>					
Fixed maturities, available-for-sale:						
U.S. government and agencies	\$ 294.2	\$ 2.2	\$ 180.9	\$ 5.5	\$ 475.1	\$ 7.7
Non-U.S. governments	111.0	1.7	22.1	1.9	133.1	3.6
States and political subdivisions	720.0	5.0	437.7	10.9	1,157.7	15.9
Corporate	3,871.5	43.4	1,644.3	60.7	5,515.8	104.1
Residential mortgage-backed pass-through securities	354.4	2.0	734.5	19.3	1,088.9	21.3
Commercial mortgage-backed securities	1,342.7	19.9	820.3	38.5	2,163.0	58.4
Collateralized debt obligations (1)	460.9	2.1	38.3	13.4	499.2	15.5
Other debt obligations	2,667.6	16.0	956.8	24.5	3,624.4	40.5
Total fixed maturities, available-for-sale	\$ 9,822.3	\$ 92.3	\$ 4,834.9	\$ 174.7	\$ 14,657.2	\$ 267.0
Total equity securities, available-for-sale	\$ —	\$ —	\$ 40.4	\$ 5.4	\$ 40.4	\$ 5.4

(1) Primarily consists of collateralized loan obligations backed by secured corporate loans.

Of the total amounts, Principal Life's consolidated portfolio represented \$14,059.5 million in available-for-sale fixed maturities with gross unrealized losses of \$239.7 million. Of the available-for-sale fixed maturities within Principal Life's consolidated portfolio in a gross unrealized loss position, 97% were investment grade (rated AAA through BBB-) with an average price of 98 (carrying value/amortized cost) as of December 31, 2017. Gross unrealized losses in our fixed maturities portfolio decreased during the year ended December 31, 2017, primarily due to tightening of credit spreads.

For those securities that had been in a continuous unrealized loss position for less than twelve months, Principal Life's consolidated portfolio held 1,209 securities with a carrying value of \$9,360.9 million and unrealized losses of \$75.4 million reflecting an average price of 99 as of December 31, 2017. Of this portfolio, 98% was investment grade (rated AAA through BBB-) as of December 31, 2017, with associated unrealized losses of \$71.5 million. The unrealized losses on these securities can primarily be attributed to changes in market interest rates and changes in credit spreads since the securities were acquired.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****4. Investments — (continued)**

For those securities that had been in a continuous unrealized loss position greater than or equal to twelve months, Principal Life's consolidated portfolio held 775 securities with a carrying value of \$4,698.6 million and unrealized losses of \$164.3 million. The average credit rating of this portfolio was AA– with an average price of 97 as of December 31, 2017. Of the \$164.3 million in unrealized losses, the corporate sector accounts for \$52.2 million in unrealized losses with an average price of 97 and an average credit rating of BBB+. The remaining unrealized losses also include \$38.1 million within the commercial mortgage-backed securities sector with an average price of 96 and an average credit rating of AA+. The unrealized losses on these securities can primarily be attributed to changes in market interest rates and changes in credit spreads since the securities were acquired.

Because we expected to recover our amortized cost, it was not our intent to sell the fixed maturity available-for-sale securities with unrealized losses and it was not more likely than not that we would be required to sell these securities before recovery of the amortized cost, which may be at maturity, we did not consider these investments to be other-than-temporarily impaired as of December 31, 2017.

Net Unrealized Gains and Losses on Available-for-Sale Securities and Derivative Instruments

The net unrealized gains and losses on investments in available-for-sale securities, the noncredit component of impairment losses on fixed maturities available-for-sale and the net unrealized gains and losses on derivative instruments in cash flow hedge relationships are reported as separate components of stockholders' equity. The cumulative amount of net unrealized gains and losses on available-for-sale securities and derivative instruments in cash flow hedge relationships net of adjustments related to DAC and related actuarial balances, policyholder liabilities, noncontrolling interest and applicable income taxes was as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Net unrealized gains on fixed maturities, available-for-sale (1)	\$ 400.8	\$ 2,898.5
Noncredit component of impairment losses on fixed maturities, available-for-sale	(53.6)	(93.3)
Net unrealized gains on equity securities, available-for-sale	—	2.0
Net unrealized gains on derivative instruments	118.5	108.2
Adjustments for assumed changes in amortization patterns	30.3	(150.6)
Adjustments for assumed changes in policyholder liabilities	(293.7)	(645.5)
Net unrealized gains on other investments and noncontrolling interest adjustments	68.8	31.3
Provision for deferred income taxes	(63.8)	(695.5)
Net unrealized gains on available-for-sale securities and derivative instruments	<u>\$ 207.3</u>	<u>\$ 1,455.1</u>

(1) Excludes net unrealized gains (losses) on fixed maturities, available-for-sale included in fair value hedging relationships.

Mortgage Loans

Mortgage loans consist of commercial and residential mortgage loans. We evaluate risks inherent in our commercial mortgage loans in two classes: (1) brick and mortar property loans, including mezzanine loans, where we analyze the property's rent payments as support for the loan, and (2) credit tenant loans ("CTL"), where we rely on the credit analysis of the tenant for the repayment of the loan. We evaluate risks inherent in our residential mortgage loan portfolio in two classes: (1) first lien mortgages and (2) home equity mortgages. The carrying amount of our mortgage loan portfolio was as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Commercial mortgage loans	\$ 13,996.3	\$ 12,897.3
Residential mortgage loans	1,368.0	1,285.9
Total amortized cost	<u>15,364.3</u>	<u>14,183.2</u>
Valuation allowance	(27.4)	(32.7)
Total carrying value	<u>\$ 15,336.9</u>	<u>\$ 14,150.5</u>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

We periodically purchase mortgage loans as well as sell mortgage loans we have originated. Mortgage loans purchased and sold were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	(in millions)		
Commercial mortgage loans:			
Purchased	\$ 127.5	\$ 144.2	\$ 163.3
Sold	2.2	28.9	0.3
Residential mortgage loans:			
Purchased	394.2	346.0	290.3
Sold	80.3	152.2	48.4

Our commercial mortgage loan portfolio consists primarily of non-recourse, fixed rate mortgages on stabilized properties. Our commercial mortgage loan portfolio is diversified by geographic region and specific collateral property type as follows:

	December 31, 2018		December 31, 2017	
	Amortized cost	Percent of total	Amortized cost	Percent of total
	(\$ in millions)			
Geographic distribution				
New England	\$ 640.6	4.6%	\$ 591.8	4.6%
Middle Atlantic	3,927.3	28.0	3,623.0	28.1
East North Central	592.8	4.2	675.2	5.2
West North Central	205.8	1.5	174.9	1.4
South Atlantic	2,206.5	15.8	2,325.3	18.0
East South Central	422.5	3.0	375.7	2.9
West South Central	1,213.8	8.7	1,072.4	8.3
Mountain	968.6	6.9	1,039.3	8.1
Pacific	3,567.6	25.5	2,849.0	22.1
International	250.8	1.8	170.7	1.3
Total	<u>\$ 13,996.3</u>	<u>100.0%</u>	<u>\$ 12,897.3</u>	<u>100.0%</u>
Property type distribution				
Office	\$ 4,625.8	33.0%	\$ 4,700.2	36.4%
Retail	2,305.6	16.5	2,612.7	20.3
Industrial	2,312.9	16.5	1,881.5	14.6
Apartments	4,250.5	30.4	3,301.9	25.6
Hotel	99.8	0.7	130.9	1.0
Mixed use/other	401.7	2.9	270.1	2.1
Total	<u>\$ 13,996.3</u>	<u>100.0%</u>	<u>\$ 12,897.3</u>	<u>100.0%</u>

Our residential mortgage loan portfolio is composed of first lien mortgages with an amortized cost of \$1,352.9 million and \$1,262.9 million and home equity mortgages with an amortized cost of \$15.1 million and \$23.0 million as of December 31, 2018 and December 31, 2017, respectively. Our first lien loans are concentrated in Chile and the United States. Our residential home equity mortgages are concentrated in the United States and are generally second lien mortgages comprised of closed-end loans and lines of credit.

Mortgage Loan Credit Monitoring

Commercial Credit Risk Profile Based on Internal Rating

We actively monitor and manage our commercial mortgage loan portfolio. All commercial mortgage loans are analyzed regularly and substantially all are internally rated, based on a proprietary risk rating cash flow model, in order to monitor the financial quality of these assets. The model stresses expected cash flows at various levels and at different points in time depending on the durability of the income stream, which includes our assessment of factors such as location (macro and micro markets), tenant quality and lease expirations. Our internal rating analysis presents expected

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

losses in terms of an S&P Global ("S&P") bond equivalent rating. As the credit risk for commercial mortgage loans increases, we adjust our internal ratings downward with loans in the category "B+ and below" having the highest risk for credit loss. Internal ratings on commercial mortgage loans are updated at least annually and potentially more often for certain loans with material changes in collateral value or occupancy and for loans on an internal "watch list".

Commercial mortgage loans that require more frequent and detailed attention are identified and placed on an internal "watch list". Among the criteria that would indicate a potential problem are significant negative changes in ratios of loan to value or contract rents to debt service, major tenant vacancies or bankruptcies, borrower sponsorship problems, late payments, delinquent taxes and loan relief/restructuring requests.

The amortized cost of our commercial mortgage loan portfolio by credit risk, as determined by our internal rating system expressed in terms of an S&P bond equivalent rating, was as follows:

	December 31, 2018		
	Brick and mortar	CTL	Total
	<i>(in millions)</i>		
A- and above	\$ 12,735.2	\$ 84.3	\$ 12,819.5
BBB+ thru BBB-	977.3	105.7	1,083.0
BB+ thru BB-	88.3	—	88.3
B+ and below	5.5	—	5.5
Total	\$ 13,806.3	\$ 190.0	\$ 13,996.3

	December 31, 2017		
	Brick and mortar	CTL	Total
	<i>(in millions)</i>		
A- and above	\$ 11,636.2	\$ 129.0	\$ 11,765.2
BBB+ thru BBB-	934.1	102.4	1,036.5
BB+ thru BB-	89.0	—	89.0
B+ and below	6.3	0.3	6.6
Total	\$ 12,665.6	\$ 231.7	\$ 12,897.3

Residential Credit Risk Profile Based on Performance Status

Our residential mortgage loan portfolio is monitored based on performance of the loans. Monitoring on a residential mortgage loan increases when the loan is delinquent or earlier if there is an indication of potential impairment. We define non-performing residential mortgage loans as loans 90 days or greater delinquent or on non-accrual status.

The amortized cost of our performing and non-performing residential mortgage loans was as follows:

	December 31, 2018		
	First liens	Home equity	Total
	<i>(in millions)</i>		
Performing	\$ 1,340.3	\$ 10.8	\$ 1,351.1
Non-performing	12.6	4.3	16.9
Total	\$ 1,352.9	\$ 15.1	\$ 1,368.0

	December 31, 2017		
	First liens	Home equity	Total
	<i>(in millions)</i>		
Performing	\$ 1,251.4	\$ 16.5	\$ 1,267.9
Non-performing	11.5	6.5	18.0
Total	\$ 1,262.9	\$ 23.0	\$ 1,285.9

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

Non-Accrual Mortgage Loans

Commercial and residential mortgage loans are placed on non-accrual status if we have concern regarding the collectability of future payments or if a loan has matured without being paid off or extended. Factors considered may include conversations with the borrower, loss of major tenant, bankruptcy of borrower or major tenant, decreased property cash flow for commercial mortgage loans or number of days past due and other circumstances for residential mortgage loans. Based on an assessment as to the collectability of the principal, a determination is made to apply any payments received either against the principal, against the valuation allowance or according to the contractual terms of the loan. When a loan is placed on non-accrual status, the accrued unpaid interest receivable is reversed against interest income. Accrual of interest resumes after factors resulting in doubts about collectability have improved. Residential first lien mortgages in the Chilean market are carried on accrual for a longer period of delinquency than domestic loans, as assessment of collectability is based on the nature of the loans and collection practices in that market.

The amortized cost of mortgage loans on non-accrual status was as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Residential:		
First liens	\$ 10.1	\$ 3.9
Home equity	4.3	6.5
Total	<u>\$ 14.4</u>	<u>\$ 10.4</u>

The aging of our mortgage loans, based on amortized cost, was as follows:

	<u>December 31, 2018</u>						Recorded investment 90 days or more and accruing
	30 - 59 days past due	60 - 89 days past due	90 days or more past due	Total past due	Current	Total loans	
	<i>(in millions)</i>						
Commercial-brick and mortar	\$ —	\$ —	\$ —	\$ —	\$ 13,806.3	\$ 13,806.3	\$ —
Commercial-CTL	—	—	—	—	190.0	190.0	—
Residential-first liens	44.3	8.4	12.1	64.8	1,288.1	1,352.9	2.5
Residential-home equity	0.8	0.6	0.4	1.8	13.3	15.1	—
Total	<u>\$ 45.1</u>	<u>\$ 9.0</u>	<u>\$ 12.5</u>	<u>\$ 66.6</u>	<u>\$ 15,297.7</u>	<u>\$ 15,364.3</u>	<u>\$ 2.5</u>

	<u>December 31, 2017</u>						Recorded investment 90 days or more and accruing
	30 - 59 days past due	60 - 89 days past due	90 days or more past due	Total past due	Current	Total loans	
	<i>(in millions)</i>						
Commercial-brick and mortar	\$ —	\$ —	\$ —	\$ —	\$ 12,665.6	\$ 12,665.6	\$ —
Commercial-CTL	—	—	—	—	231.7	231.7	—
Residential-first liens	37.2	7.9	10.6	55.7	1,207.2	1,262.9	7.6
Residential-home equity	1.9	0.7	0.8	3.4	19.6	23.0	—
Total	<u>\$ 39.1</u>	<u>\$ 8.6</u>	<u>\$ 11.4</u>	<u>\$ 59.1</u>	<u>\$ 14,124.1</u>	<u>\$ 14,183.2</u>	<u>\$ 7.6</u>

Mortgage Loan Valuation Allowance

We establish a valuation allowance to provide for the risk of credit losses inherent in our portfolio. The valuation allowance includes loan specific reserves for loans that are deemed to be impaired as well as reserves for pools of loans with similar risk characteristics where a property risk or market specific risk has not been identified but for which we anticipate a loss may occur. Mortgage loans on real estate are considered impaired when, based on current information and events, it is probable we will be unable to collect all amounts due according to contractual terms of the loan agreement. When we determine a loan is impaired, a valuation allowance is established equal to the difference between the carrying amount of the mortgage loan and the estimated value reduced by the cost to sell. Estimated value is based on

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

either the present value of the expected future cash flows discounted at the loan's effective interest rate, the loan's observable market price or fair value of the collateral. Subsequent changes in the estimated value are reflected in the valuation allowance. Amounts on loans deemed to be uncollectible are charged off and removed from the valuation allowance. The change in the valuation allowance provision is included in net realized capital gains (losses) on our consolidated statements of operations.

The valuation allowance is maintained at a level believed adequate by management to absorb estimated probable credit losses. Management's periodic evaluation and assessment of the valuation allowance adequacy is based on known and inherent risks in the portfolio, adverse situations that may affect a borrower's ability to repay, the estimated value of the underlying collateral, composition of the loan portfolio, portfolio delinquency information, underwriting standards, peer group information, current economic conditions, loss experience and other relevant factors. The evaluation of our impaired loan component is subjective, as it requires the estimation of timing and amount of future cash flows expected to be received on impaired loans.

We review our commercial mortgage loan portfolio and analyze the need for a valuation allowance for any loan that is delinquent for 60 days or more, in process of foreclosure, restructured, on the internal "watch list" or that currently has a valuation allowance. In addition to establishing allowance levels for specifically identified impaired commercial mortgage loans, management determines an allowance for all other loans in the portfolio for which historical experience and current economic conditions indicate certain losses exist. These loans are segregated by risk rating level with an estimated loss ratio applied against each risk rating level. The loss ratio is generally based upon historical loss experience for each risk rating level as adjusted for certain current environmental factors management believes to be relevant.

For our residential mortgage loan portfolio, we separate the loans into several homogeneous pools, each of which consist of loans of a similar nature including but not limited to loans similar in collateral, term and structure and loan purpose or type. We evaluate loan pools based on aggregated risk ratings, estimated specific loss potential in the different classes of credits, and historical loss experience by pool type. We adjust these quantitative factors for qualitative factors of present conditions. Qualitative factors include items such as economic and business conditions, changes in the portfolio, value of underlying collateral and concentrations. Residential mortgage loan pools exclude loans that have been restructured or impaired, as those loans are evaluated individually.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

A rollforward of our valuation allowance and ending balances of the allowance and loan balance by basis of impairment method was as follows:

	<u>Commercial</u>	<u>Residential</u>	<u>Total</u>
	<i>(in millions)</i>		
For the year ended December 31, 2018			
Beginning balance	\$ 25.8	\$ 6.9	\$ 32.7
Provision	(1.5)	(4.5)	(6.0)
Charge-offs	—	(2.4)	(2.4)
Recoveries	—	3.1	3.1
Ending balance	<u>\$ 24.3</u>	<u>\$ 3.1</u>	<u>\$ 27.4</u>
Allowance ending balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 1.4	\$ 1.4
Collectively evaluated for impairment	24.3	1.7	26.0
Allowance ending balance	<u>\$ 24.3</u>	<u>\$ 3.1</u>	<u>\$ 27.4</u>
Loan balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 9.2	\$ 9.2
Collectively evaluated for impairment	13,996.3	1,358.8	15,355.1
Loan ending balance	<u>\$ 13,996.3</u>	<u>\$ 1,368.0</u>	<u>\$ 15,364.3</u>
For the year ended December 31, 2017			
Beginning balance	\$ 27.4	\$ 17.5	\$ 44.9
Provision	(1.6)	(10.4)	(12.0)
Charge-offs	—	(5.1)	(5.1)
Recoveries	—	4.9	4.9
Ending balance	<u>\$ 25.8</u>	<u>\$ 6.9</u>	<u>\$ 32.7</u>
Allowance ending balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 4.5	\$ 4.5
Collectively evaluated for impairment	25.8	2.4	28.2
Allowance ending balance	<u>\$ 25.8</u>	<u>\$ 6.9</u>	<u>\$ 32.7</u>
Loan balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 12.5	\$ 12.5
Collectively evaluated for impairment	12,897.3	1,273.4	14,170.7
Loan ending balance	<u>\$ 12,897.3</u>	<u>\$ 1,285.9</u>	<u>\$ 14,183.2</u>
For the year ended December 31, 2016			
Beginning balance	\$ 27.5	\$ 24.1	\$ 51.6
Provision	1.4	(5.6)	(4.2)
Charge-offs	(1.5)	(4.6)	(6.1)
Recoveries	—	3.6	3.6
Ending balance	<u>\$ 27.4</u>	<u>\$ 17.5</u>	<u>\$ 44.9</u>
Allowance ending balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 5.9	\$ 5.9
Collectively evaluated for impairment	27.4	11.6	39.0
Allowance ending balance	<u>\$ 27.4</u>	<u>\$ 17.5</u>	<u>\$ 44.9</u>
Loan balance by basis of impairment method:			
Individually evaluated for impairment	\$ —	\$ 19.2	\$ 19.2
Collectively evaluated for impairment	12,055.2	1,200.7	13,255.9
Loan ending balance	<u>\$ 12,055.2</u>	<u>\$ 1,219.9</u>	<u>\$ 13,275.1</u>

Impaired Mortgage Loans

Impaired mortgage loans are loans with a related specific valuation allowance, loans whose carrying amount has been reduced to the expected collectible amount because the impairment has been considered other than temporary or a loan modification has been classified as a troubled debt restructuring ("TDR"). Based on an assessment as to the collectability of the principal, a determination is made to apply any payments received either against the principal, against the valuation allowance or according to the contractual terms of the loan. Our recorded investment in and unpaid

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
4. Investments — (continued)

principal balance of impaired loans along with the related loan specific allowance for losses, if any, and the average recorded investment and interest income recognized during the time the loans were impaired were as follows:

	December 31, 2018		
	Recorded investment	Unpaid principal balance	Related allowance
	<i>(in millions)</i>		
With no related allowance recorded:			
Residential-first liens	\$ 1.6	\$ 1.6	\$ —
With an allowance recorded:			
Residential-first liens	2.2	2.2	—
Residential-home equity	5.4	6.5	1.4
Total:			
Residential	<u>\$ 9.2</u>	<u>\$ 10.3</u>	<u>\$ 1.4</u>

	December 31, 2017		
	Recorded investment	Unpaid principal balance	Related allowance
	<i>(in millions)</i>		
With no related allowance recorded:			
Residential-first liens	\$ 0.9	\$ 0.8	\$ —
With an allowance recorded:			
Residential-first liens	4.0	4.0	0.2
Residential-home equity	7.6	8.6	4.3
Total:			
Residential	<u>\$ 12.5</u>	<u>\$ 13.4</u>	<u>\$ 4.5</u>

	Average recorded investment	Interest income recognized
	<i>(in millions)</i>	
For the year ended December 31, 2018		
With no related allowance recorded:		
Residential-first liens	\$ 1.3	\$ —
With an allowance recorded:		
Residential-first liens	3.2	0.1
Residential-home equity	6.5	0.2
Total:		
Residential	<u>\$ 11.0</u>	<u>\$ 0.3</u>
For the year ended December 31, 2017		
With no related allowance recorded:		
Residential-first liens	\$ 1.2	\$ —
With an allowance recorded:		
Residential-first liens	4.4	0.2
Residential-home equity	10.3	0.2
Total:		
Residential	<u>\$ 15.9</u>	<u>\$ 0.4</u>
For the year ended December 31, 2016		
With no related allowance recorded:		
Residential-first liens	\$ 2.6	\$ —
With an allowance recorded:		
Residential-first liens	5.3	0.1
Residential-home equity	13.4	0.3
Total:		
Residential	<u>\$ 21.3</u>	<u>\$ 0.4</u>

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****4. Investments — (continued)****Mortgage Loan Modifications**

Our commercial and residential mortgage loan portfolios can include loans that have been modified. We assess loan modifications on a case-by-case basis to evaluate whether a TDR has occurred. When we have commercial mortgage loan TDRs, they are modified to delay or reduce principal payments and to reduce or delay interest payments. The commercial mortgage loan modifications result in delayed cash receipts, a decrease in interest income and loan rates that are considered below market. When we have residential mortgage loan TDRs, they include modifications of interest-only payment periods, delays in principal balloon payments and interest rate reductions. Residential mortgage loan modifications result in delayed or decreased cash receipts and a decrease in interest income.

When we have commercial mortgage loan TDRs, they are reserved for in the mortgage loan valuation allowance at the estimated fair value of the underlying collateral reduced by the cost to sell.

When we have residential mortgage loan TDRs, they are specifically reserved for in the mortgage loan valuation allowance if losses result from the modification. Residential mortgage loans that have defaulted or have been discharged through bankruptcy are reduced to the expected collectible amount.

We did not have any significant loans that were modified and met the criteria of a TDR in 2018, 2017 and 2016.

Real Estate

Depreciation expense on invested real estate was \$54.1 million, \$55.9 million and \$52.0 million in 2018, 2017 and 2016, respectively. Accumulated depreciation was \$487.2 million and \$451.6 million as of December 31, 2018 and 2017, respectively.

Real Estate Transactions

In September 2017, we entered an exchange agreement to exit certain real estate joint ventures. The transaction resulted in us transferring our interest in certain real estate properties in exchange for our joint venture partner's interest in certain other real estate properties. In a subsequent transaction we sold certain of these real estate properties to a third party. Both transactions closed in September 2017.

In September 2017, we recognized a net pre-tax realized capital gain of \$690.9 million (net after-tax realized capital gain of \$410.8 million) as a result of these transactions. The following consolidated statement of financial position line items were most significantly impacted by the transactions, each having a net increase as of September 30, 2017, (in millions):

Real estate	\$ 293.4
Other investments	222.4
Cash and cash equivalents	219.6
Long-term debt	49.4
Income taxes currently payable	179.1
Deferred income taxes	101.0

Other Investments

Other investments include interests in unconsolidated entities, domestic and international joint ventures and partnerships and properties owned jointly with venture partners and operated by the partners. Such investments are generally accounted for using the equity method. In applying the equity method, we record our share of income or loss

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****4. Investments — (continued)**

reported by the equity investees in net investment income. Summarized financial information for these unconsolidated entities was as follows:

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Total assets	\$ 135,355.6	\$ 136,171.8
Total liabilities	80,265.4	83,815.2
Total equity	<u>\$ 55,090.2</u>	<u>\$ 52,356.6</u>
Net investment in unconsolidated entities (1)	\$ 1,723.7	\$ 1,616.2

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Total revenues	\$ 15,389.4	\$ 15,020.9	\$ 14,376.4
Net income	6,542.1	4,530.1	3,455.3
Our share of net income of unconsolidated entities (1)	<u>161.6</u>	<u>232.7</u>	<u>232.7</u>

(1) Our most significant equity investee is Brasilprev Seguros e Previdencia, a co-managed joint venture in Brazil.

In addition, other investments include \$830.7 million and \$937.4 million of direct financing leases as of December 31, 2018 and 2017, respectively. Our Chilean operations enter into private placement contracts for commercial, industrial and office space properties whereby our Chilean operations purchase the real estate and/or building from the seller-lessee but then lease the property back to the seller-lessee. Ownership of the property is transferred to the lessee by the end of the lease term. The direct financing lease receivables are carried at amortized cost. We actively monitor and manage our direct financing leases. All leases within the portfolio are analyzed regularly and internally rated, based on financial condition, payment history and loan-to-value.

Furthermore, other investments include \$502.6 million and \$0.0 million of cash surrender value of company owned life insurance as of December 31, 2018 and 2017, respectively.

Derivative assets are carried at fair value and reported as a component of other investments. See Note 5, Derivative Financial Instruments, for further details. Certain sponsored investment funds are also carried at fair value and reported as a component of other investments, with changes in fair value included in net realized capital gains (losses) on our consolidated statements of operations. The fair value of these funds was \$719.7 million and \$396.4 million as of December 31, 2018 and 2017, respectively.

Securities Posted as Collateral

As of December 31, 2018 and 2017, we posted \$3,761.3 million and \$2,807.4 million, respectively, in commercial mortgage loans and residential first lien mortgages to satisfy collateral requirements associated with our obligation under funding agreements with Federal Home Loan Bank of Des Moines ("FHLB Des Moines"). In addition, as of December 31, 2018 and 2017, we posted \$2,402.5 million and \$2,486.2 million, respectively, in fixed maturities, available-for-sale and trading securities to satisfy collateral requirements primarily associated with a reinsurance arrangement, our derivative credit support annex (collateral) agreements, Futures Commission Merchant ("FCM") agreements, a lending arrangement and our obligation under funding agreements with FHLB Des Moines. Since we did not relinquish ownership rights on these instruments, they are reported as mortgage loans, fixed maturities, available-for-sale and fixed maturities, trading, respectively, on our consolidated statements of financial position. Of the securities posted as collateral, as of December 31, 2018 and 2017, \$124.2 million and \$173.3 million, respectively, could be sold or repledged by the secured party.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

4. Investments — (continued)

Balance Sheet Offsetting

Financial assets subject to master netting agreements or similar agreements were as follows:

	Gross amount of recognized assets (1)	Gross amounts not offset in the consolidated statements of financial position		Net amount
		Financial instruments (2)	Collateral received	
<i>(in millions)</i>				
December 31, 2018				
Derivative assets	\$ 186.3	\$ (70.5)	\$ (108.1)	\$ 7.7
Reverse repurchase agreements	53.0	—	(53.0)	—
Total	\$ 239.3	\$ (70.5)	\$ (161.1)	\$ 7.7
December 31, 2017				
Derivative assets	\$ 287.0	\$ (116.3)	\$ (149.5)	\$ 21.2
Reverse repurchase agreements	17.6	—	(17.6)	—
Total	\$ 304.6	\$ (116.3)	\$ (167.1)	\$ 21.2

- (1) The gross amount of recognized derivative and reverse repurchase agreement assets are reported with other investments and cash and cash equivalents, respectively, on the consolidated statements of financial position. The above excludes \$7.7 million and \$17.0 million of derivative assets as of December 31, 2018 and December 31, 2017, respectively, that are not subject to master netting agreements or similar agreements. The gross amounts of derivative and reverse repurchase agreement assets are not netted against offsetting liabilities for presentation on the consolidated statements of financial position.
- (2) Represents amount of offsetting derivative liabilities that are subject to an enforceable master netting agreement or similar agreement that are not netted against the gross derivative assets for presentation on the consolidated statements of financial position.

Financial liabilities subject to master netting agreements or similar agreements were as follows:

	Gross amount of recognized liabilities (1)	Gross amounts not offset in the consolidated statements of financial position		Net amount
		Financial instruments (2)	Collateral pledged	
<i>(in millions)</i>				
December 31, 2018				
Derivative liabilities	\$ 153.4	\$ (70.5)	\$ (52.3)	\$ 30.6
Total	\$ 153.4	\$ (70.5)	\$ (52.3)	\$ 30.6
December 31, 2017				
Derivative liabilities	\$ 272.5	\$ (116.3)	\$ (143.5)	\$ 12.7
Total	\$ 272.5	\$ (116.3)	\$ (143.5)	\$ 12.7

- (1) The gross amount of recognized derivative liabilities is reported with other liabilities on the consolidated statements of financial position. The above excludes \$138.3 million and \$415.6 million of derivative liabilities as of December 31, 2018 and December 31, 2017, respectively, which are primarily embedded derivatives that are not subject to master netting agreements or similar agreements. The gross amounts of derivative liabilities are not netted against offsetting assets for presentation on the consolidated statements of financial position.
- (2) Represents amount of offsetting derivative assets that are subject to an enforceable master netting agreement or similar agreement that are not netted against the gross derivative liabilities for presentation on the consolidated statements of financial position.

The financial instruments that are subject to master netting agreements or similar agreements include right of setoff provisions. Derivative instruments include provisions to setoff positions covered under the agreements with the same counterparties and provisions to setoff positions outside of the agreements with the same counterparties in the event of default by one of the parties. Derivative instruments also include collateral or variation margin provisions, which are generally settled daily with each counterparty. See Note 5, Derivative Financial Instruments, for further details.

Repurchase and reverse repurchase agreements include provisions to setoff other repurchase and reverse repurchase balances with the same counterparty. Repurchase and reverse repurchase agreements also include collateral provisions

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****4. Investments — (continued)**

with the counterparties. For reverse repurchase agreements we require the counterparties to pledge collateral with a value greater than the amount of cash transferred. We have the right but do not sell or repledge collateral received in reverse repurchase agreements. Repurchase agreements are structured as secured borrowings for all counterparties. We pledge fixed maturities available-for-sale, which the counterparties have the right to sell or repledge. Interest incurred on repurchase agreements is reported as part of operating expenses on the consolidated statements of operations. Net proceeds related to repurchase agreements are reported as a component of financing activities on the consolidated statements of cash flows. We did not have any outstanding repurchase agreements as of December 31, 2018 and December 31, 2017.

5. Derivative Financial Instruments

Derivatives are generally used to hedge or reduce exposure to market risks associated with assets held or expected to be purchased or sold and liabilities incurred or expected to be incurred. Derivatives are used to change the characteristics of our asset/liability mix consistent with our risk management activities. Derivatives are also used in asset replication strategies.

Types of Derivative Instruments***Interest Rate Contracts***

Interest rate risk is the risk we will incur economic losses due to adverse changes in interest rates. Sources of interest rate risk include the difference between the maturity and interest rate changes of assets with the liabilities they support, timing differences between the pricing of liabilities and the purchase or procurement of assets and changing cash flow profiles from original projections due to prepayment options embedded within asset and liability contracts. We use various derivatives to manage our exposure to fluctuations in interest rates.

Interest rate swaps are contracts in which we agree with other parties to exchange, at specified intervals, the difference between fixed rate and/or floating rate interest amounts based upon designated market rates or rate indices and an agreed upon notional principal amount. Generally, no cash is exchanged at the outset of the contract and no principal payments are made by any party. Cash is paid or received based on the terms of the swap. We use interest rate swaps primarily to more closely match the interest rate characteristics of assets and liabilities and to mitigate the risks arising from timing mismatches between assets and liabilities (including duration mismatches). We also use interest rate swaps to hedge against changes in the value of assets we anticipate acquiring and other anticipated transactions and commitments. Interest rate swaps are used to hedge against changes in the value of the guaranteed minimum withdrawal benefit ("GMWB") liability. The GMWB rider on our variable annuity products provides for guaranteed minimum withdrawal benefits regardless of the actual performance of various equity and/or fixed income funds available with the product.

Interest rate options, including interest rate caps and interest rate floors, which can be combined to form interest rate collars, are contracts that entitle the purchaser to pay or receive the amounts, if any, by which a specified market rate exceeds a cap strike interest rate, or falls below a floor strike interest rate, respectively, at specified dates. We use interest rate options to manage prepayment risks in our assets and minimum guaranteed interest rates and lapse risks in our liabilities.

A swaption is an option to enter into an interest rate swap at a future date. We have purchased swaptions to offset or modify existing exposures. Swaptions provide us the benefit of the agreed-upon strike rate if the market rates for liabilities are higher, with the flexibility to enter into the current market rate swap if the market rates for liabilities are lower. Swaptions not only hedge against the downside risk, but also allow us to take advantage of any upside benefits.

In exchange-traded futures transactions, we agree to purchase or sell a specified number of contracts, the values of which are determined by the values of designated classes of securities, and to post variation margin on a daily basis in an amount equal to the difference in the daily market values of those contracts. We enter into exchange-traded futures with regulated futures commissions merchants who are members of a trading exchange. We have used exchange-traded futures to reduce market risks from changes in interest rates and to alter mismatches between the assets in a portfolio and the liabilities supported by those assets.

Foreign Exchange Contracts

Foreign currency risk is the risk we will incur economic losses due to adverse fluctuations in foreign currency exchange rates. This risk arises from foreign currency-denominated funding agreements issued to nonqualified

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****5. Derivative Financial Instruments — (continued)**

institutional investors in the international market, foreign currency-denominated fixed maturity and equity securities, and our international operations, including expected cash flows and potential acquisition and divestiture activity. We use various derivatives to manage our exposure to fluctuations in foreign currency exchange rates.

Currency swaps are contracts in which we agree with other parties to exchange, at specified intervals, a series of principal and interest payments in one currency for that of another currency. Generally, the principal amount of each currency is exchanged at the beginning and termination of the currency swap by each party. The interest payments are primarily fixed-to-fixed rate; however, they may also be fixed-to-floating rate or floating-to-fixed rate. These transactions are entered into pursuant to master agreements that provide for a single net payment to be made by one counterparty for payments made in the same currency at each due date. We use currency swaps to reduce market risks from changes in currency exchange rates with respect to investments or liabilities denominated in foreign currencies that we either hold or intend to acquire or sell.

Currency forwards are contracts in which we agree with other parties to deliver or receive a specified amount of an identified currency at a specified future date. Typically, the price is agreed upon at the time of the contract and payment for such a contract is made at the specified future date. We use currency forwards to reduce market risks from changes in currency exchange rates with respect to investments or liabilities denominated in foreign currencies that we either hold or intend to acquire or sell. We sometimes use currency forwards to hedge the currency risk associated with a business combination or to hedge certain net equity investments in or expected cash flows from our foreign operations.

Currency options are contracts that give the holder the right, but not the obligation to buy or sell a specified amount of the identified currency within a limited period of time at a contracted price. The contracts are net settled in cash, based on the differential in the current foreign exchange rate and the strike price. Purchased and sold options can be combined to form a foreign currency collar where we receive a payment if the foreign exchange rate is below the purchased option strike price and make a payment if the foreign exchange rate is above the sold option strike price. We use currency options to hedge expected cash flows from our foreign operations.

Equity Contracts

Equity risk is the risk that we will incur economic losses due to adverse fluctuations in common stock prices. We use various derivatives to manage our exposure to equity risk, which arises from products in which the interest we credit is tied to an external equity index as well as products subject to minimum contractual guarantees.

We purchase equity call spreads ("option collars") to hedge the equity participation rates promised to contractholders in conjunction with our fixed deferred annuity and universal life products that credit interest based on changes in an external equity index. We use exchange-traded futures and equity put options to hedge against changes in the value of the GMWB liability related to the GMWB rider on our variable annuity product. The premium associated with certain options is paid quarterly over the life of the option contract.

Credit Contracts

Credit risk relates to the uncertainty associated with the continued ability of a given obligor to make timely payments of principal and interest. We use credit default swaps to enhance the return on our investment portfolio by providing comparable exposure to fixed income securities that might not be available in the primary market. They are also used to hedge credit exposures in our investment portfolio. Credit derivatives are used to sell or buy credit protection on an identified name or names on an unfunded or synthetic basis in return for receiving or paying a quarterly premium. The premium generally corresponds to a referenced name's credit spread at the time the agreement is executed. In cases where we sell protection, we also buy a quality cash bond to match against the credit default swap, thereby entering into a synthetic transaction replicating a cash security. When selling protection, if there is an event of default by the referenced name, as defined by the agreement, we are obligated to pay the counterparty the referenced amount of the contract and receive in return the referenced security in a principal amount equal to the notional value of the credit default swap.

Total return swaps are contracts in which we agree with other parties to exchange, at specified intervals, an amount determined by the difference between the previous price and the current price of a reference asset based upon an agreed upon notional principal amount plus an additional amount determined by the financing spread. We have used futures traded on an exchange ("exchange-traded") and total return swaps referencing equity indices to hedge our portfolio from potential credit losses related to systemic events.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****5. Derivative Financial Instruments — (continued)****Other Contracts**

Embedded Derivatives. We purchase or issue certain financial instruments or products that contain a derivative instrument that is embedded in the financial instrument or product. When it is determined that the embedded derivative possesses economic characteristics that are not clearly or closely related to the economic characteristics of the host contract and a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is bifurcated from the host instrument for measurement purposes. The embedded derivative, which is reported with the host instrument in the consolidated statements of financial position, is carried at fair value.

We had investment contracts in which the return was tied to a leveraged inflation index. We economically hedged the risk associated with these investment contracts.

We offer group annuity contracts that have guaranteed separate accounts as an investment option. We also offer funds with embedded fixed-rate guarantees as investment options in our defined contribution plans in Hong Kong.

We have structured investment relationships with trusts we have determined to be VIEs, which are consolidated in our financial statements. The notes issued by these trusts include obligations to deliver an underlying security to residual interest holders and the obligations contain an embedded derivative of the forecasted transaction to deliver the underlying security.

We have fixed deferred annuities and universal life products that credit interest based on changes in an external equity index. We also have certain variable annuity products with a GMWB rider, which allows the customer to make withdrawals of a specified annual amount, either for a fixed number of years or for the lifetime of the customer, even if the account value is fully exhausted. Declines in the equity markets may increase our exposure to benefits under contracts with the GMWB. We economically hedge the exposure in these contracts, as previously explained.

Exposure

Our risk of loss is typically limited to the fair value of our derivative instruments and not to the notional or contractual amounts of these derivatives. We are also exposed to credit losses in the event of nonperformance of the counterparties. Our current credit exposure is limited to the value of derivatives that have become favorable to us. This credit risk is minimized by purchasing such agreements from financial institutions with high credit ratings and by establishing and monitoring exposure limits. We also utilize various credit enhancements, including collateral and credit triggers to reduce the credit exposure to our derivative instruments.

Derivatives may be exchange-traded or they may be privately negotiated contracts, which are usually referred to as over-the-counter ("OTC") derivatives. Certain of our OTC derivatives are cleared and settled through central clearing counterparties ("OTC cleared"), while others are bilateral contracts between two counterparties ("bilateral OTC"). Our derivative transactions are generally documented under International Swaps and Derivatives Association, Inc. ("ISDA") Master Agreements. Management believes that such agreements provide for legally enforceable set-off and close-out netting of exposures to specific counterparties. Under such agreements, in connection with an early termination of a transaction, we are permitted to set off our receivable from a counterparty against our payables to the same counterparty arising out of all included transactions. For reporting purposes, we do not offset fair value amounts of bilateral OTC derivatives for the right to reclaim cash collateral or the obligation to return cash collateral against fair value amounts recognized for derivative instruments executed with the same counterparties under master netting agreements. OTC cleared derivatives have variation margin that is legally characterized as settlement of the derivative exposure, which reduces their fair value in the consolidated statements of financial position.

We posted \$106.6 million and \$195.0 million in cash and securities under collateral arrangements as of December 31, 2018 and December 31, 2017, respectively, to satisfy collateral and initial margin requirements associated with our derivative credit support agreements and FCM agreements.

Certain of our derivative instruments contain provisions that require us to maintain an investment grade rating from each of the major credit rating agencies on our debt. If the ratings on our debt were to fall below investment grade, it would be in violation of these provisions and the counterparties to the derivative instruments could request immediate payment or demand immediate and ongoing full overnight collateralization on derivative instruments in net liability positions. The aggregate fair value, inclusive of accrued interest, of all derivative instruments with credit-risk-related contingent features that were in a liability position without regard to netting under derivative credit support annex agreements as of December 31, 2018 and December 31, 2017, was \$109.7 million and \$280.4 million, respectively. Cleared derivatives have contingent features that require us to post excess margin as required by the FCM. The terms surrounding excess margin vary by FCM agreement. With respect to derivatives containing collateral triggers, we posted

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

5. Derivative Financial Instruments — (continued)

collateral and initial margin of \$106.6 million and \$195.0 million as of December 31, 2018 and December 31, 2017, respectively, in the normal course of business, which reflects netting under derivative agreements. If the credit-risk-related contingent features underlying these agreements were triggered on December 31, 2018, we would be required to post an additional \$28.9 million of collateral to our counterparties.

As of December 31, 2018 and December 31, 2017, we had received \$79.5 million and \$124.7 million, respectively, of cash collateral associated with our derivative credit support annex agreements and FCM agreements, for which we recorded a corresponding liability reflecting our obligation to return the collateral.

Notional amounts are used to express the extent of our involvement in derivative transactions and represent a standard measurement of the volume of our derivative activity. Notional amounts represent those amounts used to calculate contractual flows to be exchanged and are not paid or received, except for contracts such as currency swaps. Credit exposure represents the gross amount owed to us under derivative contracts as of the valuation date. The notional amounts and credit exposure of our derivative financial instruments by type were as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Notional amounts of derivative instruments		
Interest rate contracts:		
Interest rate swaps	\$ 34,393.7	\$ 23,543.4
Interest rate options	1,126.9	657.0
Interest rate futures	260.0	236.5
Swaptions	—	14.0
Foreign exchange contracts:		
Currency swaps	898.6	888.6
Currency forwards	863.6	915.5
Currency options	525.2	583.6
Equity contracts:		
Equity options	1,522.5	3,649.4
Equity futures	491.7	357.8
Credit contracts:		
Credit default swaps	420.0	668.5
Other contracts:		
Embedded derivatives	9,452.3	9,402.3
Total notional amounts at end of period	<u>\$ 49,954.5</u>	<u>\$ 40,916.6</u>
Credit exposure of derivative instruments		
Interest rate contracts:		
Interest rate swaps	\$ 95.4	\$ 163.4
Interest rate options	16.3	19.8
Foreign exchange contracts:		
Currency swaps	71.2	79.1
Currency forwards	2.8	24.3
Currency options	1.9	1.6
Equity contracts:		
Equity options	7.7	18.2
Credit contracts:		
Credit default swaps	2.4	5.0
Total gross credit exposure	<u>197.7</u>	<u>311.4</u>
Less: collateral received	<u>122.9</u>	<u>159.7</u>
Net credit exposure	<u>\$ 74.8</u>	<u>\$ 151.7</u>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

5. Derivative Financial Instruments — (continued)

The fair value of our derivative instruments classified as assets and liabilities was as follows:

	Derivative assets (1)		Derivative liabilities (2)	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
	<i>(in millions)</i>			
Derivatives designated as hedging instruments				
Interest rate contracts	\$ —	\$ —	\$ 16.1	\$ 22.9
Foreign exchange contracts	37.6	39.6	13.5	36.3
Total derivatives designated as hedging instruments	<u>\$ 37.6</u>	<u>\$ 39.6</u>	<u>\$ 29.6</u>	<u>\$ 59.2</u>
Derivatives not designated as hedging instruments				
Interest rate contracts	\$ 108.0	\$ 175.2	\$ 22.6	\$ 33.6
Foreign exchange contracts	38.4	66.2	72.9	26.3
Equity contracts	7.7	18.2	27.6	154.1
Credit contracts	2.3	4.8	4.4	1.5
Other contracts	—	—	134.6	413.4
Total derivatives not designated as hedging instruments	<u>156.4</u>	<u>264.4</u>	<u>262.1</u>	<u>628.9</u>
Total derivative instruments	<u>\$ 194.0</u>	<u>\$ 304.0</u>	<u>\$ 291.7</u>	<u>\$ 688.1</u>

(1) The fair value of derivative assets is reported with other investments on the consolidated statements of financial position.

(2) The fair value of derivative liabilities is reported with other liabilities on the consolidated statements of financial position, with the exception of certain embedded derivative liabilities. Embedded derivatives with a net liability fair value of \$45.2 million and \$160.3 million as of December 31, 2018 and December 31, 2017, respectively, are reported with contractholder funds on the consolidated statements of financial position.

Credit Derivatives Sold

When we sell credit protection, we are exposed to the underlying credit risk similar to purchasing a fixed maturity security instrument. Our credit derivative contracts sold reference a single name or reference security (referred to as "single name credit default swaps"). These instruments are either referenced in an OTC credit derivative transaction or embedded within an investment structure that has been fully consolidated into our financial statements.

These credit derivative transactions are subject to events of default defined within the terms of the contract, which normally consist of bankruptcy, failure to pay, or modified restructuring of the reference entity and/or issue. If a default event occurs for a reference name or security, we are obligated to pay the counterparty an amount equal to the notional amount of the credit derivative transaction. As a result, our maximum future payment is equal to the notional amount of the credit derivative. In certain cases, we also may have purchased credit protection with identical underlyings to certain of our sold protection transactions. As of December 31, 2018 and December 31, 2017, we did not purchase credit protection relating to our sold protection transactions. In certain circumstances, our potential loss could also be reduced by any amount recovered in the default proceedings of the underlying credit name.

The following tables show our credit default swap protection sold by types of contract, types of referenced/underlying asset class and external agency rating for the underlying reference security. The maximum future payments are undiscounted and have not been reduced by the effect of any offsetting transactions, collateral or recourse features described above.

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
5. Derivative Financial Instruments — (continued)

	December 31, 2018			
	Notional amount	Fair value	Maximum future payments	Weighted average expected life (in years)
	<i>(in millions)</i>			
Single name credit default swaps				
Corporate debt				
AAA	\$ 10.0	\$ 0.1	\$ 10.0	0.7
A	15.0	0.1	15.0	1.0
BBB	190.0	0.4	190.0	1.7
BB	10.0	—	10.0	0.5
CCC	15.0	(3.6)	15.0	0.9
Government/municipalities				
AA	20.0	0.2	20.0	1.0
Sovereign				
A	10.0	0.1	10.0	0.7
BBB	55.0	0.4	55.0	1.3
Total credit default swap protection sold	<u>\$ 325.0</u>	<u>\$ (2.3)</u>	<u>\$ 325.0</u>	<u>1.4</u>

	December 31, 2017			
	Notional amount	Fair value	Maximum future payments	Weighted average expected life (in years)
	<i>(in millions)</i>			
Single name credit default swaps				
Corporate debt				
AAA	\$ 30.0	\$ 0.3	\$ 30.0	1.2
AA	30.0	0.1	30.0	0.5
A	105.0	0.5	105.0	0.6
BBB	255.0	2.5	255.0	1.3
B	20.0	(0.5)	20.0	1.8
Government/municipalities				
AA	20.0	0.3	20.0	2.0
Sovereign				
A	10.0	0.2	10.0	1.7
BBB	55.0	0.8	55.0	2.3
Total credit default swap protection sold	<u>\$ 525.0</u>	<u>\$ 4.2</u>	<u>\$ 525.0</u>	<u>1.3</u>

Fair Value Hedges

We use fixed-to-floating rate interest rate swaps to more closely align the interest rate characteristics of certain assets and have used them to align the interest rate characteristics of certain liabilities. In general, these swaps are used in asset and liability management to modify duration, which is a measure of sensitivity to interest rate changes.

The net interest effect of interest rate swap transactions for derivatives in fair value hedges is recorded as an adjustment to income or expense of the underlying hedged item in our consolidated statements of operations.

Hedge effectiveness testing for fair value relationships is performed utilizing a regression analysis approach for both prospective and retrospective evaluations. This regression analysis will consider multiple data points for the assessment that the hedge continues to be highly effective in achieving offsetting changes in fair value. In certain periods, the comparison of the change in value of the derivative and the change in the value of the hedged item may not be offsetting at a specific period in time due to small movements in value. However, any amounts recorded as fair value hedges have shown to be highly effective in achieving offsetting changes in fair value both for present and future periods.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

5. Derivative Financial Instruments — (continued)

The following table shows the effect of derivatives in fair value hedging relationships and the related hedged items on the consolidated statements of operations. All gains or losses on derivatives were included in the assessment of hedge effectiveness.

Derivatives in fair value hedging relationships	Amount of gain (loss) recognized in net income on derivatives for the year ended December 31, (1)			Hedged items in fair value hedging relationships	Amount of gain (loss) recognized in net income on related hedged item for the year ended December 31, (1)		
	2018	2017	2016		2018	2017	2016
	(in millions)				(in millions)		
Interest rate contracts	\$ 6.2	\$ 4.7	\$ 19.5	Fixed maturities, available-for-sale	\$ (6.6)	\$ (5.2)	\$ (19.2)
Interest rate contracts	—	(0.6)	(0.9)	Investment contracts	—	0.6	1.0
Total	\$ 6.2	\$ 4.1	\$ 18.6	Total	\$ (6.6)	\$ (4.6)	\$ (18.2)

- (1) The gain (loss) on both derivatives and hedged items in fair value relationships is reported in net realized capital gains (losses) on the consolidated statements of operations. The net amount represents the ineffective portion of our fair value hedges.

The following table shows the periodic settlements on interest rate contracts and foreign exchange contracts in fair value hedging relationships.

Hedged item	Amount of gain (loss) for the year ended December 31,		
	2018	2017	2016
	(in millions)		
Fixed maturities, available-for-sale (1)	\$ (5.9)	\$ (10.3)	\$ (41.9)
Investment contracts (2)	—	0.9	2.6

- (1) Reported in net investment income on the consolidated statements of operations.
(2) Reported in benefits, claims and settlement expenses on the consolidated statements of operations.

Cash Flow Hedges

We utilized floating-to-fixed rate interest rate swaps to eliminate the variability in cash flows of recognized financial assets and liabilities and forecasted transactions.

We enter into currency exchange swap agreements to convert both principal and interest payments of certain foreign denominated assets and liabilities into U.S. dollar denominated fixed-rate instruments to eliminate the exposure to future currency volatility on those items.

The net interest effect of interest rate swap and currency swap transactions for derivatives in cash flow hedges is recorded as an adjustment to income or expense of the underlying hedged item in our consolidated statements of operations.

The maximum length of time we are hedging our exposure to the variability in future cash flows for forecasted transactions, excluding those related to the payments of variable interest on existing financial assets and liabilities, is 1.5 years. As of December 31, 2018, we had \$0.0 million of net gains reported in AOCI on the consolidated statements of financial position related to active hedges of forecasted transactions. If a hedged forecasted transaction is no longer probable of occurring, cash flow hedge accounting is discontinued. If it is probable that the hedged forecasted transaction will not occur, the deferred gain or loss is immediately reclassified from AOCI into net income. We reclassified \$0.3 million and \$0.2 million from AOCI into net realized capital gains (losses) as a result of the determination that hedged cash flows were probable of not occurring during 2018 and 2017, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

5. Derivative Financial Instruments — (continued)

The following table shows the effect of derivatives in cash flow hedging relationships on the consolidated statements of operations and consolidated statements of financial position. All gains or losses on derivatives were included in the assessment of hedge effectiveness.

Derivatives in cash flow hedging relationships	Related hedged item	Amount of gain (loss) recognized in AOCI on derivatives (effective portion) for the year ended December 31,			Location of gain (loss) reclassified from AOCI into net income (effective portion)	Amount of gain (loss) reclassified from AOCI on derivatives (effective portion) for the year ended December 31,		
		2018	2017	2016		2018	2017	2016
		<i>(in millions)</i>				<i>(in millions)</i>		
Interest rate contracts	Fixed maturities, available-for-sale	\$ 36.7	\$ (51.7)	\$ (33.1)	Net investment income	\$ 20.9	\$ 21.0	\$ 19.3
					Net realized capital gains (losses)	17.0	(0.6)	11.2
Interest rate contracts	Investment contracts	—	—	1.6	Benefits, claims and settlement expenses	(0.1)	—	—
Interest rate contracts	Debt	—	—	—	Operating expense	(10.7)	(10.8)	(9.2)
Foreign exchange contracts	Fixed maturities, available-for-sale	20.8	(68.5)	4.0	Net realized capital gains	12.7	22.0	6.4
Foreign exchange contracts	Investment contracts	(0.1)	—	6.0	Benefits, claims and settlement expenses	—	—	—
Total		\$ 57.4	\$ (120.2)	\$ (21.5)	Total	\$ 39.8	\$ 31.6	\$ 27.7

The following table shows the periodic settlements on interest rate contracts and foreign exchange contracts in cash flow hedging relationships.

Hedged item	Amount of gain (loss) for the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Fixed maturities, available-for-sale (1)	\$ 6.0	\$ 7.1	\$ 5.8
Investment contracts (2)	(0.1)	(1.1)	(15.7)

(1) Reported in net investment income on the consolidated statements of operations.

(2) Reported in benefits, claims and settlement expenses on the consolidated statements of operations.

The ineffective portion of our cash flow hedges is reported in net realized capital gains (losses) on the consolidated statements of operations. The net gain (loss) resulting from the ineffective portion of derivatives in cash flow hedging relationships was insignificant for the years ended December 31, 2018, 2017 and 2016.

We expect to reclassify net gains of \$20.8 million from AOCI into net income in the next 12 months, which includes both net deferred gains on discontinued hedges and net losses on periodic settlements of active hedges. Actual amounts may vary from this amount as a result of market conditions.

Derivatives Not Designated as Hedging Instruments

Our use of futures, certain swaptions and swaps, option collars, options and forwards are effective from an economic standpoint, but they have not been designated as hedges for financial reporting purposes. As such, periodic changes in the market value of these instruments, which includes mark-to-market gains and losses as well as periodic and final settlements, primarily flow directly into net realized capital gains (losses) on the consolidated statements of operations.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****5. Derivative Financial Instruments — (continued)**

The following table shows the effect of derivatives not designated as hedging instruments, including fair value changes of embedded derivatives that have been bifurcated from the host contract, on the consolidated statements of operations.

Derivatives not designated as hedging instruments	Amount of gain (loss) recognized in net income on derivatives for the year ended December 31,		
	2018	2017	2016
		(in millions)	
Interest rate contracts	\$ (27.6)	\$ (26.9)	\$ 243.3
Foreign exchange contracts	(64.2)	59.4	20.1
Equity contracts	(31.0)	(181.3)	(123.5)
Credit contracts	(1.6)	(15.9)	37.4
Other contracts	108.5	11.5	(4.8)
Total	<u>\$ (15.9)</u>	<u>\$ (153.2)</u>	<u>\$ 172.5</u>

6. Closed Block

In connection with the 1998 MIHC formation, Principal Life formed a Closed Block to provide reasonable assurance to policyholders included therein that, after the formation of the MIHC, assets would be available to maintain dividends in aggregate in accordance with the 1997 policy dividend scales, if the experience underlying such scales continued. Assets of Principal Life were allocated to the Closed Block in an amount that produces cash flows which, together with anticipated revenue from policies and contracts included in the Closed Block, were expected to be sufficient to support the Closed Block policies. This includes, but is not limited to, provisions for payment of claims, certain expenses, charges and taxes, and to provide for continuation of policy and contract dividends in aggregate in accordance with the 1997 dividend scales, if the experience underlying such scales continues, and to allow for appropriate adjustments in such scales, if such experience changes. Due to adjustable life policies being included in the Closed Block, the Closed Block is charged with amounts necessary to properly fund for certain adjustments, such as face amount and premium increases, that are made to these policies after the Closed Block inception date. These amounts are referred to as Funding Adjustment Charges and are treated as capital transfers from the Closed Block.

Assets allocated to the Closed Block inure solely to the benefit of the holders of policies included in the Closed Block. Closed Block assets and liabilities are carried on the same basis as other similar assets and liabilities. Principal Life will continue to pay guaranteed benefits under all policies, including the policies within the Closed Block, in accordance with their terms. If the assets allocated to the Closed Block, the investment cash flows from those assets and the revenues from the policies included in the Closed Block, including investment income thereon, prove to be insufficient to pay the benefits guaranteed under the policies included in the Closed Block, Principal Life will be required to make such payments from its general funds. No additional policies were added to the Closed Block, nor was the Closed Block affected in any other way, as a result of the demutualization.

A policyholder dividend obligation ("PDO") is required to be established for earnings in the Closed Block that are not available to stockholders. A model of the Closed Block was established to produce the pattern of expected earnings, assets and liabilities in the Closed Block, adjusted to eliminate the impact of related amounts in AOCI. These projections are utilized to determine ratios that will allow us to compare actual cumulative earnings to expected cumulative earnings.

If actual cumulative earnings of the Closed Block are greater than the expected cumulative earnings of the Closed Block, only the expected cumulative earnings will be recognized in income with the excess recorded as a PDO. This PDO represents undistributed accumulated earnings that will be paid to Closed Block policyholders as dividends unless offset by future performance of the Closed Block that is less favorable than originally expected. If actual cumulative performance is less favorable than expected, only actual earnings will be recognized in income. As of both December 31, 2018 and 2017, cumulative actual earnings were less than cumulative expected earnings. As of December 31, 2018 and 2017, cumulative net unrealized gains were greater than expected, resulting in the recognition of a PDO of \$36.6 million and \$161.7 million, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

6. Closed Block — (continued)

Closed Block liabilities and assets designated to the Closed Block were as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Closed Block liabilities		
Future policy benefits and claims	\$ 3,732.5	\$ 3,899.7
Other policyholder funds	6.5	7.0
Policyholder dividends payable	211.3	219.6
Policyholder dividends obligation	36.6	161.7
Other liabilities	9.5	6.9
Total Closed Block liabilities	<u>3,996.4</u>	<u>4,294.9</u>
Assets designated to the Closed Block		
Fixed maturities, available-for-sale	2,176.4	2,304.4
Fixed maturities, trading	2.5	2.9
Equity securities	1.0	1.3
Mortgage loans	678.5	766.3
Policy loans	510.5	537.1
Other investments	33.8	49.4
Total investments	<u>3,402.7</u>	<u>3,661.4</u>
Cash and cash equivalents	42.1	13.2
Accrued investment income	39.5	41.1
Premiums due and other receivables	10.0	14.4
Deferred tax asset	30.5	34.6
Total assets designated to the Closed Block	<u>3,524.8</u>	<u>3,764.7</u>
Excess of Closed Block liabilities over assets designated to the Closed Block	471.6	530.2
Amounts included in accumulated other comprehensive income	5.2	1.9
Maximum future earnings to be recognized from Closed Block assets and liabilities	<u>\$ 476.8</u>	<u>\$ 532.1</u>

Closed Block revenues and expenses were as follows:

	For the year ended		
	December 31,		
	<u>2018</u>	<u>2017</u>	<u>2016</u>
	<i>(in millions)</i>		
Revenues			
Premiums and other considerations	\$ 244.2	\$ 275.6	\$ 298.0
Net investment income	160.5	169.4	181.6
Net realized capital losses	(3.4)	(5.8)	(1.0)
Total revenues	<u>401.3</u>	<u>439.2</u>	<u>478.6</u>
Expenses			
Benefits, claims and settlement expenses	211.5	245.6	267.1
Dividends to policyholders	120.9	122.0	153.5
Operating expenses	3.3	3.5	3.6
Total expenses	<u>335.7</u>	<u>371.1</u>	<u>424.2</u>
Closed Block revenues, net of Closed Block expenses, before income taxes	65.6	68.1	54.4
Income taxes	11.1	46.0	17.1
Closed Block revenues, net of Closed Block expenses and income taxes	54.5	22.1	37.3
Funding adjustments	(0.5)	(4.4)	9.3
Closed Block revenues, net of Closed Block expenses, income taxes and funding adjustments	<u>\$ 54.0</u>	<u>\$ 17.7</u>	<u>\$ 46.6</u>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

6. Closed Block — (continued)

The change in maximum future earnings of the Closed Block was as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Beginning of year	\$ 532.1	\$ 549.8	\$ 596.4
Effects of implementation of accounting changes (1)	1.3	—	—
End of year	<u>476.8</u>	<u>532.1</u>	<u>549.8</u>
Change in maximum future earnings	<u>\$ (54.0)</u>	<u>\$ (17.7)</u>	<u>\$ (46.6)</u>

(1) Includes the effects of implementation of accounting changes related to equity investments and the reclassification of certain tax effects.

Principal Life charges the Closed Block with U.S. federal income taxes, payroll taxes, state and local premium taxes and other state or local taxes, licenses and fees as provided in the plan of reorganization.

7. Deferred Acquisition Costs

Acquisition costs deferred and amortized were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Balance at beginning of year	\$ 3,540.7	\$ 3,380.2	\$ 3,276.1
Costs deferred during the year	414.9	421.8	402.3
Amortized to expense during the year (1)	(253.5)	(234.6)	(285.1)
Adjustment related to unrealized (gains) losses on available-for-sale securities and derivative instruments	184.9	(26.7)	(13.1)
Other (2)	(193.5)	—	—
Balance at end of year	<u>\$ 3,693.5</u>	<u>\$ 3,540.7</u>	<u>\$ 3,380.2</u>

(1) Includes adjustments for revisions to estimated gross profits.

(2) Reflects the impact of capitalized costs written off or transferred from DAC to a contract cost asset as a result of adopting revenue recognition guidance. See Note 1, Nature of Operations and Significant Accounting Policies, under the caption "Adoption of Revenue Recognition Guidance" for further details.

8. Insurance Liabilities

Contractholder Funds

Major components of contractholder funds in the consolidated statements of financial position were as follows:

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Liabilities for investment contracts:		
Liabilities for individual annuities	\$ 12,913.9	\$ 11,336.2
GICs	10,321.7	9,969.1
Funding agreements	7,729.5	8,106.5
Other investment contracts	1,652.2	1,751.5
Total liabilities for investment contracts	<u>32,617.3</u>	<u>31,163.3</u>
Universal life and other reserves	7,082.4	6,919.2
Total contractholder funds	<u>\$ 39,699.7</u>	<u>\$ 38,082.5</u>

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****8. Insurance Liabilities — (continued)**

Our GICs and funding agreements contain provisions limiting or prohibiting early surrenders, which typically include penalties for early surrenders, minimum notice requirements or, in the case of funding agreements with survivor options, minimum pre-death holding periods and specific maximum amounts.

Funding agreements include those issued directly to nonqualified institutional investors and those issued to the FHLB Des Moines under their membership funding programs. As of December 31, 2018 and 2017, \$3,512.2 million and \$3,256.7 million, respectively, of liabilities were outstanding with respect to issuances under the program with FHLB Des Moines. In addition, we have five separate programs where the funding agreements have been issued directly or indirectly to unconsolidated special purpose entities. Claims for principal and interest under funding agreements are afforded equal priority to claims of life insurance and annuity policyholders under insolvency provisions of Iowa Insurance Laws.

Principal Life was authorized to issue up to \$4.0 billion of funding agreements under a program established in 1998 to support the prospective issuance of medium term notes by an unaffiliated entity in non-U.S. markets. As of December 31, 2018 and 2017, \$109.6 million and \$111.1 million, respectively, of liabilities were outstanding with respect to the issuance outstanding under this program. Principal Life was also authorized to issue up to Euro 4.0 billion (approximately USD\$5.3 billion) of funding agreements under a program established in 2006 to support the prospective issuance of medium term notes by an unaffiliated entity in non-U.S. markets. The unaffiliated entity is an unconsolidated special purpose entity. As of December 31, 2018 and 2017, \$114.4 million and \$177.4 million, respectively, of liabilities were outstanding with respect to issuances outstanding under this program. Principal Life does not anticipate any new issuance activity under either of these programs due to the existence of the program established in 2011 described below.

In addition, Principal Life was authorized to issue up to \$7.0 billion of funding agreements under a program established in 2001 to support the prospective issuance of medium term notes by an unaffiliated entity in both domestic and international markets. The unaffiliated entity is an unconsolidated special purpose entity. As of December 31, 2018 and 2017, \$201.6 million and \$201.6 million, respectively, of liabilities were being held with respect to issuances outstanding under this program. Principal Life does not anticipate any new issuance activity under this program, given our December 2005 termination of the dealership agreement for this program and the availability of the program established in 2011 described below.

Additionally, Principal Life was authorized to issue up to \$9.0 billion of funding agreements under a program that was originally established in March 2004 to support the prospective issuance of medium term notes by unaffiliated entities in both domestic and international markets. Under this program, both the notes and the supporting funding agreements were registered with the United States Securities and Exchange Commission ("SEC"). As of December 31, 2018 and 2017, \$26.2 million and \$67.8 million, respectively, of liabilities were being held with respect to issuances outstanding under this program. In contrast with direct funding agreements, GIC issuances and the other three funding agreement-backed medium term note programs described above, Principal Life's payment obligations on each funding agreement issued under this SEC-registered program are guaranteed by PFG. Principal Life does not anticipate any new issuance activity under this program due to the existence of the program established in 2011 described below.

Principal Life was authorized to issue up to \$5.0 billion of funding agreements under a program that was originally established in 2011 to support the prospective issuance of medium term notes by an unaffiliated entity in both domestic and international markets. The unaffiliated entity is an unconsolidated special purpose entity. In June 2015, this program was amended to authorize issuance of up to an additional \$4.0 billion in recognition of the use of nearly all \$5.0 billion of existing issuance authorization. In November 2017, this program was amended to authorize issuance of up to an additional \$4.0 billion. As of December 31, 2018 and 2017, \$3,765.3 million and \$4,291.9 million, respectively, of liabilities were being held with respect to issuances outstanding under this program. Similar to the SEC-registered program, Principal Life's payment obligations on each funding agreement issued under this program are guaranteed by PFG. The program established in 2011 is not registered with the SEC.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

8. Insurance Liabilities — (continued)

Liability for Unpaid Claims

The liability for unpaid claims is reported in future policy benefits and claims within our consolidated statements of financial position. Activity associated with unpaid claims was as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Balance at beginning of year	\$ 2,130.5	\$ 2,001.3	\$ 1,872.2
Less: reinsurance recoverable	375.8	340.3	314.1
Net balance at beginning of year	1,754.7	1,661.0	1,558.1
Incurred:			
Current year	1,268.8	1,196.6	1,103.5
Prior years	0.3	18.2	24.4
Total incurred	1,269.1	1,214.8	1,127.9
Payments:			
Current year	815.7	767.2	701.9
Prior years	359.7	353.9	323.1
Total payments	1,175.4	1,121.1	1,025.0
Net balance at end of year	1,848.4	1,754.7	1,661.0
Plus: reinsurance recoverable	404.3	375.8	340.3
Balance at end of year	\$ 2,252.7	\$ 2,130.5	\$ 2,001.3
Amounts not included in the rollforward above:			
Claim adjustment expense liabilities	\$ 54.6	\$ 50.7	\$ 49.3

Incurred liability adjustments relating to prior years, which affected current operations during 2018, 2017 and 2016, resulted in part from developed claims for prior years being different than were anticipated when the liabilities for unpaid claims were originally estimated. These trends have been considered in establishing the current year liability for unpaid claims.

Short-Duration Contracts

Claims Development

The following tables present undiscounted information about claims development by incurral year, including separate information about incurred claims and paid claims net of reinsurance for the periods indicated. The tables also include information on incurred but not reported claims and the cumulative number of reported claims.

The tables present information for the number of years for which claims incurred typically remain outstanding, but do not exceed ten years. The data is disaggregated into groupings of claims with similar characteristics, such as duration of the claim payment period and average claim amount, and with consideration to the overall size of the groupings. Outstanding liabilities equal total net incurred claims less total net paid claims plus outstanding liabilities for net unpaid claims of prior years.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

8. Insurance Liabilities — (continued)

LTD and Group Life Waiver Claims

	Net incurred claims (1)										Incurred but not reported claims	Cumulative number of reported claims
	December 31,											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
	(\$ in millions)											
Incurral year												
2009	\$ 218.6	\$ 224.4	\$ 224.2	\$ 224.8	\$ 217.7	\$ 214.1	\$ 208.5	\$ 205.8	\$ 205.6	\$ 203.9	\$ 0.7	6,555
2010		184.1	176.7	176.2	172.0	162.7	155.7	154.1	153.4	152.1	0.6	5,649
2011			203.7	192.6	185.4	184.8	178.4	172.3	169.6	167.6	0.1	6,289
2012				217.9	200.0	191.1	189.5	181.8	174.8	173.3	0.1	6,443
2013					219.3	203.3	188.4	190.7	182.3	179.5	0.1	7,047
2014						242.2	231.4	214.4	218.1	206.2	0.1	7,595
2015							231.0	227.2	217.2	215.3	5.1	7,170
2016								229.8	228.4	219.4	7.0	6,144
2017									238.4	239.7	3.1	5,991
2018										239.4	85.4	3,516
Total net incurred claims										\$ 1,996.4		

	Net cumulative paid claims (1)										
	December 31,										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
	(in millions)										
Incurral year											
2009	\$ 13.4	\$ 55.2	\$ 82.6	\$ 101.0	\$ 113.8	\$ 124.6	\$ 133.1	\$ 141.8	\$ 149.8	\$ 156.4	
2010		10.4	46.5	67.1	78.4	85.9	94.2	100.9	107.2	112.1	
2011			11.2	50.0	72.5	85.7	95.4	105.2	112.6	119.3	
2012				13.8	55.1	80.8	93.7	104.6	112.9	120.0	
2013					12.5	55.0	81.4	97.0	106.4	116.4	
2014						16.1	66.0	96.3	111.8	122.3	
2015							16.9	67.0	98.0	114.6	
2016								16.2	70.6	105.6	
2017									17.8	76.5	
2018										20.1	
Total net paid claims										1,063.3	
All outstanding liabilities for unpaid claims prior to 2009 net of reinsurance										237.4	
Total outstanding liabilities for unpaid claims net of reinsurance										\$ 1,170.5	

(1) 2009 - 2017 unaudited.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

8. Insurance Liabilities — (continued)

Dental, Vision, STD, Critical Illness and Accident Claims

	Net incurred claims (1)		Incurred but not reported claims	Cumulative number of reported claims
			December 31,	
	2017	2018	2018	2018
	(\$ in millions)			
Incurral year				
2017	\$ 595.8	\$ 590.6	\$ —	2,786,877
2018		648.3	35.9	2,893,347
Total net incurred claims		\$ 1,238.9		

	Net cumulative paid claims (1)	
	December 31,	
	2017	2018
	(in millions)	
Incurral year		
2017	\$ 542.3	\$ 590.5
2018		589.1
Total net paid claims		1,179.6
All outstanding liabilities for unpaid claims prior to 2017 net of reinsurance		—
Total outstanding liabilities for unpaid claims net of reinsurance		\$ 59.3

(1) 2017 unaudited.

Group Life Claims

	Net incurred claims (1)		Incurred but not reported claims	Cumulative number of reported claims
			December 31,	
	2017	2018	2018	2018
	(\$ in millions)			
Incurral year				
2017	\$ 239.8	\$ 237.6	\$ 0.7	5,618
2018		239.6	22.0	4,735
Total net incurred claims		\$ 477.2		

	Net cumulative paid claims (1)	
	December 31,	
	2017	2018
	(in millions)	
Incurral year		
2017	\$ 195.2	\$ 236.0
2018		193.9
Total net paid claims		429.9
All outstanding liabilities for unpaid claims prior to 2017 net of reinsurance		1.0
Total outstanding liabilities for unpaid claims net of reinsurance		\$ 48.3

(1) 2017 unaudited.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

8. Insurance Liabilities — (continued)

Reconciliation of Unpaid Claims to Liability for Unpaid Claims

Our reconciliation of net outstanding liabilities for unpaid claims of short-duration contracts to the liability for unpaid claims follows:

	December 31, 2018			
	LTD and Group Life Waiver	Dental, Vision, STD, Critical Illness and Accident <i>(in millions)</i>	Group Life	Consolidated
Net outstanding liabilities for unpaid claims	\$ 1,170.5	\$ 59.3	\$ 48.3	\$ 1,278.1
Reconciling items:				
Reinsurance recoverable on unpaid claims	67.2	—	1.4	68.6
Impact of discounting	(217.7)	—	—	(217.7)
Liability for unpaid claims — short-duration contracts	<u>\$ 1,020.0</u>	<u>\$ 59.3</u>	<u>\$ 49.7</u>	<u>1,129.0</u>
Insurance contracts other than short-duration				1,123.7
Liability for unpaid claims				<u>\$ 2,252.7</u>

Claim Duration and Payout

Our historical average percentage of claims paid in each year from incurral was as follows:

Year	December 31, 2018 (1)		
	LTD and Group Life Waiver	Dental, Vision, STD, Critical Illness and Accident	Group Life
1	7.4%	91.8%	81.8%
2	23.6	8.0	17.2
3	14.4		
4	8.0		
5	5.6		
6	5.4		
7	4.3		
8	4.1		
9	3.6		
10	3.2		

(1) Unaudited.

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
8. Insurance Liabilities — (continued)
Discounting

The following table provides the carrying amount of liabilities reported at present value for short-duration contract unpaid claims. We use a range of discount rates to derive the present value of the unpaid claims. The ranges of discount rates as well as the aggregate amount of discount deducted to derive the liabilities for unpaid claims and interest accretion recognized are also disclosed. Interest accretion is included in benefits, claims and settlement expenses within our consolidated statements of operations.

	LTD and Group Life Waiver	Dental, Vision, STD, Critical Illness and Accident	Group Life
	(\$ in millions)		
Carrying amount of liabilities for unpaid claims			
December 31, 2018	\$ 1,020.0	\$ 59.3	\$ 49.7
December 31, 2017	1,003.2	53.6	47.3
Range of discount rates			
December 31, 2018	3.3-7.0%	— — —%	— — —%
December 31, 2017	3.3-7.0	— — —	— — —
Aggregate amount of discount			
December 31, 2018	\$ 217.7	\$ —	\$ —
December 31, 2017	226.2	—	—
Interest accretion			
For the year ended:			
December 31, 2018	\$ 34.5	\$ —	\$ —
December 31, 2017	35.0	—	—
December 31, 2016	36.3	—	—

9. Debt
Short-Term Debt

The components of short-term debt were as follows:

Obligor/Applicant	Financing structure	Maturity	December 31, 2018	
			Capacity	Short-term debt outstanding
(in millions)				
PFG, Principal Financial Services, Inc. ("PFS"), Principal Life as co-borrowers	Credit facility	November 2023	\$ 600.0	\$ —
PFG, PFS, Principal Life and Principal Financial Services V (UK) LTD as co-borrowers	Credit facility	November 2023	200.0	—
Principal International Chile	Unsecured lines of credit		141.4	42.9
Principal Life	Unsecured line of credit	September 2019	60.0	—
Total			\$ 1,001.4	\$ 42.9

Obligor/Applicant	Financing structure	Maturity	December 31, 2017	
			Capacity	Short-term debt outstanding
(in millions)				
PFG, PFS, Principal Life as co-borrowers	Credit facility	March 2022	\$ 600.0	\$ —
PFG, PFS, Principal Life and Principal Financial Services V (UK) LTD as co-borrowers	Credit facility	March 2022	189.0	—
PFG, PFS, Principal Life and Principal Financial Services V (UK) LTD as co-borrowers	Credit facility	March 2020	11.0	—
Principal International Chile	Unsecured lines of credit		107.3	39.5
Principal Life	Unsecured line of credit	December 2018	45.0	—
Total			\$ 952.3	\$ 39.5

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

9. Debt — (continued)

Our revolving credit facilities are committed and available for general corporate purposes. Our commercial paper programs require 100% back-stop support, of which we had no outstanding balances as of December 31, 2018 and 2017. The weighted-average interest rate on short-term borrowings as of December 31, 2018 and 2017, was 3.9% and 4.7%, respectively.

Long-Term Debt

The components of long-term debt were as follows:

	December 31, 2018		
	Principal	Net unamortized discount, premium and debt issuance costs	Carrying amount
		<i>(in millions)</i>	
3.3% notes payable, due 2022	\$ 300.0	\$ (1.5)	\$ 298.5
3.125% notes payable, due 2023	300.0	(1.2)	298.8
3.4% notes payable, due 2025	400.0	(3.0)	397.0
3.1% notes payable, due 2026	350.0	(2.7)	347.3
6.05% notes payable, due 2036	505.6	(2.6)	503.0
4.625% notes payable, due 2042	300.0	(3.3)	296.7
4.35% notes payable, due 2043	300.0	(3.3)	296.7
4.3% notes payable, due 2046	300.0	(3.3)	296.7
4.7% notes payable, due 2055	400.0	(4.9)	395.1
Non-recourse mortgages and notes payable	128.5	1.3	129.8
Total long-term debt	\$ 3,284.1	\$ (24.5)	\$ 3,259.6

	December 31, 2017		
	Principal	Net unamortized discount, premium and debt issuance costs	Carrying amount
		<i>(in millions)</i>	
3.3% notes payable, due 2022	\$ 300.0	\$ (1.9)	\$ 298.1
3.125% notes payable, due 2023	300.0	(1.5)	298.5
3.4% notes payable, due 2025	400.0	(3.5)	396.5
3.1% notes payable, due 2026	350.0	(3.1)	346.9
6.05% notes payable, due 2036	505.6	(2.7)	502.9
4.625% notes payable, due 2042	300.0	(3.3)	296.7
4.35% notes payable, due 2043	300.0	(3.4)	296.6
4.3% notes payable, due 2046	300.0	(3.4)	296.6
4.7% notes payable, due 2055	400.0	(5.0)	395.0
Non-recourse mortgages and notes payable	49.0	1.6	50.6
Total long-term debt	\$ 3,204.6	\$ (26.2)	\$ 3,178.4

Net discount, premium and issuance costs associated with issuing these notes are amortized to expense over the respective terms using the interest method.

On November 10, 2016, we issued \$650.0 million of senior notes. We issued a \$350.0 million series of notes that bear interest at 3.1% and will mature in 2026 and a \$300.0 million series of notes that bear interest at 4.3% and will mature in 2046. Interest on the notes is payable semi-annually on May 15 and November 15 each year, beginning on May 15, 2017. The proceeds from these notes were used to redeem our notes payable due in 2017 and 2019. We incurred a one-time cost to extinguish this debt before the scheduled maturity date.

On May 7, 2015, we issued \$400.0 million of senior notes. The notes bear interest at 3.4% and will mature in 2025. Interest on the notes is payable semi-annually on May 15 and November 15 each year, beginning on November 15, 2015. In addition, on May 7, 2015, we issued \$400.0 million of junior subordinated notes, which are subordinated to all our senior debt. The notes are callable in 2020 and have a maturity date in 2055. The notes initially bear a fixed rate of

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****9. Debt — (continued)**

interest at 4.7% and convert to a floating rate at the date the notes become callable. Interest on the notes is payable semi-annually on May 15 and November 15 each year. After the call date the notes will bear interest at 3-month LIBOR plus 3.044%, reset quarterly and payable in arrears in February, May, August and November each year. We have the right to defer interest payments on the junior subordinated notes for up to 5 years without resulting in a default, during which time interest will be compounded. The proceeds from these notes were used to redeem preferred stock, with the remainder available for general corporate purposes.

On November 16, 2012, we issued \$900.0 million of senior notes. We issued a \$300.0 million series of notes that bore interest at 1.85% and were to mature in 2017. These notes were repaid following our November 2016 debt issuance. We issued a \$300.0 million series of notes that bear interest at 3.125% and will mature in 2023 and a \$300.0 million series of notes that bear interest at 4.35% and will mature in 2043. Interest on the notes is payable semi-annually on May 15 and November 15 each year, beginning on May 15, 2013. The proceeds were used to fund our acquisition of Cuprum.

On September 5, 2012, we issued \$600.0 million of senior notes. We issued a \$300.0 million series of notes that bear interest at 3.3% and will mature in 2022 and a \$300.0 million series of notes that bear interest at 4.625% and will mature in 2042. Interest on the notes is payable semi-annually on March 15 and September 15 each year, beginning on March 15, 2013. The proceeds were used for the repayment of the \$400.0 million aggregate principal amount of notes due in 2014 and to partially fund our acquisition of Cuprum.

On May 18, 2009, we issued \$750.0 million of senior notes. We issued a \$400.0 million series of notes that bore interest at 7.875% and were to mature on May 15, 2014. These notes were repaid following our November 2012 debt issuance. We issued a \$350.0 million series of notes that bore interest at 8.875% and were to mature on May 15, 2019. These notes were repaid following our November 2016 debt issuance. Interest on the notes was payable semi-annually on May 15 and November 15 each year, beginning on November 15, 2009. The proceeds were primarily used to refinance \$440.9 million of notes that matured on August 15, 2009, with the remaining proceeds being used for general corporate purposes.

On October 16 and December 5, 2006, we issued \$500.0 million and \$100.0 million, respectively, of senior notes. The notes bear interest at a rate of 6.05% per year. Interest on the notes is payable semi-annually on April 15 and October 15 each year and began on April 15, 2007. The notes will mature on October 15, 2036. A portion of the proceeds were used to fund the 2006 acquisition of WM Advisors, Inc., with the remaining proceeds being used for general corporate purposes. A tender offer in the fourth quarter of 2016 resulted in redemption of \$94.4 million of the senior notes. We incurred a one-time cost to extinguish this debt before the scheduled maturity date.

The non-recourse mortgages and notes payable are primarily financings for real estate developments. Outstanding principal balances as of December 31, 2018, ranged from \$3.8 million to \$58.4 million per development with interest rates ranging from 3.9% to 4.8%. Outstanding principal balances as of December 31, 2017, ranged from \$2.8 million to \$16.4 million per development with interest rates ranging from 3.9% to 4.8%. Outstanding debt is secured by the underlying real estate properties, which were reported as real estate on our consolidated statements of financial position with a carrying value of \$307.3 million and \$179.6 million as of December 31, 2018 and 2017, respectively.

As of December 31, 2018, future annual maturities of long-term debt were as follows (in millions):

Year ending December 31:	
2019	\$ 26.7
2020	59.8
2021	—
2022	298.5
2023	298.8
Thereafter	2,575.8
Total future maturities of long-term debt	<u>\$ 3,259.6</u>

Contingent Funding Agreements for Senior Debt Issuance

On March 8, 2018, we entered into two contingent funding agreements: (1) a 10-year contingent funding agreement with a Delaware trust ("2028 Trust") formed by us in connection with the sale by the trust of \$400.0 million pre-capitalized trust securities redeemable February 15, 2028 ("2028 P-Caps") in a Rule 144A private placement and (2) a 30-year contingent funding agreement with a Delaware trust ("2048 Trust") formed by us in connection with the sale by the trust of \$350.0 million pre-capitalized trust securities redeemable February 15, 2048 ("2048 P-Caps") in a Rule 144A private placement. The trusts invested the proceeds from the sale of the 2028 P-Caps and 2048 P-Caps in a

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****9. Debt — (continued)**

portfolio of principal and interest strips of U.S. Treasury securities. The contingent funding agreements provide us a put option that gives us the right to sell at any time: (1) to the 2028 Trust up to \$400.0 million of its 4.111% Senior Notes due 2028 ("4.111% Senior Notes") and (2) to the 2048 Trust up to \$350.0 million of its 4.682% Senior Notes due 2048 ("4.682% Senior Notes") and receive in exchange a corresponding amount of the principal and interest strips of U.S. Treasury securities held by the trusts. The 4.111% Senior Notes and 4.682% Senior Notes will not be issued unless and until a put option is exercised. We agreed to pay a semi-annual put premium of 1.275% and 1.580% per annum on the unexercised portion of the put option to the 2028 Trust and 2048 Trust, respectively, and to reimburse the trusts for expenses. The put option premiums are recorded in operating expenses in the consolidated statements of operations. The 4.111% Senior Notes and 4.682% Senior Notes will be fully, irrevocably and unconditionally guaranteed by PFS. In addition, our obligations under the put option agreement and the expense reimbursement agreement with the trusts are also guaranteed by PFS. The contingent funding agreements with the trusts provide us with a source of liquid assets, which could be used to meet future financial obligations or to provide additional capital.

The put options described above will be exercised automatically in full if we fail to make certain payments to the trusts, including any failure to pay the put option premium or expense reimbursements when due, if such failure is not cured within 30 days, and upon certain bankruptcy events involving us or PFS. We are also required to exercise the put option in full: (i) if we reasonably believe that our consolidated shareholders' equity, calculated in accordance with U.S. GAAP but excluding AOCI and noncontrolling interest, has fallen below \$4.0 billion, subject to adjustment in certain cases; (ii) upon the occurrence of an event of default under the 4.111% Senior Notes and 4.682% Senior Notes; and (iii) if certain events occur relating to each trust's status as an "investment company" under the Investment Company Act of 1940. In addition, we are required to purchase from the trusts any principal and interest strips of U.S. Treasury securities that are due and not paid.

We have an unlimited right to unwind a prior voluntary exercise of the put options by repurchasing all of the 4.111% Senior Notes and 4.682% Senior Notes held by the trusts in exchange for a corresponding amount of principal and interest strips of U.S. Treasury securities. If the put options have been fully exercised, the 4.111% Senior Notes and 4.682% Senior Notes issued may be redeemed by us prior to their maturity at par or, if greater, at a make-whole redemption price, in each case plus accrued and unpaid interest to the date of redemption. The 2028 P-Caps are to be redeemed by the 2028 Trust on February 15, 2028, or upon any early redemption of the 4.111% Senior Notes. The 2048 P-Caps are to be redeemed by the 2048 Trust on February 15, 2048, or upon any early redemption of the 4.682% Senior Notes.

10. Income Taxes**Income Taxes (Benefits)**

Our income taxes (benefit) were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Current income taxes (benefits):			
U.S. federal	\$ (48.9)	\$ (4.4)	\$ 38.6
State	10.3	48.9	(1.9)
Foreign	51.7	38.1	36.6
Tax benefit of operating loss carryforward	(13.5)	(21.5)	(17.5)
Total current income taxes (benefits)	(0.4)	61.1	55.8
Deferred income taxes (benefits):			
U.S. federal	224.3	(208.2)	171.7
State	19.2	42.5	(20.6)
Foreign	(12.4)	32.3	23.0
Total deferred income taxes (benefits)	231.1	(133.4)	174.1
Income taxes (benefits)	<u>\$ 230.7</u>	<u>\$ (72.3)</u>	<u>\$ 229.9</u>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

10. Income Taxes — (continued)

Our income before income taxes was as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Domestic	\$ 1,658.1	\$ 1,848.5	\$ 1,261.4
Foreign	126.3	403.7	330.3
Total income before income taxes	<u>\$ 1,784.4</u>	<u>\$ 2,252.2</u>	<u>\$ 1,591.7</u>

Effective Income Tax Rate

Our provision for income taxes may not have the customary relationship of taxes to income. A reconciliation between the U.S. corporate income tax rate and the effective income tax rate was as follows:

	For the year ended December 31,		
	2018	2017	2016
U.S. corporate income tax rate	21%	35%	35%
Dividends received deduction	(4)	(8)	(10)
Impact of the Tax Cuts and Jobs Act	(3)	(25)	—
Tax credits	(3)	(2)	(2)
Impact of equity method presentation	(1)	(2)	(3)
Interest exclusion from taxable income	(1)	(1)	(1)
State income taxes	1	2	—
Local country permanent tax adjustments	1	—	—
Other	2	(2)	(5)
Effective income tax rate	<u>13%</u>	<u>(3)%</u>	<u>14%</u>

The U.S. tax reform enacted on December 22, 2017, made broad and complex changes to the U.S. Internal Revenue Code applicable to us. The U.S. statutory tax rate was reduced from 35% to 21% effective January 1, 2018. Other provisions of U.S. tax reform effective January 1, 2018, included, but were not limited to: 1) provisions reducing the dividends received deduction; 2) essentially eliminating U.S. federal income taxes on dividends from foreign subsidiaries; 3) retaining an element of current inclusion of certain earnings of controlled foreign corporations; 4) eliminating the corporate alternative minimum tax ("AMT"); and, 5) changing how existing AMT credits are realized.

Unrecognized Tax Benefits

Our changes in unrecognized tax benefits were as follows:

	For the year ended December 31,	
	2018	2017
	<i>(in millions)</i>	
Balance at beginning of period	\$ 194.1	\$ 207.8
Additions based on tax positions related to the current year	0.8	7.2
Additions for tax positions of prior years	43.7	20.2
Reductions for tax positions related to the current year	(10.6)	(3.3)
Reductions for tax positions of prior years	(23.2)	(1.1)
Settlements	(162.7)	(36.7)
Balance at end of period (1)	<u>\$ 42.1</u>	<u>\$ 194.1</u>

- (1) If recognized, \$4.9 million of the above amount of unrecognized tax benefits would reduce our 2018 effective income tax rate. We recognize interest and penalties related to uncertain tax positions in operating expenses within the consolidated statements of operations.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

10. Income Taxes — (continued)

As of December 31, 2018 and 2017, we had recognized \$1.6 million and \$125.5 million of accumulated pre-tax interest and penalties related to unrecognized tax benefits, respectively. We do not believe there is a reasonable possibility the total amount of the unrecognized tax benefits will significantly increase or decrease in the next twelve months considering recent settlements and the status of current and pending Internal Revenue Service ("IRS") examinations. Settlement agreements applicable to tax years 1995 to 2003 were executed in 2018 with the Department of Justice, as previously approved by the Joint Committee of Taxation in August 2017. An IRS 30-day letter on examination of tax years 2009 through 2012, and the start of IRS examination of tax years 2015 through 2017 are expected in 2019.

Net Deferred Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The deferred tax balances as of December 31, 2017, were remeasured as a result of the U.S. tax reform reducing the U.S. statutory tax rate from 35% to 21% effective January 1, 2018. This was because the new rate was applicable to the reversal of cumulative temporary differences thereafter. Our significant components of net deferred income taxes were as follows:

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Deferred income tax assets:		
Insurance liabilities	\$ —	\$ 26.3
Investments, including derivatives	165.6	205.8
Net operating and capital loss carryforwards	80.8	68.3
Tax credit carryforwards	163.3	307.5
Employee benefits	327.3	314.5
Foreign currency translation	28.1	20.4
Other deferred income tax assets	33.8	42.7
Gross deferred income tax assets	798.9	985.5
Valuation allowance	(17.0)	(5.2)
Total deferred income tax assets	<u>781.9</u>	<u>980.3</u>
Deferred income tax liabilities:		
Deferred acquisition costs	(615.8)	(587.0)
Investments, including derivatives	(298.1)	(343.9)
Net unrealized gains on available-for-sale securities	(98.1)	(597.9)
Real estate	(144.9)	(147.1)
Intangible assets	(310.0)	(253.9)
Insurance liabilities	(60.2)	—
Repatriation toll charge	—	(19.8)
Other deferred income tax liabilities	(71.9)	(74.8)
Total deferred income tax liabilities	<u>(1,599.0)</u>	<u>(2,024.4)</u>
Total net deferred income tax liabilities	<u>\$ (817.1)</u>	<u>\$ (1,044.1)</u>

Our net deferred income taxes by jurisdiction were as follows:

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Deferred income tax assets:		
State	\$ 108.2	\$ 10.9
Foreign	33.1	37.5
Net deferred income tax assets	<u>141.3</u>	<u>48.4</u>
Deferred income tax liabilities:		
U.S. federal	(708.2)	(803.9)
Foreign	(250.2)	(288.6)
Net deferred income tax liabilities	<u>(958.4)</u>	<u>(1,092.5)</u>
Total net deferred income tax liabilities	<u>\$ (817.1)</u>	<u>\$ (1,044.1)</u>

In management's judgment, total deferred income tax assets are more likely than not to be realized. Included in the deferred income tax asset are tax carryforwards available to offset future taxable income or income taxes. As of

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****10. Income Taxes — (continued)**

December 31, 2018 and 2017, we had tax credit carryforwards for U.S. federal income tax purposes of \$163.3 million and \$307.5 million, respectively. Alternative minimum, foreign and general business tax credit carryovers were generated during and since the period we utilized net operating losses, primarily attributable to our captive reinsurance companies that joined our consolidated U.S. federal income tax return beginning in 2012 and 2013. The AMT credit carryforwards became refundable in 2018 and will be fully recovered by 2021, and the other tax credits will expire by 2023 if unused. As of December 31, 2018, all accumulated U.S. federal tax credit carryforwards are anticipated to be utilized before expiration; therefore, no valuation allowance has been provided for the related deferred income tax assets.

As of December 31, 2018 and 2017, domestic state net operating loss carryforwards were \$309.6 million and \$366.1 million, respectively, and will expire between 2026 and 2036. As of December 31, 2018 and 2017, foreign net operating loss carryforwards were \$191.3 million and \$125.6 million, respectively, with some expiring in 2019 while others never expire. We maintain valuation allowances by jurisdiction against the deferred income tax assets related to certain of these carryforwards and other items, as utilization of these income tax benefits fail the more likely than not criteria in certain jurisdictions. As of December 31, 2018 and 2017, valuation allowances of \$17.0 million and \$5.2 million, respectively, had been recorded against the income tax benefits associated primarily with foreign net operating loss carryforwards. Adjustments to the valuation allowance will be made if there is a change in management's assessment of the amount of the deferred income tax assets that are more likely than not to be realized. Provisions of the U.S. tax reform did not affect the valuation allowance assessment.

The effects of tax legislation on deferred taxes are recognized in the period of enactment. The primary impact of U.S. tax reform on our 2017 financial results was associated with the effect of reducing the U.S. statutory tax rate from 35% to 21% on our deferred tax balances as of December 31, 2017, and a one-time deemed repatriation tax on certain unremitted earnings of foreign subsidiaries. The effects of the U.S. tax reform were reflected in the 2017 financial statements as determined or as reasonably estimated provisional amounts based on available information subject to interpretation in accordance with the SEC's Staff Accounting Bulletin No. 118 ("SAB 118"). The provisional amounts were primarily associated with estimation of the one-time deemed repatriation tax considering complexity as well as limited and changing technical tax guidance. Further, the provisional amounts also apply in regard to other potential technical interpretations of accounting and taxing authorities related to elements of the U.S. tax reform subject to change. Proposed regulations issued August 1, 2018, clarifying the calculation of the one-time deemed repatriation tax, allowed for final determination of the 2017 provisional amount. The impact of final §965 regulations issued on January 15, 2019, is expected to be immaterial; however, analysis is still being completed. The one-time deemed repatriation tax in 2017 was based on the greater of unremitted earnings and profits from foreign operations of our subsidiaries determined as of November 2, 2017 or December 31, 2017, which amounted to \$43.0 million. The provisional amount of \$43.0 million reported in 2017 was adjusted by \$5.9 million in 2018 to \$48.9 million to reflect the SAB 118 final determination within the required one-year measurement period.

Deferred tax liabilities are recognized for taxes payable on the unremitted earnings from foreign operations of our subsidiaries, except where it is our intention to indefinitely reinvest a portion or all of these undistributed earnings. As of December 31, 2018 and 2017, any applicable taxes that would be due upon repatriation were not provided on approximately \$1,184.0 million and \$1,331.2 million, respectively, of such accumulated but undistributed earnings from operations of foreign subsidiaries. We currently do not intend to repatriate these unremitted earnings because we have several liquidity options to fund our domestic operations and obligations. These options include investing and financing activities, such as issuing debt, as well as cash flow and dividends from domestic operations. As of December 31, 2018 and 2017, it was not practicable to determine the amount of the unrecognized deferred tax liability that would arise if foreign earnings were remitted, due to the complexity of our international holding company structure, and other significant tax attributes and varying state tax laws. Under the participation exemption available on distributions post-U.S. tax reform, taxes on remittances would be limited to foreign currency gains or losses, foreign withholding taxes, and state income taxes, which we would anticipate to be immaterial. As of December 31, 2018, deferred taxes were also not provided on the approximately \$106.2 million of excess book carrying value over tax basis with respect to the original investment in our foreign subsidiaries. A tax liability will be recognized when we no longer plan to indefinitely reinvest a portion or all of these earnings or when we plan to sell a portion or all of our ownership interest.

Other Tax Information

Income tax returns are filed in U.S. federal jurisdiction as well as various states and foreign jurisdictions where we and one or more of our subsidiaries conduct business. Although determined by jurisdiction, with few exceptions our tax uncertainties relate primarily to the U.S. federal jurisdiction. The IRS has completed examination of our consolidated U.S. federal income tax returns for years prior to 2009. A settlement was reached in 2018 with the Department of Justice involving a suit in the Court of Federal Claims, requesting refunds for the years 1995-2003. IRS claims for refund for tax

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****10. Income Taxes — (continued)**

years 2004 through 2018, as a result of the settlement of earlier years with the Department of Justice, are pending. As of December 31, 2018 and 2017, we had \$193.0 million and \$231.8 million, respectively, of current income tax receivables associated with outstanding audit issues reported as other assets in our consolidated statements of financial position.

We filed claims for refund for tax years 2006 through 2008 in 2015 and tax year 2012 in 2016. The IRS commenced audit of our U.S. federal income tax return for 2009 in the fourth quarter of 2011, 2010 in the first quarter of 2012, 2011 in the first quarter of 2013, and 2012 in the third quarter of 2015. The U.S. federal statute of limitations expired for years prior to 2009, except for pending audit issues. The statute was extended until June 30, 2019 for 2009 through 2012, has expired for 2013 and 2014, and remains open for years thereafter. The ultimate settlement of earlier tax years can be adjusted into subsequent tax years regardless of statute status. We do not expect the results of these audits, subsequent related adjustments or developments in other tax areas for all open tax years to significantly change the possible increase in the amount of unrecognized tax benefits, but the outcome of tax reviews is uncertain and unforeseen results can occur.

We believe we have adequate defenses against, or sufficient provisions for, contested issues, but final resolution could take several years while legal remedies are pursued. Consequently, we do not expect the resolved issues from tax years 1995-2003 or those that might arise in tax years subsequent to 2003 to have a material impact on our net income.

11. Employee and Agent Benefits

We have defined benefit pension plans covering substantially all of our U.S. employees and certain agents. Some of these plans provide supplemental pension benefits to employees and agents with salaries and/or pension benefits in excess of the qualified plan limits imposed by U.S. federal tax law. The employees and agents are generally first eligible for the pension plans when they reach age 21. For plan participants employed prior to January 1, 2002, the pension benefits are based on the greater of a final average pay benefit or a cash balance benefit. The final average pay benefit is based on the years of service and generally the employee's or agent's average annual compensation during the last five years of employment. Partial benefit accrual of final average pay benefits is recognized from first eligibility until retirement based on attained service divided by potential service to age 65 with a minimum of 35 years of potential service. The cash balance portion of the plan started on January 1, 2002. An employee's account is credited with an amount based on the employee's salary, age and service. These credits accrue with interest. For plan participants hired on and after January 1, 2002, only the cash balance plan applies. Our policy is to fund the cost of providing pension benefits in the years that the employees and agents are providing service to us. Our funding policy for the qualified defined benefit plan is to contribute an amount annually at least equal to the minimum annual contribution required under the Employee Retirement Income Security Act ("ERISA"), and, generally, not greater than the maximum amount that can be deducted for U.S. federal income tax purposes. Our funding policy for the nonqualified benefit plan is to fund the plan in the years the employees are providing service, taking into account the funded status of the trust. While we designate assets to cover the computed liability of the nonqualified plan, the assets are not included as part of the asset balances presented in this footnote as they do not qualify as plan assets in accordance with U.S. GAAP.

We also provide certain health care, life insurance and long-term care benefits for retired employees. Subsidized retiree health benefits are provided for employees hired prior to January 1, 2002 and who retire prior to January 1, 2020. Employees hired on or after January 1, 2002, or hired prior to January 1, 2002, and retire on or after January 1, 2020, have access to retiree health benefits but it is intended that they pay for the full cost of the coverage. The health care plans are contributory with participants' contributions adjusted annually. The contributions are based on the number of years of service and age at retirement for those hired prior to January 1, 2002, and who retired prior to January 1, 2011. For employees hired prior to January 1, 2002, and who retire on or after January 1, 2011, but prior to January 1, 2020, the contributions are 60% of the expected cost. As part of the substantive plan, the retiree health contributions are assumed to be adjusted in the future as claim levels change. The life insurance plans are contributory for a small group of previously grandfathered participants that have elected supplemental coverage and dependent coverage. The retiree group term life coverage is not subsidized for those who retire on or after January 1, 2020.

Covered employees are first eligible for the health and life postretirement benefits when they reach age 57 and have completed ten years of service with us. Retiree long-term care benefits are provided for employees whose retirement was effective prior to July 1, 2000. Our policy is to fund the cost of providing retiree benefits in the years the employees are providing service, taking into account the funded status of the trust.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

Obligations and Funded Status

The plans' combined funded status, reconciled to amounts recognized in the consolidated statements of financial position, was as follows:

	Pension benefits		Other postretirement benefits	
	December 31,		December 31,	
	2018	2017	2018	2017
	<i>(in millions)</i>			
Change in benefit obligation				
Benefit obligation at beginning of year	\$ (3,383.6)	\$ (3,056.2)	\$ (109.1)	\$ (109.8)
Service cost	(73.0)	(67.1)	(0.1)	(0.1)
Interest cost	(119.5)	(124.4)	(3.5)	(3.9)
Actuarial gain (loss)	220.9	(268.0)	7.9	(1.7)
Participant contributions	—	—	(3.7)	(3.5)
Benefits paid	109.6	109.0	9.7	9.9
Plan amendments	6.4	23.1	—	—
Other	—	—	(0.1)	—
Benefit obligation at end of year	<u>\$ (3,239.2)</u>	<u>\$ (3,383.6)</u>	<u>\$ (98.9)</u>	<u>\$ (109.1)</u>
Change in plan assets				
Fair value of plan assets at beginning of year	\$ 2,542.2	\$ 2,190.8	\$ 696.8	\$ 628.6
Actual return on plan assets	(122.2)	368.3	(47.7)	73.9
Employer contribution	187.8	92.1	0.8	0.7
Participant contributions	—	—	3.7	3.5
Benefits paid	(109.6)	(109.0)	(9.7)	(9.9)
Fair value of plan assets at end of year	<u>\$ 2,498.2</u>	<u>\$ 2,542.2</u>	<u>\$ 643.9</u>	<u>\$ 696.8</u>
Amount recognized in statement of financial position				
Other assets	\$ —	\$ —	\$ 546.9	\$ 589.5
Other liabilities	(741.0)	(841.4)	(1.9)	(1.8)
Total	<u>\$ (741.0)</u>	<u>\$ (841.4)</u>	<u>\$ 545.0</u>	<u>\$ 587.7</u>
Amount recognized in accumulated other comprehensive (income) loss				
Total net actuarial (gain) loss	\$ 673.3	\$ 682.8	\$ 40.2	\$ (34.7)
Prior service benefit	(26.7)	(23.7)	(10.2)	(24.1)
Pre-tax accumulated other comprehensive (income) loss	<u>\$ 646.6</u>	<u>\$ 659.1</u>	<u>\$ 30.0</u>	<u>\$ (58.8)</u>

The accumulated benefit obligation for all defined benefit pension plans was \$3,029.0 million and \$3,139.3 million as of December 31, 2018 and 2017, respectively.

Employer contributions to the pension plans include contributions made directly to the qualified pension plan assets and contributions from corporate assets to pay nonqualified pension benefits. Benefits paid from the pension plans include both qualified and nonqualified plan benefits. Nonqualified pension plan assets are not included as part of the asset balances presented in this footnote. The nonqualified pension plan assets are held in Rabbi trusts for the benefit of all nonqualified plan participants. The assets held in a Rabbi trust are available to satisfy the claims of general creditors only in the event of bankruptcy. Therefore, these assets are fully consolidated in our consolidated statements of financial position and are not reflected in our funded status as they do not qualify as plan assets under U.S. GAAP. The market value of assets held in these trusts was \$348.8 million and \$352.0 million as of December 31, 2018 and 2017, respectively.

Pension Plan Changes and Plan Gains/Losses

On January 1, 2010, benefits under the Principal Pension Plan were frozen for certain participants. The nonqualified plan was amended January 1, 2019, to change the basis for determining lump sums. This gave rise to a total prior service benefit of \$6.4 million as of December 31, 2018. The qualified plan and agent nonqualified plan were amended on December 28, 2017, to freeze final average pay accruals for agents after December 31, 2018, but continue cash balance accruals. This gave rise to a total prior service benefit of \$23.1 million as of December 31, 2017. The amendments also freeze plan eligibility for agents under both the qualified and nonqualified plans.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

For the year ended December 31, 2018, the pension plans had an actuarial gain primarily due to an increase in the discount rate. For the year ended December 31, 2017, the pension plans had an actuarial loss primarily due to a decrease in the discount rate and white collar mortality for the nonqualified plans.

Other Postretirement Plan Changes and Plan Gains/Losses

For the year ended December 31, 2018, the other postretirement benefit plans had an actuarial gain primarily due to an increase in the discount rate and a gain from actual and projected medical claims cost being lower than expected. For the year ended December 31, 2017, the other postretirement benefit plans had an actuarial loss primarily due to a decrease in the discount rate offset by actual and projected medical claims costs being lower than previously expected.

Information for Pension Plans With an Accumulated Benefit Obligation in Excess of Plan Assets

For 2018 and 2017, both the qualified and nonqualified plans had accumulated benefit obligations in excess of plan assets. As noted previously, the nonqualified plans have assets that are deposited in trusts that fail to meet the U.S. GAAP requirements to be included in plan assets; however, these assets are included in our consolidated statements of financial position.

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Projected benefit obligation	\$ 3,239.2	\$ 3,383.6
Accumulated benefit obligation	3,029.0	3,139.3
Fair value of plan assets	2,498.2	2,542.2

Information for Other Postretirement Benefit Plans With an Accumulated Postretirement Benefit Obligation in Excess of Plan Assets

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Accumulated postretirement benefit obligation	\$ 2.1	\$ 2.2
Fair value of plan assets	0.2	0.4

Components of Net Periodic Benefit Cost

	Pension benefits			Other postretirement benefits		
	For the year ended December 31,					
	2018	2017	2016	2018	2017	2016
	<i>(in millions)</i>					
Service cost	\$ 73.0	\$ 67.1	\$ 65.0	\$ 0.1	\$ 0.1	\$ 2.1
Interest cost	119.5	124.4	134.9	3.5	3.9	6.2
Expected return on plan assets	(157.0)	(144.2)	(155.0)	(33.6)	(27.5)	(32.6)
Amortization of prior service benefit	(3.4)	(2.3)	(2.2)	(13.9)	(34.6)	(25.9)
Recognized net actuarial (gain) loss	67.8	68.0	77.0	(1.5)	—	0.2
Net periodic benefit cost (income)	<u>\$ 99.9</u>	<u>\$ 113.0</u>	<u>\$ 119.7</u>	<u>\$ (45.4)</u>	<u>\$ (58.1)</u>	<u>\$ (50.0)</u>

The components of net periodic benefit cost including the service cost component are included in operating expenses on the consolidated statements of operations.

The pension plans' actuarial gains and losses are amortized using a straight-line amortization method over the average remaining service period of plan participants. For the qualified pension plan, gains and losses are amortized

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

without use of the 10% allowable corridor. For the nonqualified pension plans and other postretirement benefit plans, the corridors allowed are used.

	Pension benefits		Other postretirement benefits	
	For the year ended December 31,			
	2018	2017	2018	2017
	<i>(in millions)</i>			
Other changes recognized in accumulated other comprehensive (income) loss				
Net actuarial (gain) loss	\$ 58.3	\$ 43.9	\$ 73.4	\$ (44.7)
Prior service benefit	(6.4)	(23.1)	—	—
Amortization of gain (loss)	(67.8)	(68.0)	1.5	—
Amortization of prior service benefit	3.4	2.3	13.9	34.6
Total recognized in pre-tax accumulated other comprehensive (income) loss	\$ (12.5)	\$ (44.9)	\$ 88.8	\$ (10.1)
Total recognized in net periodic benefit cost and pre-tax accumulated other comprehensive (income) loss	\$ 87.4	\$ 68.1	\$ 43.4	\$ (68.2)

Net actuarial (gain) loss and net prior service cost benefit have been recognized in AOCI.

The estimated net actuarial (gain) loss and prior service cost (benefit) that will be amortized from AOCI into net periodic benefit cost for the pension benefits during the 2019 fiscal year are \$67.3 million and \$(3.7) million, respectively. The estimated net actuarial (gain) loss and prior service cost (benefit) for the postretirement benefits that will be amortized from AOCI into net periodic benefit cost during the 2019 fiscal year are \$0.1 million and \$(1.2) million, respectively.

Assumptions

Weighted-average assumptions used to determine benefit obligations as disclosed under the Obligations and Funded Status section

	Pension benefits	
	For the year ended December 31,	
	2018	2017
Discount rate	4.15%	3.60%
Rate of compensation increase:		
Cash balance benefit	4.94%	4.96%
Traditional benefit	2.73%	2.77%

	Other postretirement benefits	
	For the year ended December 31,	
	2018	2017
Discount rate	3.95%	3.35%
Rate of compensation increase	N/A	2.39%

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

Weighted average assumptions used to determine net periodic benefit cost

	Pension benefits		
	For the year ended		
	December 31,		
	2018	2017	2016
Discount rate	3.60%	4.15%	4.50%
Expected long-term return on plan assets	6.30%	6.70%	7.20%
Rate of compensation increase:			
Cash balance benefit	4.96%	5.02%	5.24%
Traditional benefit	2.77%	2.82%	3.11%

	Other postretirement benefits		
	For the year ended		
	December 31,		
	2018	2017	2016
Discount rate (1)	3.35%	3.75%	3.35%
Expected long-term return on plan assets	4.85%	4.40%	5.24%
Rate of compensation increase	2.39%	2.44%	4.82%

(1) The funded statuses of the other postretirement employee benefit ("OPEB") plans for which subsidies were eliminated in 2016 were remeasured as of October 31, 2016, and a portion of the impact was reflected in the 2016 net periodic postretirement benefit cost. A discount rate of 4.15% was used until the remeasurement date at which time a discount rate of 3.35% was used.

The assumed salary growth rates used to project benefits for the projected benefit obligation are age-based for home office employees. The rate labeled cash balance benefit (relative to employees accruing a cash balance) is the lifecount-weighted average rate of salary growth in the coming year only, as the impact of salary assumption for cash balance benefits are limited to the upcoming year service cost. The rate labeled traditional benefit (relative to employees still accruing a final average pay benefit) is the lifecount-weighted average (at each age) of the single annual growth rate at the age that is equivalent to applying the scale from that age to assumed termination or retirement ages.

For the pension benefits, the discount rate is determined by projecting future benefit payments inherent in the projected benefit obligation and discounting those cash flows using a spot yield curve for high quality corporate bonds. The plans' expected benefit payments are discounted to determine a present value using the yield curve and the discount rate is the level rate that produces the same present value. The expected return on plan assets is the long-term rate we expect to be earned based on the long-term investment policy of the plans and the various classes of invested funds. A weighted average rate was developed based on those overall rates and the target asset allocation of the plans.

For other postretirement benefits, the discount rate is determined by projecting future benefit payments inherent in the accumulated postretirement benefit obligation and discounting those cash flows using a spot yield curve for high quality corporate bonds. The plans' expected benefit payments are discounted to determine a present value using the yield curve and the discount rate is the level rate that produces the same present value. The 4.85% expected long-term return on plan assets for 2018 was based on the weighted average expected long-term asset returns for the medical, life and long-term care plans. The expected long-term rates for the home office medical/life, agent medical/life, long-term care and post-65 medical plans were 4.90%, 4.60%, 3.75% and 4.80%, respectively.

Assumed Health Care Cost Trend Rates

	December 31,	
	2018	2017
Health care cost trend rate assumed for next year under age 65	7.0%	7.0%
Health care cost trend rate assumed for next year age 65 and over	6.0%	7.0%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.5%	4.5%
Year that the rate reaches the ultimate trend rate (under age 65)	2026	2024
Year that the rate reaches the ultimate trend rate (65 and older)	2025	2024

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****11. Employee and Agent Benefits — (continued)**

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	<u>1-percentage point increase</u>	<u>1-percentage point decrease</u>
	<i>(in millions)</i>	
Effect on total of service cost and interest cost components	\$ 0.1	\$ (0.1)
Effect on accumulated postretirement benefit obligation	(1.2)	1.2

Pension Plan and Other Postretirement Benefit Plan Assets

Fair value is defined as the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date (an exit price). The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three levels.

- Level 1 — Fair values are based on unadjusted quoted prices in active markets for identical assets. Our Level 1 assets include cash, U.S. Treasury bonds, fixed income investment funds, exchange traded equity securities and alternative mutual fund investments.
- Level 2 — Fair values are based on inputs other than quoted prices within Level 1 that are observable for the asset, either directly or indirectly. Our Level 2 assets primarily include fixed income securities, fixed income and equity investment funds and real estate investments.
- Level 3 — Fair values are based on significant unobservable inputs for the asset.

Our pension plan assets consist of investments in pooled separate accounts and single client separate accounts. Net asset value ("NAV") of the pooled separate accounts is calculated in a manner consistent with U.S. GAAP for investment companies and is determinative of their fair value. Several of the pooled separate accounts invest in publicly quoted mutual funds or actively managed stocks. The fair value of the underlying mutual funds or stocks is used to determine the NAV of the separate account, which is not publicly quoted. Some of the pooled separate accounts also invest in fixed income securities. The fair value of the underlying securities is based on quoted prices of similar assets and used to determine the NAV of the separate account. Some of the pooled separate accounts invest in real estate properties. The fair value is based on discounted cash flow valuation models that utilize public real estate market data inputs such as transaction prices, market rent growth, vacancy levels, leasing absorption, market capitalization rates and discount rates.

The single client separate accounts invest in fixed income securities, hedge funds, a pooled separate account investment and other assets. The fixed income securities include U.S. Treasury bonds for which the fair value is based on quoted prices of identical assets in active markets. The fair value of the other fixed income securities is determined either from prices obtained from third party pricing vendors who use observable market information to determine prices or from internal models using substantially all observable inputs or a matrix pricing valuation approach. The hedge funds are measured at fair value using the NAV per share (or its equivalent) practical expedient and have not been classified in the fair value hierarchy. The NAV of the pooled separate account investment is calculated in a manner consistent with U.S. GAAP for investment companies and is determinative of its fair value. The carrying amounts of other assets, which are highly liquid in nature, are used to approximate fair value.

Our other postretirement benefit plan assets consist of cash, investments in fixed income security portfolios, investments in equity security portfolios, investments in alternative mutual fund portfolios and investment in a real estate mutual fund. Because of the nature of cash, its carrying amount approximates fair value. The fair value of fixed income investment funds, U.S. equity portfolios and international equity portfolios is based on quoted prices in active markets for identical assets. The fair value of the alternative mutual fund portfolios and the real estate mutual fund are based on quoted market prices, which represent the NAV of shares held by the other postretirement benefit plan.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

Pension Plan Assets

The fair value of the qualified pension plan's assets by asset category as of the most recent measurement date was as follows:

Asset category	December 31, 2018				
	Assets measured at fair value	Amount measured at net asset value	Fair value hierarchy level		
			Level 1	Level 2	Level 3
			(in millions)		
Pooled separate account investments:					
U.S. large cap equity portfolios (1)	\$ 387.7	\$ —	\$ —	\$ 387.7	\$ —
U.S. small/mid cap equity portfolios (2)	64.4	—	—	64.4	—
Balanced asset portfolios (3)	116.3	—	—	116.3	—
International equity portfolios (4)	220.9	—	—	220.9	—
Real estate investment portfolios (5)	133.6	—	—	133.6	—
Single client separate account investments:					
Fixed income securities:					
U.S. government and agencies	418.8	—	418.8	—	—
States and political subdivisions	24.0	—	—	24.0	—
Corporate	934.5	—	—	934.5	—
Commercial mortgage-backed securities	30.7	—	—	30.7	—
Other debt obligations	8.0	—	—	8.0	—
Hedge funds (6)	124.7	124.7	—	—	—
Pooled separate account investment (7)	23.9	—	—	23.9	—
Other (8)	10.7	—	0.3	10.4	—
Total	\$ 2,498.2	\$ 124.7	\$ 419.1	\$ 1,954.4	\$ —

Asset category	December 31, 2017				
	Assets measured at fair value	Amount measured at net asset value	Fair value hierarchy level		
			Level 1	Level 2	Level 3
			(in millions)		
Pooled separate account investments:					
U.S. large cap equity portfolios (1)	\$ 651.2	\$ —	\$ —	\$ 651.2	\$ —
U.S. small/mid cap equity portfolios (2)	112.2	—	—	112.2	—
Balanced asset portfolios (3)	128.4	—	—	128.4	—
International equity portfolios (4)	325.8	—	—	325.8	—
Real estate investment portfolios (5)	126.2	—	—	126.2	—
Single client separate account investments:					
Fixed income securities:					
U.S. government and agencies	292.7	—	292.7	—	—
States and political subdivisions	16.9	—	—	16.9	—
Corporate	745.2	—	—	745.2	—
Commercial mortgage-backed securities	21.3	—	—	21.3	—
Other debt obligations	3.4	—	—	3.4	—
Hedge funds (6)	120.4	120.4	—	—	—
Pooled separate account investment (7)	4.6	—	—	4.6	—
Other (8)	(6.1)	—	0.8	(6.9)	—
Total	\$ 2,542.2	\$ 120.4	\$ 293.5	\$ 2,128.3	\$ —

- (1) The portfolios invest primarily in publicly traded equity securities of large U.S. companies.
- (2) The portfolios invest primarily in publicly traded equity securities of mid-sized and small U.S. companies.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

- (3) The portfolios are a combination of underlying fixed income and equity investment options. These investment options may include balanced, asset allocation, target-date and target-risk investment options. Although typically lower risk than investment options that invest solely in equities, all investment options in this category have the potential to lose value.
- (4) The portfolios invest primarily in publicly traded equity securities of non-U.S. companies.
- (5) The portfolio invests primarily in U.S. commercial real estate properties through a separate account.
- (6) The hedge funds have varying investment strategies that also have a variety of redemption terms and conditions. We do not have unfunded commitments associated with these hedge funds.
- (7) The single client separate accounts invest in a money market pooled separate account.
- (8) Includes cash and net (payables)/receivables for the single client separate accounts.

We have established an investment policy that provides the investment objectives and guidelines for the pension plan. Our investment strategy is to achieve the following:

- Obtain a reasonable long-term return consistent with the level of risk assumed and at a cost of operation within prudent levels. Performance benchmarks are monitored.
- Ensure sufficient liquidity to meet the emerging benefit liabilities for the plan.
- Provide for diversification of assets in an effort to avoid the risk of large losses and maximize the investment return to the pension plan consistent with market and economic risk.

In administering the qualified pension plan's asset allocation strategy, we consider the projected liability stream of benefit payments, the relationship between current and projected assets of the plan and the projected actuarial liabilities streams, the historical performance of capital markets adjusted for the perception of future short- and long-term capital market performance and the perception of future economic conditions.

According to our investment policy, the target asset allocation for the qualified plan is:

<u>Asset category</u>	<u>Target allocation</u>
Fixed income security portfolios	25% - 80%
Equity portfolios	5% - 60%
Real estate investment portfolios	10%
Alternatives	5%

Other Postretirement Benefit Plan Assets

The fair value of the other postretirement benefit plans' assets by asset category as of the most recent measurement date was as follows:

<u>Asset category</u>	<u>December 31, 2018</u>			
	<u>Assets measured at fair value</u>	<u>Fair value hierarchy level</u>		
		<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
		<i>(in millions)</i>		
Cash and cash equivalents	\$ 0.3	\$ 0.3	\$ —	\$ —
Fixed income security portfolios:				
Fixed income investment funds (1)	203.7	166.2	37.5	—
U.S. equity portfolios (2)	135.8	101.0	34.8	—
International equity portfolios (3)	61.2	47.4	13.8	—
Alternative mutual fund portfolios (4)	235.4	235.4	—	—
Real estate mutual fund (5)	7.5	7.5	—	—
Total	\$ 643.9	\$ 557.8	\$ 86.1	\$ —

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

11. Employee and Agent Benefits — (continued)

Asset category	December 31, 2017			
	Assets measured at fair value	Fair value hierarchy level		
		Level 1	Level 2	Level 3
		<i>(in millions)</i>		
Cash and cash equivalents	\$ 0.3	\$ 0.3	\$ —	\$ —
Fixed income security portfolios:				
Fixed income investment funds (1)	209.8	177.7	32.1	—
U.S. equity portfolios (2)	159.4	108.5	50.9	—
International equity portfolios (3)	67.8	57.7	10.1	—
Alternative mutual fund portfolios (4)	251.4	251.4	—	—
Real estate mutual fund (5)	8.1	8.1	—	—
Total	\$ 696.8	\$ 603.7	\$ 93.1	\$ —

- (1) The portfolios invest in various fixed income securities, primarily of U.S. origin. These include, but are not limited to, corporate bonds, residential mortgage-backed securities, commercial mortgage-backed securities, U.S. Treasury securities, agency securities, asset-backed securities and collateralized mortgage obligations.
- (2) The portfolios invest primarily in publicly traded equity securities of large U.S. companies.
- (3) The portfolios invest primarily in publicly traded equity securities of non-U.S. companies.
- (4) The portfolios invest primarily in equities, corporate bonds, foreign currencies, convertible securities and derivatives.
- (5) The mutual fund invests primarily in U.S. commercial real estate properties.

As of December 31, 2018 and 2017, \$86.1 million and \$93.2 million of assets, respectively, in cash, fixed income security portfolios, U.S. equity portfolios and international equity portfolios were included in a trust owned life insurance contract.

The reconciliation for a Principal Life general account investment that was previously included in plan assets and measured at fair value using significant unobservable inputs (Level 3) is as follows:

Asset category	For the year ended December 31, 2016						
	Beginning assets balance as of December 31, 2015	Actual return gains (losses) on plan assets		Net purchases, sales, and settlements	Transfers into Level 3	Transfers out of Level 3	Ending assets balance as of December 31, 2016
		Relating to assets still held at the reporting date	Relating to assets sold during the period				
				<i>(in millions)</i>			
Principal Life general account investment	\$ 33.5	\$ (1.7)	\$ (33.6)	\$ 1.8	\$ —	\$ —	\$ —

The investment strategies and policies for the other postretirement benefit plans are similar to those employed by the qualified pension plan. According to our investment policy, the target asset allocation for the other postretirement benefit plans is:

Asset category	Target allocation
U.S. equity portfolios	24%
International equity portfolios	15%
Fixed income security portfolios	32%
Alternatives	24%
Real estate	5%

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****11. Employee and Agent Benefits — (continued)****Contributions**

Our funding policy for the qualified pension plan is to fund the plan annually in an amount at least equal to the minimum annual contribution required under ERISA and, generally, not greater than the maximum amount that can be deducted for U.S. federal income tax purposes. We do not anticipate contributions will be needed to satisfy the minimum funding requirements of ERISA for our qualified plan. We are unable to estimate the amount that may be contributed, but it is possible that we may fund the plans in 2019 up to \$25.0 million. This includes funding for both our qualified and nonqualified pension plans. While we designate assets to cover the computed liability of the nonqualified plan, the assets are not included as part of the asset balances presented in this footnote as they do not qualify as plan assets in accordance with U.S. GAAP. We may contribute to our other postretirement benefit plans in 2019 pending future analysis.

Estimated Future Benefit Payments

The estimated future benefit payments, which reflect expected future service, are:

	<u>Pension benefits</u>	<u>Other postretirement benefits (gross benefit payments, including prescription drug benefits)</u>
		<i>(in millions)</i>
Year ending December 31:		
2019	\$ 154.4	\$ 14.2
2020	143.3	12.8
2021	149.2	11.8
2022	158.6	11.1
2023	168.1	10.2
2024-2028	939.2	39.7

The above table reflects the total estimated future benefits to be paid from the plan, including both our share of the benefit cost and the participants' share of the cost, which is funded by their contributions to the plan.

The assumptions used in calculating the estimated future benefit payments are the same as those used to measure the benefit obligation for the year ended December 31, 2018.

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
11. Employee and Agent Benefits — (continued)
Defined Benefit Pension Plans Supplemental Information

Certain key summary data is shown below separately for qualified and nonqualified plans.

	For the year ended December 31,					
	2018			2017		
	Qualified Plan	Nonqualified Plan	Total	Qualified Plan	Nonqualified Plan	Total
	<i>(in millions)</i>					
Amount recognized in statement of financial position						
Other assets	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Other liabilities	(266.3)	(474.7)	(741.0)	(340.0)	(501.4)	(841.4)
Total	<u>\$ (266.3)</u>	<u>\$ (474.7)</u>	<u>\$ (741.0)</u>	<u>\$ (340.0)</u>	<u>\$ (501.4)</u>	<u>\$ (841.4)</u>
Amount recognized in accumulated other comprehensive loss						
Total net actuarial loss	\$ 544.4	\$ 128.9	\$ 673.3	\$ 516.4	\$ 166.4	\$ 682.8
Prior service benefit	(11.0)	(15.7)	(26.7)	(12.5)	(11.2)	(23.7)
Pre-tax accumulated other comprehensive loss	<u>\$ 533.4</u>	<u>\$ 113.2</u>	<u>\$ 646.6</u>	<u>\$ 503.9</u>	<u>\$ 155.2</u>	<u>\$ 659.1</u>
Components of net periodic benefit cost						
Service cost	\$ 65.7	\$ 7.3	\$ 73.0	\$ 60.3	\$ 6.8	\$ 67.1
Interest cost	102.0	17.5	119.5	106.0	18.4	124.4
Expected return on plan assets	(157.0)	—	(157.0)	(144.2)	—	(144.2)
Amortization of prior service benefit	(1.5)	(1.9)	(3.4)	(1.2)	(1.1)	(2.3)
Recognized net actuarial loss	53.6	14.2	67.8	59.2	8.8	68.0
Net periodic benefit cost	<u>\$ 62.8</u>	<u>\$ 37.1</u>	<u>\$ 99.9</u>	<u>\$ 80.1</u>	<u>\$ 32.9</u>	<u>\$ 113.0</u>
Other changes recognized in accumulated other comprehensive (income) loss						
Net actuarial (gain) loss	\$ 81.7	\$ (23.4)	\$ 58.3	\$ (11.9)	\$ 55.8	\$ 43.9
Prior service benefit	—	(6.4)	(6.4)	(12.2)	(10.9)	(23.1)
Amortization of net loss	(53.6)	(14.2)	(67.8)	(59.2)	(8.8)	(68.0)
Amortization of prior service benefit	1.5	1.9	3.4	1.2	1.1	2.3
Total recognized in pre-tax accumulated other comprehensive (income) loss	<u>\$ 29.6</u>	<u>\$ (42.1)</u>	<u>\$ (12.5)</u>	<u>\$ (82.1)</u>	<u>\$ 37.2</u>	<u>\$ (44.9)</u>
Total recognized in net periodic benefit cost and pre-tax accumulated other comprehensive (income) loss	<u>\$ 92.4</u>	<u>\$ (5.0)</u>	<u>\$ 87.4</u>	<u>\$ (2.0)</u>	<u>\$ 70.1</u>	<u>\$ 68.1</u>

Defined Contribution and Deferred Compensation Plans

In addition, we have defined contribution plans that are generally available to all U.S. employees and agents. Eligible participants could not contribute more than \$18,500 of their compensation to the plans in 2018. Effective January 1, 2006, we made several changes to the retirement programs. In general, the pension and supplemental executive retirement plan benefit formulas were reduced and the 401(k) matching contribution was increased. Employees who were ages 47 or older with at least ten years of service on December 31, 2005, could elect to retain the prior benefit provisions and forgo receipt of the additional matching contributions. The employees who elected to retain the prior benefit provisions are referred to as "Grandfathered Choice Participants." We match the Grandfathered Choice Participant's contribution at a 50% contribution rate up to a maximum matching contribution of 3% of the participant's compensation. For all other participants, we match the participant's contributions at a 75% contribution rate up to a maximum matching contribution of 6% of the participant's compensation. The defined contribution plans allow employees to choose among various investment options, including our common stock, which is available through our Employee Stock Ownership Plan ("ESOP"). We contributed \$53.4 million, \$48.9 million and \$46.6 million in 2018, 2017 and 2016, respectively, to our qualified defined contribution plans.

The number of shares of our common stock allocated to participants in the ESOP was 2.4 million and 2.1 million as of December 31, 2018 and 2017, respectively. As of December 31, 2018 and 2017, the fair value of the ESOP, which includes earned and unearned common stock, was \$105.1 million and \$149.4 million, respectively. The ESOP's total assets include our common stock and cash. The ESOP purchases our common stock on the open market. The number of

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****11. Employee and Agent Benefits — (continued)**

shares of our common stock held within the ESOP is treated as outstanding in both our basic and diluted earnings per share calculations.

We also have nonqualified deferred compensation plans available to select employees and agents that allow them to defer compensation amounts in excess of limits imposed by U.S. federal tax law with respect to the qualified plans. For certain nonqualified deferred compensation plans that include an employer matching contribution, in 2018 we matched the Grandfathered Choice Participant's deferral at a 50% match deferral rate up to a maximum matching deferral of 3% of the participant's compensation. For all other participants in nonqualified deferred compensation plans that include an employer matching contribution, we matched the participant's deferral at a 75% match deferral rate up to a maximum matching deferral of 6% of the participant's compensation. We contributed \$3.4 million, \$3.8 million and \$3.3 million in 2018, 2017 and 2016, respectively, to our nonqualified deferred compensation plans.

12. Contingencies, Guarantees and Indemnifications**Litigation and Regulatory Contingencies**

We are regularly involved in litigation, both as a defendant and as a plaintiff, but primarily as a defendant. Litigation naming us as a defendant ordinarily arises out of our business operations as a provider of asset management and accumulation products and services, individual life insurance, specialty benefits insurance and our investment activities. Some of the lawsuits may be class actions, or purport to be, and some may include claims for unspecified or substantial punitive and treble damages.

We may discuss such litigation in one of three ways. We accrue a charge to income and disclose legal matters for which the chance of loss is probable and for which the amount of loss can be reasonably estimated. We may disclose contingencies for which the chance of loss is reasonably possible and provide an estimate of the possible loss or range of loss or a statement that such an estimate cannot be made. Finally, we may voluntarily disclose loss contingencies for which the chance of loss is remote in order to provide information concerning matters that potentially expose us to possible losses.

In addition, regulatory bodies such as state insurance departments, the SEC, the Financial Industry Regulatory Authority ("FINRA"), the Department of Labor ("DOL") and other regulatory agencies in the U.S. and in international locations in which we do business, regularly make inquiries and conduct examinations or investigations concerning our compliance with, among other things, insurance laws, securities laws, ERISA and laws governing the activities of broker-dealers. We receive requests from regulators and other governmental authorities relating to industry issues and may receive additional requests, including subpoenas and interrogatories, in the future.

As of December 31, 2018, we had no litigation or regulatory contingencies for which we believe disclosure is appropriate.

Guarantees and Indemnifications

In the normal course of business, we have provided guarantees to third parties primarily related to former subsidiaries and joint ventures. The terms of these agreements range in duration and often are not explicitly defined. The maximum exposure under these agreements as of December 31, 2018, was approximately \$126.0 million. At inception, the fair value of such guarantees was insignificant. In addition, we believe the likelihood is remote that material payments will be required. Therefore, any liability accrued within our consolidated statements of financial position is insignificant. Should we be required to perform under these guarantees, we generally could recover a portion of the loss from third parties through recourse provisions included in agreements with such parties, the sale of assets held as collateral that can be liquidated in the event performance is required under the guarantees or other recourse generally available to us; therefore, such guarantees would not result in a material adverse effect on our business or financial position. While the likelihood is remote, such outcomes could materially affect net income in a particular quarter or annual period. Furthermore, in connection with our P-Caps contingent funding agreements, we are required to purchase any principal and interest strips of U.S. Treasury securities that are due and not paid from the associated unconsolidated trusts. The maximum exposure under these agreements as of December 31, 2018, was \$750.0 million. See Note 9, Long-Term Debt, for further details.

We manage mandatory privatized social security funds in Chile. By regulation, we have a required minimum guarantee on the funds' relative return. Because the guarantee has no limitation with respect to duration or amount, the maximum exposure of the guarantee in the future is indeterminable.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****12. Contingencies, Guarantees and Indemnifications — (continued)**

We are also subject to various other indemnification obligations issued in conjunction with divestitures, acquisitions and financing transactions whose terms range in duration and often are not explicitly defined. Certain portions of these indemnifications may be capped, while other portions are not subject to such limitations; therefore, the overall maximum amount of the obligation under the indemnifications cannot be reasonably estimated. At inception, the fair value of such indemnifications was insignificant. In addition, we believe the likelihood is remote that material payments will be required. Therefore, any liability accrued within our consolidated statements of financial position is insignificant. While we are unable to estimate with certainty the ultimate legal and financial liability with respect to these indemnifications, we believe that performance under these indemnifications would not result in a material adverse effect on our business or financial position. While the likelihood is remote, performance under these indemnifications could materially affect net income in a particular quarter or annual period.

Guaranty Funds

Under state insurance guaranty fund laws, insurers doing business in a state can be assessed, up to prescribed limits, for certain obligations of insolvent insurance companies to policyholders and claimants. A state's fund assesses its members based on their pro rata market share of written premiums in the state for the classes of insurance for which the insolvent insurer was engaged. Some states permit member insurers to recover assessments paid through full or partial premium tax offsets. We accrue liabilities for guaranty fund assessments when an assessment is probable, can be reasonably estimated and when the event obligating us to pay has occurred. While we cannot predict the amount and timing of any future assessments, we have established reserves we believe are adequate for assessments relating to insurance companies that are currently subject to insolvency proceedings. As of December 31, 2018 and 2017, the liability balance for guaranty fund assessments, which is not discounted, was \$22.2 million and \$23.3 million, respectively, and was reported within other liabilities in the consolidated statements of financial position. As of December 31, 2018 and 2017, \$10.4 million and \$11.3 million, respectively, related to premium tax offsets were included in premiums due and other receivables in the consolidated statements of financial position.

Operating Leases

As a lessee, we lease office space, data processing equipment, office furniture and office equipment under various operating leases. Rental expense for the years ended December 31, 2018, 2017 and 2016, was \$26.1 million, \$44.0 million and \$40.4 million, respectively.

The following represents payments due by period for operating lease obligations (in millions):

Year ending December 31:	
2019	\$ 50.3
2020	44.3
2021	35.5
2022	28.5
2023	20.2
2024 and thereafter	56.4
Total operating lease obligations	235.2
Less: Future sublease rental income on noncancelable leases	5.7
Total future minimum lease payments	<u>\$ 229.5</u>

Capital Leases

We lease buildings and hardware storage equipment under capital leases. As of December 31, 2018 and 2017, these leases had a gross asset balance of \$67.9 million and \$60.8 million and accumulated depreciation of \$35.3 million and \$32.8 million, respectively. Depreciation expense for the years ended December 31, 2018, 2017 and 2016 was \$12.9 million, \$13.4 million and \$14.8 million, respectively.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****12. Contingencies, Guarantees and Indemnifications — (continued)**

The following represents future minimum lease payments due by period for capital lease obligations (in millions).

Year ending December 31:	
2019	\$ 12.7
2020	11.0
2021	8.2
2022	1.8
2023	0.4
2024 and thereafter	0.2
Total	34.3
Less: Amounts representing interest	1.4
Net present value of minimum lease payments	<u>\$ 32.9</u>

13. Stockholders' Equity**Common Stock Dividends**

	For the year ended		
	December 31,		
	2018	2017	2016
Dividends declared per common share	<u>\$ 2.10</u>	<u>\$ 1.87</u>	<u>\$ 1.61</u>

Reconciliation of Outstanding Common Shares

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Beginning balance	289.0	287.7	291.4
Shares issued	2.6	4.9	3.0
Treasury stock acquired	(12.1)	(3.6)	(6.7)
Ending balance	<u>279.5</u>	<u>289.0</u>	<u>287.7</u>

In October 2015, our Board of Directors authorized a share repurchase program of up to \$150.0 million of our outstanding common stock, which was completed in March 2016. In February 2016, our Board of Directors authorized a share repurchase program of up to \$400.0 million of our outstanding common stock, which was completed in February 2018. In May 2017, our Board of Directors authorized a share repurchase program of up to \$250.0 million of our outstanding common stock, which was completed in April 2018. In May 2018, our Board of Directors authorized a share repurchase program of up to \$300.0 million of our outstanding common stock, which was completed in December 2018. In November 2018, our Board of Directors authorized a share repurchase program of up to \$500.0 million of our outstanding common stock, which has no expiration. Shares repurchased under these programs are accounted for as treasury stock, carried at cost and reflected as a reduction to stockholders' equity.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

13. Stockholders' Equity — (continued)

Other Comprehensive Income (Loss)

	For the year ended December 31, 2018		
	Pre-Tax	Tax (in millions)	After-Tax
Net unrealized losses on available-for-sale securities during the period	\$ (2,517.5)	\$ 515.4	\$ (2,002.1)
Reclassification adjustment for losses included in net income (1)	56.4	(5.3)	51.1
Adjustments for assumed changes in amortization patterns	185.9	(39.1)	146.8
Adjustments for assumed changes in policyholder liabilities	346.9	(72.3)	274.6
Net unrealized losses on available-for-sale securities	<u>(1,928.3)</u>	<u>398.7</u>	<u>(1,529.6)</u>
Noncredit component of impairment losses on fixed maturities, available-for-sale during the period	39.7	(8.4)	31.3
Adjustments for assumed changes in amortization patterns	(5.3)	1.1	(4.2)
Adjustments for assumed changes in policyholder liabilities	(0.8)	0.1	(0.7)
Noncredit component of impairment losses on fixed maturities, available-for-sale (2)	<u>33.6</u>	<u>(7.2)</u>	<u>26.4</u>
Net unrealized gains on derivative instruments during the period	50.4	(3.4)	47.0
Reclassification adjustment for gains included in net income (3)	(40.1)	4.2	(35.9)
Adjustments for assumed changes in amortization patterns	0.3	(0.1)	0.2
Adjustments for assumed changes in policyholder liabilities	5.7	(1.0)	4.7
Net unrealized gains on derivative instruments	<u>16.3</u>	<u>(0.3)</u>	<u>16.0</u>
Foreign currency translation adjustment	(303.9)	16.3	(287.6)
Unrecognized postretirement benefit obligation during the period	(125.3)	29.4	(95.9)
Amortization of amounts included in net periodic benefit cost (5)	49.0	(14.0)	35.0
Net unrecognized postretirement benefit obligation	<u>(76.3)</u>	<u>15.4</u>	<u>(60.9)</u>
Other comprehensive loss	<u>\$ (2,258.6)</u>	<u>\$ 422.9</u>	<u>\$ (1,835.7)</u>

	For the year ended December 31, 2017		
	Pre-Tax	Tax (in millions)	After-Tax
Net unrealized gains on available-for-sale securities during the period	\$ 1,074.2	\$ (341.6)	\$ 732.6
Reclassification adjustment for losses included in net income (1)	67.8	(23.5)	44.3
Adjustments for assumed changes in amortization patterns	(26.2)	9.3	(16.9)
Adjustments for assumed changes in policyholder liabilities	(184.6)	64.1	(120.5)
Net unrealized gains on available-for-sale securities	<u>931.2</u>	<u>(291.7)</u>	<u>639.5</u>
Noncredit component of impairment losses on fixed maturities, available-for-sale during the period	53.1	(17.0)	36.1
Adjustments for assumed changes in amortization patterns	(6.4)	2.3	(4.1)
Adjustments for assumed changes in policyholder liabilities	(1.3)	0.5	(0.8)
Noncredit component of impairment losses on fixed maturities, available-for-sale (2)	<u>45.4</u>	<u>(14.2)</u>	<u>31.2</u>
Net unrealized losses on derivative instruments during the period	(46.7)	16.0	(30.7)
Reclassification adjustment for gains included in net income (3)	(31.6)	10.8	(20.8)
Adjustments for assumed changes in amortization patterns	3.9	(1.3)	2.6
Adjustments for assumed changes in policyholder liabilities	9.6	(3.3)	6.3
Net unrealized losses on derivative instruments	<u>(64.8)</u>	<u>22.2</u>	<u>(42.6)</u>
Foreign currency translation adjustment during the period	171.6	4.7	176.3
Reclassification adjustment for losses included in net income (4)	2.6	—	2.6
Foreign currency translation adjustment	<u>174.2</u>	<u>4.7</u>	<u>178.9</u>
Unrecognized postretirement benefit obligation during the period	24.0	(3.8)	20.2
Amortization of amounts included in net periodic benefit cost (5)	31.1	(14.0)	17.1
Net unrecognized postretirement benefit obligation	<u>55.1</u>	<u>(17.8)</u>	<u>37.3</u>
Other comprehensive income	<u>\$ 1,141.1</u>	<u>\$ (296.8)</u>	<u>\$ 844.3</u>

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

13. Stockholders' Equity — (continued)

	For the year ended December 31, 2016		
	Pre-Tax	Tax <i>(in millions)</i>	After-Tax
Net unrealized gains on available-for-sale securities during the period	\$ 254.6	\$ (78.1)	\$ 176.5
Reclassification adjustment for losses included in net income (1)	67.9	(23.5)	44.4
Adjustments for assumed changes in amortization patterns	5.6	(2.0)	3.6
Adjustments for assumed changes in policyholder liabilities	(177.2)	51.8	(125.4)
Net unrealized gains on available-for-sale securities	<u>150.9</u>	<u>(51.8)</u>	<u>99.1</u>
Noncredit component of impairment losses on fixed maturities, available-for-sale during the period	(0.3)	(1.5)	(1.8)
Adjustments for assumed changes in amortization patterns	(3.4)	1.2	(2.2)
Adjustments for assumed changes in policyholder liabilities	0.8	(0.3)	0.5
Noncredit component of impairment losses on fixed maturities, available-for-sale (2)	<u>(2.9)</u>	<u>(0.6)</u>	<u>(3.5)</u>
Net unrealized gains on derivative instruments during the period	32.6	(7.6)	25.0
Reclassification adjustment for gains included in net income (3)	(27.7)	5.4	(22.3)
Adjustments for assumed changes in amortization patterns	2.9	(1.0)	1.9
Adjustments for assumed changes in policyholder liabilities	<u>16.9</u>	<u>(6.0)</u>	<u>10.9</u>
Net unrealized gains on derivative instruments	24.7	(9.2)	15.5
Foreign currency translation adjustment	<u>75.6</u>	<u>(7.5)</u>	<u>68.1</u>
Unrecognized postretirement benefit obligation during the period	20.2	(6.8)	13.4
Amortization of amounts included in net periodic benefit cost (5)	<u>49.1</u>	<u>(20.7)</u>	<u>28.4</u>
Net unrecognized postretirement benefit obligation	69.3	(27.5)	41.8
Other comprehensive income	<u>\$ 317.6</u>	<u>\$ (96.6)</u>	<u>\$ 221.0</u>

- (1) Pre-tax reclassification adjustments relating to available-for-sale securities are reported in net realized capital gains (losses) on the consolidated statements of operations.
- (2) Represents the net impact of (1) unrealized gains resulting from reclassification of previously recognized noncredit impairment losses from OCI to net realized capital gains (losses) for fixed maturities with bifurcated OTTI that had additional credit losses or fixed maturities that previously had bifurcated OTTI that have now been sold or are intended to be sold and (2) unrealized losses resulting from reclassification of noncredit impairment losses for fixed maturities with bifurcated OTTI from net realized capital gains (losses) to OCI.
- (3) See Note 5, Derivative Financial Instruments — Cash Flow Hedges, for further details.
- (4) Pre-tax reclassification adjustments relating to deconsolidated sponsored investment funds are reported in net realized capital gains (losses) on the consolidated statements of operations. \$2.0 million of this reclassification relates to noncontrolling interest and is reported in net income attributable to noncontrolling interest on the consolidated statements of operations.
- (5) Amount is comprised of amortization of prior service cost (benefit) and recognized net actuarial (gain) loss, which is reported in operating expenses on the consolidated statements of operations. See Note 11, Employee and Agent Benefits — Components of Net Periodic Benefit Cost, for further details.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

13. Stockholders' Equity — (continued)

Accumulated Other Comprehensive Income (Loss)

	Net unrealized gains on available-for-sale securities	Noncredit component of impairment losses on fixed maturities available-for-sale	Net unrealized gains on derivative instruments <i>(in millions)</i>	Foreign currency translation adjustment	Unrecognized postretirement benefit obligation	Accumulated other comprehensive income (loss)
Balances as of January 1, 2016	\$ 732.1	\$ (86.0)	\$ 69.8	\$ (1,148.2)	\$ (450.2)	\$ (882.5)
Other comprehensive income during the period, net of adjustments	54.7	(3.5)	37.8	63.7	13.4	166.1
Amounts reclassified from AOCI	44.4	—	(22.3)	—	28.4	50.5
Other comprehensive income	99.1	(3.5)	15.5	63.7	41.8	216.6
Purchase of subsidiary shares from noncontrolling interest	—	—	—	(9.3)	—	(9.3)
Balances as of December 31, 2016	831.2	(89.5)	85.3	(1,093.8)	(408.4)	(675.2)
Other comprehensive income during the period, net of adjustments	595.2	—	(21.8)	174.7	20.2	768.3
Amounts reclassified from AOCI	44.3	31.2	(20.8)	0.6	17.1	72.4
Other comprehensive income	639.5	31.2	(42.6)	175.3	37.3	840.7
Balances as of December 31, 2017	1,470.7	(58.3)	42.7	(918.5)	(371.1)	165.5
Other comprehensive loss during the period, net of adjustments	(1,580.6)	—	51.9	(283.2)	(95.9)	(1,907.8)
Amounts reclassified from AOCI	51.1	26.4	(35.9)	—	35.0	76.6
Other comprehensive loss	(1,529.5)	26.4	16.0	(283.2)	(60.9)	(1,831.2)
Purchase of subsidiary shares from noncontrolling interest	—	—	—	(1.6)	—	(1.6)
Effects of implementation of accounting change related to equity investments, net	(1.0)	—	—	—	—	(1.0)
Effects of implementation of accounting change accounting change related to revenue recognition, net	—	—	—	25.6	—	25.6
Effects of implementation of accounting change related to the reclassification of certain tax effects, net	249.8	(15.2)	5.7	(81.8)	(80.9)	77.6
Balances as of December 31, 2018	<u>\$ 190.0</u>	<u>\$ (47.1)</u>	<u>\$ 64.4</u>	<u>\$ (1,259.5)</u>	<u>\$ (512.9)</u>	<u>\$ (1,565.1)</u>

Noncontrolling Interest

Interests held by unaffiliated parties in consolidated entities are reflected in noncontrolling interest, which represents the noncontrolling partners' share of the underlying net assets of our consolidated subsidiaries. Noncontrolling interest that is not redeemable is reported in the equity section of the consolidated statements of financial position.

The noncontrolling interest holders in certain of our consolidated entities maintain an equity interest that is redeemable at the option of the holder, which may be exercised on varying dates. Since redemption of the noncontrolling interest is outside of our control, this interest is excluded from stockholders' equity and reported separately as redeemable noncontrolling interest on the consolidated statements of financial position. Our redeemable noncontrolling interest primarily relates to consolidated sponsored investment funds for which interests are redeemed at fair value from the net assets of the funds.

For our redeemable noncontrolling interest related to other consolidated subsidiaries, redemptions are required to be purchased at fair value or a value based on a formula that management intended to reasonably approximate fair value based on a fixed multiple of earnings over a measurement period. The carrying value of the redeemable noncontrolling interest is compared to the redemption value at each reporting period. Any adjustments to the carrying amount of the redeemable noncontrolling interest for changes in redemption value prior to exercise of the redemption option are determined after the attribution of net income or loss of the subsidiary and are recognized in the redemption value as they occur. Adjustments to the carrying value of redeemable noncontrolling interest result in adjustments to additional paid-in capital and/or retained earnings. Adjustments are recorded in retained earnings to the extent the redemption value of the redeemable noncontrolling interest exceeds its fair value and will impact the numerator in our earnings per share calculations. All other adjustments to the redeemable noncontrolling interest are recorded in additional paid-in capital.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

13. Stockholders' Equity — (continued)

Following is a reconciliation of the changes in the redeemable noncontrolling interest (in millions):

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Beginning balance	\$ 101.3	\$ 97.5	\$ 85.7
Net income (loss) attributable to redeemable noncontrolling interest	(2.1)	7.0	16.8
Redeemable noncontrolling interest of newly consolidated entities (1)	—	—	179.5
Redeemable noncontrolling interest of deconsolidated entities (2)	(10.6)	(61.1)	(261.5)
Contributions from redeemable noncontrolling interest	355.0	94.1	135.1
Distributions to redeemable noncontrolling interest	(36.8)	(39.0)	(57.4)
Purchase of subsidiary shares from redeemable noncontrolling interest	(7.1)	(4.4)	(8.2)
Change in redemption value of redeemable noncontrolling interest	(7.0)	5.9	4.2
Stock-based compensation attributable to redeemable noncontrolling interest	0.1	—	—
Other comprehensive income (loss) attributable to redeemable noncontrolling interest	(1.6)	1.3	3.3
Ending balance	<u>\$ 391.2</u>	<u>\$ 101.3</u>	<u>\$ 97.5</u>

- (1) Effective January 1, 2016, certain sponsored investment funds were consolidated as a result of the implementation of new accounting guidance.
- (2) We deconsolidated certain sponsored investment funds as they no longer met the requirements for consolidation.

Dividend Limitations

The declaration and payment of our common stock dividends is subject to the discretion of our Board of Directors and will depend on our overall financial condition, results of operations, capital levels, cash requirements, future prospects, receipt of dividends from Principal Life (as described below), risk management considerations and other factors deemed relevant by the Board. No significant restrictions limit the payment of dividends by us, except those generally applicable to corporations incorporated in Delaware.

Under Iowa law, we may pay dividends only from the earned surplus arising from our business and must receive the prior approval of the Commissioner of Insurance of the State of Iowa ("the Commissioner") to pay stockholder dividends or make any other distribution if such distribution would exceed certain statutory limitations. Iowa law gives the Commissioner discretion to disapprove requests for distributions in excess of these limitations. Extraordinary dividends include those made, together with dividends and other distributions, within the preceding twelve months that exceed the greater of (i) 10% of our statutory policyholder surplus as of the previous year-end or (ii) the statutory net gain from operations from the previous calendar year, not to exceed earned surplus. Based on this limitation and 2018 statutory results, Principal Life could pay approximately \$1,085.7 million in ordinary stockholder dividends in 2019 without prior regulatory approval. However, because the dividend test is based on dividends previously paid over rolling 12-month periods, if paid before a specified date during 2019, some or all of such dividends may be extraordinary and require regulatory approval.

On May 1, 2017, Principal Life sold its ownership interest in Principal Global Investors, LLC to Principal Life's direct parent, Principal Financial Services, Inc. in connection with a corporate reorganization designed to better utilize and allocate capital internally. Subsequent to the sale, Principal Life paid an extraordinary dividend of \$1,068.4 million to its parent, which was approved by the Commissioner, primarily from proceeds received from the sale.

14. Fair Value Measurements

We use fair value measurements to record fair value of certain assets and liabilities and to estimate fair value of financial instruments not recorded at fair value but required to be disclosed at fair value. Certain financial instruments, particularly policyholder liabilities other than investment contracts, are excluded from these fair value disclosure requirements.

Valuation Hierarchy

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). The fair value hierarchy prioritizes the

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****14. Fair Value Measurements — (continued)**

inputs to valuation techniques used to measure fair value into three levels. The level in the fair value hierarchy within which the fair value measurement in its entirety falls is determined based on the lowest level input that is significant to the fair value measurement in its entirety considering factors specific to the asset or liability.

- **Level 1** — Fair values are based on unadjusted quoted prices in active markets for identical assets or liabilities. Our Level 1 assets and liabilities primarily include exchange traded equity securities, mutual funds and U.S. Treasury bonds.
- **Level 2** — Fair values are based on inputs other than quoted prices within Level 1 that are observable for the asset or liability, either directly or indirectly. Our Level 2 assets and liabilities primarily include fixed maturities (including public and private bonds), equity securities, cash equivalents, derivatives and other investments.
- **Level 3** — Fair values are based on at least one significant unobservable input for the asset or liability. Our Level 3 assets and liabilities primarily include fixed maturities, real estate and commercial mortgage loan investments of our separate accounts, complex derivatives and embedded derivatives.

Determination of Fair Value

The following discussion describes the valuation methodologies and inputs used for assets and liabilities measured at fair value on a recurring basis or disclosed at fair value. The techniques utilized in estimating the fair value of financial instruments are reliant on the assumptions used. Care should be exercised in deriving conclusions about our business, its value or financial position based on the fair value information of financial instruments presented below.

Fair value estimates are made based on available market information and judgments about the financial instrument at a specific point in time. Such estimates do not consider the tax impact of the realization of unrealized gains or losses. In addition, the disclosed fair value may not be realized in the immediate settlement of the financial instrument. We validate prices through an investment analyst review process, which includes validation through direct interaction with external sources, review of recent trade activity or use of internal models. In circumstances where broker quotes are used to value an instrument, we generally receive one non-binding quote. Broker quotes are validated through an investment analyst review process, which includes validation through direct interaction with external sources and use of internal models or other relevant information. We did not make any significant changes to our valuation processes during 2018.

Fixed Maturities

Fixed maturities include bonds, ABS, redeemable preferred stock and certain non-redeemable preferred securities. When available, the fair value of fixed maturities is based on quoted prices of identical assets in active markets. These are reflected in Level 1 and primarily include U.S. Treasury bonds and actively traded redeemable corporate preferred securities.

When quoted prices of identical assets in active markets are not available, our first priority is to obtain prices from third party pricing vendors. We have regular interaction with these vendors to ensure we understand their pricing methodologies and to confirm they are utilizing observable market information. Their methodologies vary by asset class and include inputs such as estimated cash flows, benchmark yields, reported trades, broker quotes, credit quality, industry events and economic events. Fixed maturities with validated prices from pricing services, which includes the majority of our public fixed maturities in all asset classes, are generally reflected in Level 2. Also included in Level 2 are corporate bonds when quoted market prices are not available, for which an internal model using substantially all observable inputs or a matrix pricing valuation approach is used. In the matrix approach, securities are grouped into pricing categories that vary by sector, rating and average life. Each pricing category is assigned a risk spread based on studies of observable public market data from the investment professionals assigned to specific security classes. The expected cash flows of the security are then discounted back at the current Treasury curve plus the appropriate risk spread. Although the matrix valuation approach provides a fair valuation of each pricing category, the valuation of an individual security within each pricing category may also be impacted by company specific factors.

If we are unable to price a fixed maturity security using prices from third party pricing vendors or other sources specific to the asset class, we may obtain a broker quote or utilize an internal pricing model specific to the asset utilizing relevant market information, to the extent available and where at least one significant unobservable input is utilized. These are reflected in Level 3 in the fair value hierarchy and can include fixed maturities across all asset classes. As of December 31, 2018, less than 1% of our total fixed maturities were Level 3 securities valued using internal pricing models.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****14. Fair Value Measurements — (continued)**

The primary inputs, by asset class, for valuations of the majority of our Level 2 investments from third party pricing vendors or our internal pricing valuation approach are described below.

U.S. Government and Agencies/Non-U.S. Governments. Inputs include recently executed market transactions, interest rate yield curves, maturity dates, market price quotations and credit spreads relating to similar instruments.

States and Political Subdivisions. Inputs include Municipal Securities Rulemaking Board reported trades, U.S. Treasury and other benchmark curves, material event notices, new issue data and obligor credit ratings.

Corporate. Inputs include recently executed transactions, market price quotations, benchmark yields, issuer spreads and observations of equity and credit default swap curves related to the issuer. For private placement corporate securities valued through the matrix valuation approach inputs include the current Treasury curve and risk spreads based on sector, rating and average life of the issuance.

RMBS, CMBS, Collateralized Debt Obligations and Other Debt Obligations. Inputs include cash flows, priority of the tranche in the capital structure, expected time to maturity for the specific tranche, reinvestment period remaining and performance of the underlying collateral including prepayments, defaults, deferrals, loss severity of defaulted collateral and, for RMBS, prepayment speed assumptions. Other inputs include market indices and recently executed market transactions.

Equity Securities

Equity securities include mutual funds, common stock, non-redeemable preferred stock and required regulatory investments. Fair values of equity securities are determined using quoted prices in active markets for identical assets when available, which are reflected in Level 1. When quoted prices are not available, we may utilize internal valuation methodologies appropriate for the specific asset that use observable inputs such as underlying share prices or the NAV, which are reflected in Level 2. Fair values might also be determined using broker quotes or through the use of internal models or analysis that incorporate significant assumptions deemed appropriate given the circumstances and consistent with what other market participants would use when pricing such securities, which are reflected in Level 3.

Derivatives

The fair values of exchange-traded derivatives are determined through quoted market prices, which are reflected in Level 1. Exchange-traded derivatives include futures that are settled daily, which reduces their fair value in the consolidated statements of financial position. The fair values of OTC cleared derivatives are determined through market prices published by the clearinghouses, which are reflected in Level 2. The clearinghouses may utilize the overnight indexed swap ("OIS") curve in their valuation. Variation margin associated with OTC cleared derivatives is settled daily, which reduces their fair value in the consolidated statements of financial position. The fair values of bilateral OTC derivative instruments are determined using either pricing valuation models that utilize market observable inputs or broker quotes. The majority of our bilateral OTC derivatives are valued with models that use market observable inputs, which are reflected in Level 2. Significant inputs include contractual terms, interest rates, currency exchange rates, credit spread curves, equity prices and volatilities. These valuation models consider projected discounted cash flows, relevant swap curves and appropriate implied volatilities. Certain bilateral OTC derivatives utilize unobservable market data, primarily independent broker quotes that are nonbinding quotes based on models that do not reflect the result of market transactions, which are reflected in Level 3.

Our non-cleared derivative contracts are generally documented under ISDA Master Agreements, which provide for legally enforceable set-off and close-out netting of exposures to specific counterparties. Collateral arrangements are bilateral and based on current ratings of each entity. We utilize the LIBOR interest rate curve to value our positions, which includes a credit spread. This credit spread incorporates an appropriate level of nonperformance risk into our valuations given the current ratings of our counterparties, as well as the collateral agreements in place. Counterparty credit risk is routinely monitored to ensure our adjustment for non-performance risk is appropriate. Our centrally cleared derivative contracts are conducted with regulated centralized clearinghouses, which provide for daily exchange of cash collateral or variation margin equal to the difference in the daily market values of those contracts that eliminates the non-performance risk on these trades.

Interest Rate Contracts. For non-cleared contracts we use discounted cash flow valuation techniques to determine the fair value of interest rate swaps using observable swap curves as the inputs. These are reflected in Level 2. For centrally cleared contracts we use published prices from clearinghouses. These are reflected in Level 2. In addition, we have interest rate options and have had a limited number of complex inflation-linked interest rate swaps and swaptions that are valued using broker quotes. These are reflected in Level 3.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****14. Fair Value Measurements — (continued)**

Foreign Exchange Contracts. We use discounted cash flow valuation techniques that utilize observable swap curves and exchange rates as the inputs to determine the fair value of foreign currency swaps. These are reflected in Level 2. Currency forwards and currency options are valued using observable market inputs, including forward currency exchange rates. These are reflected in Level 2. In addition, we have a limited number of non-standard currency swaps and currency options that are valued using broker quotes. These are reflected within Level 3.

Equity Contracts. We use an option pricing model using observable implied volatilities, dividend yields, index prices and swap curves as the inputs to determine the fair value of equity options. These are reflected in Level 2.

Credit Contracts. We use either the ISDA Credit Default Swap Standard discounted cash flow model that utilizes observable default probabilities and recovery rates as inputs or broker prices to determine the fair value of credit default swaps. These are reflected in Level 3.

Other Investments

Other investments reported at fair value include invested assets of consolidated sponsored investment funds, unconsolidated sponsored investment funds, other investment funds reported at fair value, commercial mortgage loans of consolidated VIEs for which the fair value option was elected, equity method real estate investments for which the fair value option was elected and certain redeemable preferred stock. In addition, in 2017 we had other investment funds for which the fair value option was elected.

Invested assets of consolidated sponsored investment funds include equity securities, fixed maturities and other investments, for which fair values are determined as previously described, and are reflected in Level 1 and Level 2.

The fair value of unconsolidated sponsored investment funds and other investment funds is determined using the NAV of the fund. The NAV of the fund represents the price at which we would be able to initiate a transaction. Investments for which the NAV represents a quoted price in an active market for identical assets are reflected in Level 1. Investments that do not have a quoted price in an active market are reflected in Level 2.

Commercial mortgage loans of consolidated VIEs are valued using the more observable fair value of the liabilities of the consolidated collateralized financing entities ("CCFEs") under the measurement alternative guidance and are reflected in Level 2. The liabilities are affiliated so are not reflected in our consolidated results.

Equity method real estate investments for which the fair value option was elected are reflected in Level 3. The equity method real estate investments consist of underlying real estate and debt. The real estate fair value is estimated using a discounted cash flow valuation model that utilizes public real estate market data inputs such as transaction prices, market rents, vacancy levels, leasing absorption, market cap rates and discount rates. The debt fair value is estimated using a discounted cash flow analysis based on our incremental borrowing rate for similar borrowing arrangements.

The fair value of certain redeemable preferred stock is based on an internal model using observable inputs and is included in Level 2.

Cash Equivalents

Certain cash equivalents are reported at fair value on a recurring basis and include money market instruments and other short-term investments with maturities of three months or less. Fair values of these cash equivalents may be determined using public quotations, when available, which are reflected in Level 1. When public quotations are not available, because of the highly liquid nature of these assets, carrying amounts may be used to approximate fair values, which are reflected in Level 2.

Separate Account Assets

Separate account assets include equity securities, debt securities, cash equivalents and derivative instruments, for which fair values are determined as previously described, and are reflected in Level 1, Level 2 and Level 3. Separate account assets also include commercial mortgage loans, for which the fair value is estimated by discounting the expected total cash flows using market rates that are applicable to the yield, credit quality and maturity of the loans. The market clearing spreads vary based on mortgage type, weighted average life, rating and liquidity. These are reflected in Level 3. Finally, separate account assets include real estate, for which the fair value is estimated using discounted cash flow valuation models that utilize various public real estate market data inputs. In addition, each property is appraised annually by an independent appraiser. The real estate included in separate account assets is recorded net of related mortgage encumbrances for which the fair value is estimated using discounted cash flow analysis based on our incremental borrowing rate for similar borrowing arrangements. The real estate within the separate accounts is reflected in Level 3.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

Investment Contracts

Certain annuity contracts and other investment contracts include embedded derivatives that have been bifurcated from the host contract and are measured at fair value on a recurring basis, which are reflected in Level 3. The key assumptions for calculating the fair value of the embedded derivative liabilities are market assumptions (such as equity market returns, interest rate levels, market volatility and correlations) and policyholder behavior assumptions (such as lapse, mortality, utilization and withdrawal patterns). Risk margins are included in the policyholder behavior assumptions. The assumptions are based on a combination of historical data and actuarial judgment. The embedded derivative liabilities are valued using stochastic models that incorporate a spread reflecting our own creditworthiness.

The assumption for our own non-performance risk for investment contracts and any embedded derivatives bifurcated from certain annuity and investment contracts is based on the current market credit spreads for debt-like instruments we have issued and are available in the market.

Other Liabilities

Certain obligations reported in other liabilities include embedded derivatives to deliver underlying securities of structured investments to third parties. The fair value of the embedded derivatives is calculated based on the value of the underlying securities that are valued based on prices obtained from third party pricing vendors as utilized and described in our discussion of how fair value is determined for fixed maturities, which are reflected in Level 2.

Certain obligations of consolidated VIEs for which the fair value option was elected were included in other liabilities. The synthetic entity that had these obligations matured in the first quarter of 2017. The VIEs' unaffiliated obligations were valued utilizing internal pricing models, which were reflected in Level 3.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis were as follows:

	December 31, 2018				
	Assets/ (liabilities) measured at fair value	Amount measured at net asset value (4)	Fair value hierarchy level		
			Level 1	Level 2	Level 3
<i>(in millions)</i>					
Assets					
Fixed maturities, available-for-sale:					
U.S. government and agencies	\$ 1,441.0	\$ —	\$ 1,027.8	\$ 413.2	\$ —
Non-U.S. governments	890.5	—	2.7	883.2	4.6
States and political subdivisions	6,225.7	—	—	6,225.7	—
Corporate	35,539.3	—	19.2	35,462.2	57.9
Residential mortgage-backed securities	2,460.6	—	—	2,460.6	—
Commercial mortgage-backed securities	3,945.6	—	—	3,936.1	9.5
Collateralized debt obligations (1)	2,420.8	—	—	2,412.5	8.3
Other debt obligations	7,185.0	—	—	7,126.5	58.5
Total fixed maturities, available-for-sale	60,108.5	—	1,049.7	58,920.0	138.8
Fixed maturities, trading	636.1	—	—	636.1	—
Equity securities	1,843.7	—	661.2	1,182.5	—
Derivative assets (2)	194.0	—	—	175.4	18.6
Other investments	828.6	75.4	125.9	610.1	17.2
Cash equivalents	1,775.9	—	46.3	1,729.6	—
Sub-total excluding separate account assets	65,386.8	75.4	1,883.1	63,253.7	174.6
Separate account assets	144,987.9	124.6	79,572.0	56,675.8	8,615.5
Total assets	\$ 210,374.7	\$ 200.0	\$ 81,455.1	\$ 119,929.5	\$ 8,790.1
Liabilities					
Investment contracts (3)	\$ (45.2)	\$ —	\$ —	\$ —	\$ (45.2)
Derivative liabilities (2)	(157.1)	—	—	(141.6)	(15.5)
Other liabilities (3)	(91.5)	—	—	(91.5)	—
Total liabilities	\$ (293.8)	\$ —	\$ —	\$ (233.1)	\$ (60.7)
Net assets	\$ 210,080.9	\$ 200.0	\$ 81,455.1	\$ 119,696.4	\$ 8,729.4

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

	December 31, 2017				
	Assets/ (liabilities) measured at fair value	Amount measured at net asset value (4)	Fair value hierarchy level		
			Level 1	Level 2	Level 3
<i>(in millions)</i>					
Assets					
Fixed maturities, available-for-sale:					
U.S. government and agencies	\$ 1,351.7	\$ —	\$ 896.8	\$ 454.9	\$ —
Non-U.S. governments	901.5	—	2.9	891.2	7.4
States and political subdivisions	6,801.6	—	—	6,801.6	—
Corporate	37,033.1	—	20.7	36,884.4	128.0
Residential mortgage-backed securities	2,523.3	—	—	2,523.3	—
Commercial mortgage-backed securities	3,708.3	—	—	3,697.7	10.6
Collateralized debt obligations (1)	1,359.3	—	—	1,234.3	125.0
Other debt obligations	5,709.6	—	—	5,707.3	2.3
Total fixed maturities, available-for-sale	59,388.4	—	920.4	58,194.7	273.3
Fixed maturities, trading	566.0	—	—	566.0	—
Equity securities, available-for-sale	96.0	—	47.4	45.9	2.7
Equity securities, trading	1,770.6	—	544.0	1,226.6	—
Derivative assets (2)	304.0	—	—	279.8	24.2
Other investments	498.0	85.8	176.0	229.7	6.5
Cash equivalents	1,793.3	—	46.8	1,746.5	—
Sub-total excluding separate account assets	64,416.3	85.8	1,734.6	62,289.2	306.7
Separate account assets	159,272.7	120.4	90,090.6	61,410.3	7,651.4
Total assets	\$ 223,689.0	\$ 206.2	\$ 91,825.2	\$ 123,699.5	\$ 7,958.1
Liabilities					
Investment contracts (3)	\$ (160.3)	\$ —	\$ —	\$ —	\$ (160.3)
Derivative liabilities (2)	(274.7)	—	—	(268.6)	(6.1)
Other liabilities (3)	(253.4)	—	—	(253.4)	—
Total liabilities	\$ (688.4)	\$ —	\$ —	\$ (522.0)	\$ (166.4)
Net assets	\$ 223,000.6	\$ 206.2	\$ 91,825.2	\$ 123,177.5	\$ 7,791.7

- (1) Primarily consists of collateralized loan obligations backed by secured corporate loans.
- (2) Within the consolidated statements of financial position, derivative assets are reported with other investments and derivative liabilities are reported with other liabilities. The amounts are presented gross in the tables above to reflect the presentation on the consolidated statements of financial position; however, are presented net for purposes of the rollforward in the Changes in Level 3 Fair Value Measurements tables. Refer to Note 5, Derivative Financial Instruments, for further information on fair value by class of derivative instruments.
- (3) Includes bifurcated embedded derivatives that are reported at net asset (liability) fair value within the same line item in the consolidated statements of financial position in which the host contract is reported.
- (4) Certain investments are measured at fair value using the NAV per share (or its equivalent) practical expedient and have not been classified in the fair value hierarchy. Other investments using the NAV practical expedient consist of certain fund interests that are restricted until maturity with unfunded commitments totaling \$32.0 million and \$46.1 million as of December 31, 2018 and December 31, 2017, respectively. Separate account assets using the NAV practical expedient consist of hedge funds with varying investment strategies that also have a variety of redemption terms and conditions. We do not have unfunded commitments associated with these hedge funds.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

Changes in Level 3 Fair Value Measurements

The reconciliation for all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) was as follows:

	For the year ended December 31, 2018						Ending asset/ (liability) balance as of December 31, 2018	Changes in unrealized gains (losses) included in net income relating to positions still held (1)
	Beginning asset/ (liability) balance as of December 31, 2017	Total realized/unrealized gains (losses)		Net purchases, sales, issuances and settlements (4)	Transfers into Level 3	Transfers out of Level 3		
		Included in net income (1)	Included in other comprehensive income (3)					
<i>(in millions)</i>								
Assets								
Fixed maturities, available-for-sale:								
Non-U.S. governments	\$ 7.4	\$ —	\$ (0.1)	\$ (1.4)	\$ —	\$ (1.3)	\$ 4.6	\$ —
Corporate	128.0	(1.0)	(0.1)	(15.2)	1.0	(54.8)	57.9	—
Commercial mortgage-backed securities	10.6	(3.5)	0.2	0.1	3.6	(1.5)	9.5	(1.9)
Collateralized debt obligations	125.0	(0.9)	0.2	66.3	54.7	(237.0)	8.3	(0.9)
Other debt obligations	2.3	—	(0.2)	147.4	—	(91.0)	58.5	—
Total fixed maturities, available-for-sale	273.3	(5.4)	—	197.2	59.3	(385.6)	138.8	(2.8)
Fixed maturities, trading	—	—	—	3.7	—	(3.7)	—	—
Equity securities	2.7	12.9	—	(15.6)	—	—	—	—
Other investments	6.5	1.7	—	9.0	—	—	17.2	1.7
Separate account assets (2)	7,651.4	869.5	(0.3)	133.7	2.3	(41.1)	8,615.5	829.8
Liabilities								
Investment contracts	(160.3)	107.5	0.1	7.5	—	—	(45.2)	109.9
Derivatives								
Net derivative assets	18.1	(20.2)	—	5.2	—	—	3.1	(18.4)

	For the year ended December 31, 2017						Ending asset/ (liability) balance as of December 31, 2017	Changes in unrealized gains (losses) included in net income relating to positions still held (1)
	Beginning asset/ (liability) balance as of December 31, 2016	Total realized/unrealized gains (losses)		Net purchases, sales, issuances and settlements (4)	Transfers into Level 3	Transfers out of Level 3		
		Included in net income (1)	Included in other comprehensive income (3)					
<i>(in millions)</i>								
Assets								
Fixed maturities, available-for-sale:								
Non-U.S. governments	\$ 62.1	\$ (0.2)	\$ (0.3)	\$ (19.0)	\$ —	\$ (35.2)	\$ 7.4	\$ (0.3)
Corporate	259.1	(2.3)	3.5	(29.2)	22.2	(125.3)	128.0	(0.8)
Commercial mortgage-backed securities	71.1	(12.7)	11.1	(0.7)	26.3	(84.5)	10.6	(4.0)
Collateralized debt obligations	33.6	—	1.7	7.3	183.7	(101.3)	125.0	—
Other debt obligations	91.5	—	(0.2)	(0.8)	0.1	(88.3)	2.3	—
Total fixed maturities, available-for-sale	517.4	(15.2)	15.8	(42.4)	232.3	(434.6)	273.3	(5.1)
Fixed maturities, trading	92.9	(2.4)	—	(92.4)	1.9	—	—	—
Equity securities, available-for-sale	2.7	—	—	—	—	—	2.7	—
Equity securities, trading	—	—	—	(0.7)	0.7	—	—	—
Other investments	36.9	3.9	—	(34.3)	—	—	6.5	3.8
Separate account assets (2)	7,354.8	798.1	(1.1)	(464.8)	3.1	(38.7)	7,651.4	696.0
Liabilities								
Investment contracts	(176.5)	8.4	0.4	7.4	—	—	(160.3)	5.7
Other liabilities	(59.9)	(0.1)	—	60.0	—	—	—	—
Derivatives								
Net derivative assets	11.3	3.1	—	3.7	—	—	18.1	4.9

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
14. Fair Value Measurements — (continued)

	For the year ended December 31, 2016						Ending asset/ (liability) balance as of December 31, 2016	Changes in unrealized gains (losses) included in net income relating to positions still held (1)
	Beginning asset/ (liability) balance as of December 31, 2015	Total realized/unrealized gains (losses)		Net purchases, sales, issuances and settlements (4)	Transfers into Level 3	Transfers out of Level 3		
	Included in net income (1)	Included in other comprehensive income (3)						
<i>(in millions)</i>								
Assets								
Fixed maturities, available-for-sale:								
Non-U.S. governments	\$ 79.1	\$ (0.3)	\$ 1.4	\$ 14.5	\$ —	\$ (32.6)	\$ 62.1	\$ (0.3)
Corporate	223.9	(2.2)	(3.2)	26.6	15.7	(1.7)	259.1	(2.2)
Commercial mortgage-backed securities	4.8	(8.3)	8.8	32.7	35.4	(2.3)	71.1	(8.3)
Collateralized debt obligations	63.5	—	0.8	(30.7)	—	—	33.6	—
Other debt obligations	7.5	—	0.5	100.1	—	(16.6)	91.5	—
Total fixed maturities, available-for-sale	378.8	(10.8)	8.3	143.2	51.1	(53.2)	517.4	(10.8)
Fixed maturities, trading	135.5	0.5	—	(43.1)	—	—	92.9	0.1
Equity securities, available-for-sale	4.1	(1.3)	(0.1)	—	—	—	2.7	(1.4)
Other investments	35.1	1.5	—	0.3	—	—	36.9	1.5
Separate account assets (2)	7,013.9	718.9	—	(382.5)	5.3	(0.8)	7,354.8	669.7
Liabilities								
Investment contracts	(177.4)	(5.9)	—	6.8	—	—	(176.5)	(12.6)
Other liabilities	(68.1)	(9.2)	—	17.4	—	—	(59.9)	(7.5)
Derivatives								
Net derivative assets (liabilities)	(3.3)	11.3	0.5	2.8	—	—	11.3	10.4

- (1) Both realized gains (losses) and mark-to-market unrealized gains (losses) are generally reported in net realized capital gains (losses) within the consolidated statements of operations. Realized and unrealized gains (losses) on certain securities with an investment objective to realize economic value through mark-to-market changes are reported in net investment income within the consolidated statements of operations.
- (2) Gains and losses for separate account assets do not impact net income as the change in value of separate account assets is offset by a change in value of separate account liabilities. Foreign currency translation adjustments related to the Principal International segment separate account assets are recorded in AOCI and are offset by foreign currency translation adjustments of the corresponding separate account liabilities.
- (3) Includes foreign currency translation adjustments related to our Principal International segment.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

(4) Gross purchases, sales, issuances and settlements were:

	For the year ended December 31, 2018				Net purchases, sales, issuances and settlements
	Purchases	Sales	Issuances	Settlements	
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale:					
Non-U.S. governments	\$ —	\$ —	\$ —	\$ (1.4)	\$ (1.4)
Corporate	12.9	(10.1)	—	(18.0)	(15.2)
Commercial mortgage-backed securities	—	—	—	0.1	0.1
Collateralized debt obligations	93.6	—	—	(27.3)	66.3
Other debt obligations	152.0	—	—	(4.6)	147.4
Total fixed maturities, available-for-sale	258.5	(10.1)	—	(51.2)	197.2
Fixed maturities, trading	3.7	—	—	—	3.7
Equity securities	—	(15.6)	—	—	(15.6)
Other investments	9.0	—	—	—	9.0
Separate account assets (5)	743.0	(608.4)	(206.5)	205.6	133.7
Liabilities					
Investment contracts	—	—	2.8	4.7	7.5
Derivatives					
Net derivative assets (liabilities)	1.8	3.4	—	—	5.2

	For the year ended December 31, 2017				Net purchases, sales, issuances and settlements
	Purchases	Sales	Issuances	Settlements	
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale:					
Non-U.S. governments	\$ 67.4	\$ (85.0)	\$ —	\$ (1.4)	\$ (19.0)
Corporate	112.3	(89.4)	—	(52.1)	(29.2)
Commercial mortgage-backed securities	—	—	—	(0.7)	(0.7)
Collateralized debt obligations	22.9	—	—	(15.6)	7.3
Other debt obligations	—	—	—	(0.8)	(0.8)
Total fixed maturities, available-for-sale	202.6	(174.4)	—	(70.6)	(42.4)
Fixed maturities, trading	—	—	—	(92.4)	(92.4)
Equity securities, trading	—	—	—	(0.7)	(0.7)
Other investments	2.4	(36.7)	—	—	(34.3)
Separate account assets (5)	401.4	(651.4)	(284.6)	69.8	(464.8)
Liabilities					
Investment contracts	—	—	(0.2)	7.6	7.4
Other liabilities	—	—	—	60.0	60.0
Derivatives					
Net derivative assets (liabilities)	1.5	2.2	—	—	3.7

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
14. Fair Value Measurements — (continued)

	For the year ended December 31, 2016				Net purchases, sales, issuances and settlements
	Purchases	Sales	Issuances	Settlements	
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale:					
Non-U.S. governments	\$ 19.3	\$ (3.4)	\$ —	\$ (1.4)	\$ 14.5
Corporate	66.0	(13.7)	—	(25.7)	26.6
Commercial mortgage-backed securities	35.7	—	—	(3.0)	32.7
Collateralized debt obligations	—	—	—	(30.7)	(30.7)
Other debt obligations	105.0	(2.3)	—	(2.6)	100.1
Total fixed maturities, available-for-sale	226.0	(19.4)	—	(63.4)	143.2
Fixed maturities, trading	—	(18.0)	—	(25.1)	(43.1)
Other investments	0.7	(0.4)	—	—	0.3
Separate account assets (5)	528.0	(654.5)	(345.4)	89.4	(382.5)
Liabilities					
Investment contracts	—	—	1.8	5.0	6.8
Other liabilities	—	17.4	—	—	17.4
Derivatives					
Net derivative assets (liabilities)	0.5	2.3	—	—	2.8

(5) Issuances and settlements include amounts related to mortgage encumbrances associated with real estate in our separate accounts.

Transfers

Transfers of assets and liabilities measured at fair value on a recurring basis between fair value hierarchy levels were as follows:

	For the year ended December 31, 2018					
	Transfers out of Level 1 into Level 2	Transfers out of Level 1 into Level 3	Transfers out of Level 2 into Level 1	Transfers out of Level 2 into Level 3	Transfers out of Level 3 into Level 1	Transfers out of Level 3 into Level 2
	<i>(in millions)</i>					
Assets						
Fixed maturities, available-for-sale:						
Non-U.S. governments	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1.3
Corporate	—	—	—	1.0	—	54.8
Commercial mortgage-backed securities	—	—	—	3.6	—	1.5
Collateralized debt obligations	—	—	—	54.7	—	237.0
Other debt obligations	—	—	—	—	—	91.0
Total fixed maturities, available-for-sale	—	—	—	59.3	—	385.6
Fixed maturities, trading	—	—	—	—	—	3.7
Separate account assets	293.2	—	0.8	2.3	0.2	40.9
For the year ended December 31, 2017						
	Transfers out of Level 1 into Level 2	Transfers out of Level 1 into Level 3	Transfers out of Level 2 into Level 1	Transfers out of Level 2 into Level 3	Transfers out of Level 3 into Level 1	Transfers out of Level 3 into Level 2
	<i>(in millions)</i>					
Assets						
Fixed maturities, available-for-sale:						
Non-U.S. governments	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 35.2
Corporate	—	—	—	22.2	—	125.3
Commercial mortgage-backed securities	—	—	—	26.3	—	84.5
Collateralized debt obligations	—	—	—	183.7	—	101.3
Other debt obligations	—	—	—	0.1	—	88.3
Total fixed maturities, available-for-sale	—	—	—	232.3	—	434.6
Fixed maturities, trading	—	—	—	1.9	—	—
Equity securities, trading	—	—	—	0.7	—	—
Separate account assets	12.5	—	5.9	3.1	—	38.7

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

	For the year ended December 31, 2016					
	Transfers out of Level 1 into Level 2	Transfers out of Level 1 into Level 3	Transfers out of Level 2 into Level 1	Transfers out of Level 2 into Level 3	Transfers out of Level 3 into Level 1	Transfers out of Level 3 into Level 2
	<i>(in millions)</i>					
Assets						
Fixed maturities, available-for-sale:						
Non-U.S. governments	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 32.6
Corporate	—	—	—	15.7	—	1.7
Commercial mortgage-backed securities	—	—	—	35.4	—	2.3
Other debt obligations	—	—	—	—	—	16.6
Total fixed maturities, available-for-sale	—	—	—	51.1	—	53.2
Separate account assets	45.4	—	4.9	5.3	—	0.8

Transfers between fair value hierarchy levels are recognized at the beginning of the reporting period.

Separate account assets transferred from Level 1 to Level 2 during 2018, primarily included cash equivalents as a result of additional analysis to clarify the source of the price. Separate account assets transferred between Level 1 and Level 2 during 2017 and 2016, primarily related to foreign equity securities. When these securities are valued at the close price of the local exchange where the assets traded, they are reflected in Level 1. When events materially affecting the value occur between the close of the local exchange and the New York Stock Exchange, we use adjusted prices determined by a third party pricing vendor to update the foreign market closing prices and the fair value is reflected in Level 2.

Assets transferred into Level 3 during 2018, 2017 and 2016, primarily included those assets for which we are now unable to obtain pricing from a recognized third party pricing vendor as well as assets that were previously priced using a matrix valuation approach that may no longer be relevant when applied to asset-specific situations.

Assets transferred out of Level 3 during 2018, 2017 and 2016, included those for which we are now able to obtain pricing from a recognized third party pricing vendor or from internal models using substantially all market observable information.

Quantitative Information about Level 3 Fair Value Measurements

The following table provides quantitative information about the significant unobservable inputs used for recurring fair value measurements categorized within Level 3, excluding assets and liabilities for which significant quantitative unobservable inputs are not developed internally, which primarily consists of those valued using broker quotes or the

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
14. Fair Value Measurements — (continued)

measurement alternative for CCFEs. Refer to "Assets and liabilities measured at fair value on a recurring basis" for a complete valuation hierarchy summary.

December 31, 2018					
	Assets / (liabilities) measured at fair value <i>(in millions)</i>	Valuation technique(s)	Unobservable input description	Input/range of inputs	Weighted average
Assets					
Fixed maturities, available-for-sale:					
Non-U.S. governments	\$ 4.6	Discounted cash flow	Discount rate (1)	3.2%	3.2%
			Illiquidity premium	50 basis points ("bps")	50bps
			Comparability adjustment	(25)bps	(25)bps
Corporate	25.4	Discounted cash flow	Discount rate (1)	3.3% - 4.5%	3.9%
			Illiquidity premium	0bps - 60bps	36bps
Other debt obligations	1.7	Discounted cash flow	Discount rate (1)	5.0%	5.0%
			Illiquidity premium	500bps	500bps
Separate account assets	8,440.8	Discounted cash flow — mortgage loans	Discount rate (1)	3.3% - 4.7%	4.2%
			Illiquidity premium	0bps - 60bps	56bps
			Credit spread rate	85bps - 172bps	168bps
		Discounted cash flow — real estate	Discount rate (1)	5.6% - 11.5%	6.7%
			Terminal capitalization rate	4.3% - 9.3%	5.8%
			Average market rent growth rate	2.0% - 4.7%	2.9%
		Discounted cash flow — real estate debt	Loan to value	11.0% - 69.3%	45.9%
			Market interest rate	3.9% - 6.0%	4.3%
Liabilities					
Investment contracts (5)	(45.2)	Discounted cash flow	Long duration interest rate	2.8% - 2.9% (2)	
			Long-term equity market volatility	16.7% - 27.8%	
			Non-performance risk	0.6% - 1.6%	
			Utilization rate	See note (3)	
			Lapse rate	1.3% - 16.0%	
			Mortality rate	See note (4)	

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
14. Fair Value Measurements — (continued)

December 31, 2017					
	Assets / (liabilities) measured at fair value (in millions)	Valuation technique(s)	Unobservable input description	Input/range of inputs	Weighted average
Assets					
Fixed maturities, available-for-sale:					
Non-U.S. governments	\$ 6.1	Discounted cash flow	Discount rate (1)	2.7%	2.7%
			Illiquidity premium	50bps	50bps
			Comparability adjustment	(25)bps	(25)bps
Corporate	51.0	Discounted cash flow	Discount rate (1)	1.9% - 7.5%	4.6%
			Illiquidity premium	0bps - 60bps	21bps
			Discount rate (1)	6.0%	6.0%
Commercial mortgage-backed securities	0.5	Discounted cash flow	Probability of default	85.0%	85.0%
			Potential loss severity	32.0%	32.0%
Other debt obligations	2.3	Discounted cash flow	Discount rate (1)	5.0%	5.0%
			Illiquidity premium	500bps	500bps
Separate account assets	7,484.6	Discounted cash flow — mortgage loans	Discount rate (1)	2.3% - 8.0%	4.8%
			Illiquidity premium	0bps - 60bps	17bps
			Credit spread rate	62bps - 690bps	293bps
		Discounted cash flow — real estate	Discount rate (1)	5.8% - 17.2%	6.9%
			Terminal capitalization rate	4.3% - 9.3%	6.1%
			Average market rent growth rate	0.5% - 4.7%	2.9%
		Discounted cash flow — real estate debt	Loan to value	12.1% - 71.4%	45.8%
			Market interest rate	3.1% - 4.5%	3.8%
Liabilities					
Investment contracts (5)	(160.3)	Discounted cash flow	Long duration interest rate	2.5% - 2.7% (2)	
			Long-term equity market volatility	18.7% - 41.1%	
			Non-performance risk	0.2% - 1.2%	
			Utilization rate	See note (3)	
			Lapse rate	1.3% - 16.0%	
			Mortality rate	See note (4)	

(1) Represents market comparable interest rate or an index adjusted rate used as the base rate in the discounted cash flow analysis prior to any illiquidity or other adjustments, where applicable.

(2) Represents the range of rate curves used in the valuation analysis that we have determined market participants would use when pricing the instrument. Derived from interpolation between various observable swap rates.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****14. Fair Value Measurements — (continued)**

- (3) This input factor is the number of contractholders taking withdrawals as well as the amount and timing of the withdrawals and a range does not provide a meaningful presentation.
- (4) This input is based on an appropriate industry mortality table and a range does not provide a meaningful presentation.
- (5) Includes bifurcated embedded derivatives that are reported at net asset (liability) fair value within the same line item in the consolidated statements of financial position in which the host contract is reported.

Market comparable discount rates are used as the base rate in the discounted cash flows used to determine the fair value of certain assets. Increases or decreases in the credit spreads on the comparable assets could cause the fair value of the assets to significantly decrease or increase, respectively. Additionally, we may adjust the base discount rate or the modeled price by applying an illiquidity premium given the highly structured nature of certain assets. Increases or decreases in this illiquidity premium could cause significant decreases or increases, respectively, in the fair value of the asset.

Embedded derivatives within our investment contracts liability can be in either an asset or liability position, depending on certain inputs at the reporting date. Increases to an asset or decreases to a liability are described as increases to fair value. Increases or decreases in market volatilities could cause significant decreases or increases, respectively, in the fair value of embedded derivatives in investment contracts. Long duration interest rates are used as the mean return when projecting the growth in the value of associated account value and impact the discount rate used in the discounted future cash flows valuation. The amount of claims will increase if account value is not sufficient to cover guaranteed withdrawals. Increases or decreases in risk-free rates could cause the fair value of the embedded derivative to significantly increase or decrease, respectively. Increases or decreases in our own credit risks, which impact the rates used to discount future cash flows, could significantly increase or decrease, respectively, the fair value of the embedded derivative. All of these changes in fair value would impact net income.

Decreases or increases in the mortality rate assumption could cause the fair value of the embedded derivative to decrease or increase, respectively. Decreases or increases in the overall lapse rate assumption could cause the fair value of the embedded derivative to decrease or increase, respectively. The lapse rate assumption varies dynamically based on the relationship of the guarantee and associated account value. A stronger or weaker dynamic lapse rate assumption could cause the fair value of the embedded derivative to decrease or increase, respectively. The utilization rate assumption includes how many contractholders will take withdrawals, when they will take them and how much of their benefit they will take. Increases or decreases in the assumption of the number of contractholders taking withdrawals could cause the fair value of the embedded derivative to decrease or increase, respectively. Assuming contractholders take withdrawals earlier or later could cause the fair value of the embedded derivative to decrease or increase, respectively. Assuming contractholders take more or less of their benefit could cause the fair value of the embedded derivative to decrease or increase, respectively.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

No significant assets and liabilities were measured at fair value on a nonrecurring basis for the years ended December 31, 2018, 2017 and 2016.

Fair Value Option

We elected fair value accounting for:

- Certain commercial mortgage loans of consolidated VIEs for which it was not practicable for us to determine the carrying value. In addition, we had certain obligations of consolidated VIEs held by a synthetic entity for which it was not practicable for us to determine the carrying value. The synthetic entity matured in the first quarter of 2017.
- Certain real estate ventures that are subject to the equity method of accounting because the nature of the investments is to add value to the properties and generate income from the operations of the properties. Other equity method real estate investments are not fair valued because the investments mainly generate income from the operations of the underlying properties.
- In 2017, we had certain investment funds for which we did not have enough influence to account for under the equity method in order to reflect the economics of the investment in the financial statements. We did not elect the fair value option for other similar investments as these investments are generally accounted for under the equity method of accounting.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

14. Fair Value Measurements — (continued)

The following tables present information regarding the assets and liabilities for which the fair value option was elected.

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Commercial mortgage loans of consolidated VIEs (1) (2)		
Fair value	\$ 6.4	\$ 9.3
Aggregate contractual principal	6.5	9.2
Real estate ventures (1)		
Fair value	17.2	6.5
Investment funds (1)		
Fair value	—	45.2

(1) Reported with other investments in the consolidated statements of financial position.

(2) None of the loans were more than 90 days past due or in non-accrual status.

	For the year ended December 31,		
	<u>2018</u>	<u>2017</u>	<u>2016</u>
Commercial mortgage loans of consolidated VIEs			
Change in fair value pre-tax loss (1) (2)	\$ (0.2)	\$ (0.4)	\$ (0.1)
Interest income (3)	0.7	0.9	1.2
Obligations of consolidated VIEs			
Change in fair value pre-tax loss — instrument specific credit risk (2) (4)	—	(0.1)	(9.8)
Change in fair value pre-tax loss (2)	—	(0.1)	(9.8)
Interest expense (5)	—	0.3	1.1
Real estate ventures			
Change in fair value pre-tax gain (6)	1.7	3.8	1.5
Investment funds			
Change in fair value pre-tax gain (6) (7)	—	1.7	2.8
Dividend income (6)	—	1.9	0.3

(1) None of the change in fair value related to instrument-specific credit risk.

(2) Reported in net realized capital gains (losses) on the consolidated statements of operations.

(3) Reported in net investment income on the consolidated statements of operations and recorded based on the effective interest rates as determined at the closing of the loan.

(4) Estimated based on credit spreads and quality ratings.

(5) Reported in operating expenses on the consolidated statements of operations.

(6) Reported in net investment income on the consolidated statements of operations.

(7) Absent the fair value election, the change in fair value on the investments would be reported in OCI.

Principal Financial Group, Inc.
Notes to Consolidated Financial Statements — (continued)
December 31, 2018
14. Fair Value Measurements — (continued)
Financial Instruments Not Reported at Fair Value

The carrying value and estimated fair value of financial instruments not recorded at fair value on a recurring basis but required to be disclosed at fair value were as follows:

December 31, 2018					
	Carrying amount	Fair value	Fair value hierarchy level		
			Level 1	Level 2	Level 3
<i>(in millions)</i>					
Assets (liabilities)					
Mortgage loans	\$ 15,336.9	\$ 15,383.6	\$ —	\$ —	\$ 15,383.6
Policy loans	801.4	965.5	—	—	965.5
Other investments	247.4	239.8	—	157.5	82.3
Cash and cash equivalents	1,201.6	1,201.6	1,148.6	53.0	—
Investment contracts	(32,572.1)	(31,428.2)	—	(4,085.7)	(27,342.5)
Short-term debt	(42.9)	(42.9)	—	(42.9)	—
Long-term debt	(3,259.6)	(3,257.1)	—	(3,129.3)	(127.8)
Separate account liabilities	(132,562.9)	(131,491.4)	—	—	(131,491.4)
Bank deposits (1)	(500.0)	(489.1)	—	(489.1)	—
Cash collateral payable	(79.5)	(79.5)	(79.5)	—	—
December 31, 2017					
	Carrying amount	Fair value	Fair value hierarchy level		
			Level 1	Level 2	Level 3
<i>(in millions)</i>					
Assets (liabilities)					
Mortgage loans	\$ 14,150.5	\$ 14,443.2	\$ —	\$ —	\$ 14,443.2
Policy loans	808.3	998.4	—	—	998.4
Other investments	236.8	234.0	—	159.4	74.6
Cash and cash equivalents	677.5	677.5	659.9	17.6	—
Investment contracts	(31,003.0)	(30,468.8)	—	(4,736.1)	(25,732.7)
Short-term debt	(39.5)	(39.5)	—	(39.5)	—
Long-term debt	(3,178.4)	(3,442.5)	—	(3,393.5)	(49.0)
Separate account liabilities	(145,552.5)	(144,300.5)	—	—	(144,300.5)
Bank deposits (1)	(2,336.4)	(2,328.9)	(1,780.3)	(548.6)	—
Cash collateral payable	(125.8)	(125.8)	(125.8)	—	—

(1) Deposit liabilities without defined or contractual maturities are no longer in scope of these disclosures upon adoption of authoritative guidance effective January 1, 2018.

15. Statutory Insurance Financial Information

Principal Life, the largest indirect subsidiary of PFG, prepares statutory financial statements in accordance with the accounting practices prescribed or permitted by the Insurance Division of the Department of Commerce of the State of Iowa (the "State of Iowa"). The State of Iowa recognizes only statutory accounting practices prescribed or permitted by the State of Iowa for determining and reporting the financial condition and results of operations of an insurance company to determine its solvency under the Iowa Insurance Law. The National Association of Insurance Commissioners' ("NAIC") Accounting Practices and Procedures Manual has been adopted as a component of prescribed practices by the State of Iowa. The Commissioner has the right to permit other specific practices that deviate from prescribed practices. For the years ended, December 31, 2018 and 2017, Principal Life's use of prescribed statutory accounting practices resulted in higher statutory surplus of \$546.3 million and \$275.6 million, respectively, relative to the accounting practices and procedures of the NAIC due to its accounting for reserve credits associated with a reinsurance transaction with an affiliated reinsurer. In addition, as of December 31, 2018 and 2017, Principal Life's permitted statutory accounting practice relating to variable annuities with a guaranteed living benefit rider resulted in lower statutory surplus of \$69.9 million and \$123.9 million, respectively, relative to carrying certain interest rate swaps at book value rather than fair value, as if they received hedge accounting treatment for statutory. Statutory accounting practices differ from U.S. GAAP primarily due to charging policy acquisition costs to expense as incurred, establishing reserves using different actuarial

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****15. Statutory Insurance Financial Information — (continued)**

assumptions, valuing investments on a different basis and not admitting certain assets, including certain net deferred income tax assets.

Principal Life cedes certain term and universal life insurance statutory reserves to our affiliated reinsurance subsidiaries on a funds withheld coinsurance basis. The reserves are secured by cash, invested assets and financing provided by highly rated third parties. As of December 31, 2018 and 2017, our affiliated reinsurance subsidiaries assumed statutory reserves of \$6,850.3 million and \$5,977.3 million from Principal Life, respectively. In the states of Vermont and Delaware, the affiliated reinsurers had permitted and prescribed practices allowing for the admissibility of certain assets backing these reserves. As of December 31, 2018 and 2017, assets admitted under these practices totaled \$2,852.0 million and \$2,417.7 million, respectively.

Life and health insurance companies are subject to certain risk-based capital ("RBC") requirements as specified by the NAIC. Under those requirements, the amount of capital and surplus maintained by a life and health insurance company is to be determined based on the various risk factors related to it. As of December 31, 2018, Principal Life met the minimum RBC requirements.

Statutory net income and statutory capital and surplus of Principal Life were as follows:

	As of or for the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Statutory net income	\$ 1,017.6	\$ 1,976.7	\$ 996.7
Statutory capital and surplus	5,319.6	4,946.8	4,643.8

16. Segment Information

We provide financial products and services through the following segments: Retirement and Income Solutions, Principal Global Investors, Principal International and U.S. Insurance Solutions. In addition, we have a Corporate segment. The segments are managed and reported separately because they provide different products and services, have different strategies or have different markets and distribution channels.

The Retirement and Income Solutions segment provides retirement and related financial products and services primarily to businesses, their employees and other individuals. The segment is organized into Retirement and Income Solutions — Fee, which includes full service accumulation, trust services and individual variable annuities; and Retirement and Income Solutions — Spread, which includes individual fixed annuities, investment only, pension risk transfer (formerly known as full service payout) and banking services.

The Principal Global Investors segment provides asset management services to our asset accumulation business, our insurance operations, the Corporate segment and third party clients. This segment also includes our mutual fund business.

The Principal International segment has operations in Latin America (Brazil, Chile and Mexico) and Asia (China, Hong Kong Special Administrative Region, India and Southeast Asia). We focus on locations with large middle classes, favorable demographics and growing long-term savings, ideally with voluntary or mandatory pension markets. We entered these locations through acquisitions, start-up operations and joint ventures.

The U.S. Insurance Solutions segment focuses on solutions for individuals and small-to-medium sized businesses and their employees. The segment is organized into Specialty Benefits insurance, which provides group dental and vision insurance, individual and group disability insurance, critical illness, accident, group life insurance and non-medical fee-for-service claims administration; and Individual Life insurance, which provides universal life, variable universal life, indexed universal life and traditional life insurance.

Our Corporate segment manages the assets representing capital that has not been allocated to any other segment. Financial results of the Corporate segment primarily reflect our financing activities (including financing costs), income on capital not allocated to other segments, inter-segment eliminations, income tax risks and certain income, expenses and other adjustments not allocated to the segments based on the nature of such items. Results of Principal Securities, Inc. ("PSI"), our retail broker-dealer and registered investment advisor ("RIA"); RobustWealth, Inc. ("RobustWealth"), our financial technology company; and our exited group medical and long-term care insurance businesses are reported in this segment.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****16. Segment Information — (continued)**

Management uses segment pre-tax operating earnings in evaluating performance, which is consistent with the financial results provided to and discussed with securities analysts. We determine segment pre-tax operating earnings by adjusting U.S. GAAP income before income taxes for pre-tax net realized capital gains (losses), as adjusted, pre-tax other adjustments that management believes are not indicative of overall operating trends and certain adjustments related to equity method investments and noncontrolling interest. While these items may be significant components in understanding and assessing the consolidated financial performance, management believes the presentation of pre-tax operating earnings enhances the understanding of our results of operations by highlighting pre-tax earnings attributable to the normal, ongoing operations of the business.

The pre-tax net realized capital gains (losses), as adjusted, excluded from pre-tax operating earnings reflects consolidated U.S. GAAP pre-tax net realized capital gains (losses) excluding the following items that are included in pre-tax operating earnings:

- Periodic settlements and accruals on derivative instruments not designated as hedging instruments and
- Certain market value adjustments of embedded derivatives.

Pre-tax net realized capital gains (losses), as adjusted, are further adjusted for:

- Amortization of hedge accounting book value adjustments for certain discontinued hedges,
- Certain market value adjustments to fee revenues,
- Pre-tax net realized capital gains (losses) adjustments related to equity method investments,
- Pre-tax net realized capital gains (losses) adjustments related to sponsored investment funds,
- Recognition of deferred front-end fee revenues for sales charges on retirement and life insurance products and services,
- Related changes in the amortization pattern of DAC and related actuarial balances and
- Net realized capital gains (losses) distributed.

Segment operating revenues reflect consolidated U.S. GAAP total revenues excluding:

- Net realized capital gains (losses), except periodic settlements and accruals on derivatives not designated as hedging instruments, and their impact on:
 - Amortization of hedge accounting book value adjustments for certain discontinued hedges,
 - Certain market value adjustments to fee revenues,
 - Pre-tax net realized capital gains (losses) adjustments related to equity method investments,
 - Pre-tax net realized capital gains (losses) adjustments related to sponsored investment funds and
 - Recognition of deferred front-end fee revenues for sales charges on retirement and life insurance products and services.
- Pre-tax other adjustments and income taxes of equity method investments and
- Pre-tax other adjustments management believes are not indicative of overall operating trends.

The accounting policies of the segments are consistent with the accounting policies for the consolidated financial statements, with the exception of: (1) pension and OPEB cost allocations and (2) income tax allocations. For purposes of determining pre-tax operating earnings, the segments are allocated the service component of pension and other postretirement benefit costs. The Corporate segment reflects the non-service components of pension and other postretirement benefit costs as assumptions are established and funding decisions are managed from a company-wide perspective. The Corporate segment functions to absorb the risk inherent in interpreting and applying tax law. For purposes of determining non-GAAP operating earnings, the segments are allocated tax adjustments consistent with the positions we took on tax returns. The Corporate segment results reflect any differences between the tax returns and the estimated resolution of any disputes.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

16. Segment Information — (continued)

The following tables summarize select financial information by segment, including operating revenues for our products and services, and reconcile segment totals to those reported in the consolidated financial statements:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
	<i>(in millions)</i>	
Assets:		
Retirement and Income Solutions	\$ 163,833.6	\$ 169,757.8
Principal Global Investors	2,301.0	2,322.9
Principal International	46,701.2	51,684.0
U.S. Insurance Solutions	25,388.2	25,092.9
Corporate	4,812.1	5,083.6
Total consolidated assets	<u>\$ 243,036.1</u>	<u>\$ 253,941.2</u>

	For the year ended		
	December 31,		
	<u>2018</u>	<u>2017</u>	<u>2016</u>
	<i>(in millions)</i>		
Operating revenues by segment:			
Retirement and Income Solutions:			
Retirement and Income Solutions — Fee	\$ 1,831.0	\$ 1,821.0	\$ 1,743.2
Retirement and Income Solutions — Spread	5,454.9	5,344.6	4,407.5
Total Retirement and Income Solutions (1)	7,285.9	7,165.6	6,150.7
Principal Global Investors (2)	1,736.3	1,444.4	1,387.1
Principal International	1,372.9	1,251.5	1,252.0
U.S. Insurance Solutions:			
Specialty Benefits insurance	2,329.4	2,171.8	2,011.4
Individual Life insurance	1,751.7	1,731.0	1,626.1
Eliminations	(0.2)	(0.2)	(0.2)
Total U.S. Insurance Solutions	4,080.9	3,902.6	3,637.3
Corporate	(51.2)	(60.8)	(46.3)
Total segment operating revenues	14,424.8	13,703.3	12,380.8
Net realized capital gains (losses), net of related revenue adjustments	(132.3)	472.2	80.9
Adjustments related to equity method investments	(55.3)	(82.3)	(67.6)
Total revenues per consolidated statements of operations	<u>\$ 14,237.2</u>	<u>\$ 14,093.2</u>	<u>\$ 12,394.1</u>
Pre-tax operating earnings (losses) by segment:			
Retirement and Income Solutions	\$ 880.6	\$ 899.8	\$ 794.5
Principal Global Investors	553.2	469.7	443.8
Principal International	255.7	330.0	288.1
U.S. Insurance Solutions	443.6	384.7	361.2
Corporate	(178.6)	(210.5)	(218.9)
Total segment pre-tax operating earnings	1,954.5	1,873.7	1,668.7
Pre-tax net realized capital gains (losses), as adjusted (3)	(126.4)	520.3	46.3
Pre-tax other adjustments (4)	—	(70.0)	(86.4)
Adjustments related to equity method investments and noncontrolling interest	(43.7)	(71.8)	(36.9)
Income before income taxes per consolidated statements of operations	<u>\$ 1,784.4</u>	<u>\$ 2,252.2</u>	<u>\$ 1,591.7</u>

(1) Reflects inter-segment revenues of \$393.6 million, \$402.8 million and \$373.3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

(2) Reflects inter-segment revenues of \$262.8 million, \$250.9 million and \$235.7 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

16. Segment Information — (continued)

- (3) Pre-tax net realized capital gains (losses), as adjusted, is derived as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Net realized capital gains (losses)	\$ (75.4)	\$ 524.2	\$ 171.1
Derivative and hedging-related adjustments	(64.9)	(59.4)	(94.1)
Market value adjustments to fee revenues	0.1	(0.1)	(2.5)
Adjustments related to equity method investments	(5.4)	1.4	0.1
Adjustments related to sponsored investment funds	12.9	6.3	6.1
Recognition of front-end fee revenue	0.4	(0.2)	0.2
Net realized capital gains (losses), net of related revenue adjustments	(132.3)	472.2	80.9
Amortization of deferred acquisition costs and other actuarial balances	(27.0)	55.0	(77.4)
Capital (gains) losses distributed	14.4	(55.0)	(7.2)
Market value adjustments of embedded derivatives	18.5	48.1	50.0
Pre-tax net realized capital gains (losses), as adjusted (a)	<u>\$ (126.4)</u>	<u>\$ 520.3</u>	<u>\$ 46.3</u>

(a) As adjusted before noncontrolling interest capital gains (losses) and net realized capital gains (losses) associated with exited group medical insurance business.

- (4) For the year ended December 31, 2017, pre-tax other adjustments included the negative effect of a contribution to The Principal Financial Group Foundation, Inc.

For the year ended December 31, 2016, pre-tax other adjustments included the negative effect of one-time costs incurred to extinguish long-term debt.

The following is a summary of income tax expense (benefit) allocated to our segments for purposes of determining non-GAAP operating earnings. Segment income taxes are reconciled to income taxes reported on our consolidated statements of operations.

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Income tax expense (benefit) by segment:			
Retirement and Income Solutions	\$ 76.9	\$ 109.5	\$ 98.6
Principal Global Investors	147.2	181.9	166.8
Principal International	69.8	81.8	62.7
U.S. Insurance Solutions	80.7	124.2	118.8
Corporate	(17.6)	(102.3)	(109.3)
Total segment income taxes from operating earnings	357.0	395.1	337.6
Tax expense (benefit) related to net realized capital losses, as adjusted	(71.4)	209.1	(6.6)
Tax benefit related to other after-tax adjustments (1)	—	(594.5)	(34.4)
Certain adjustments related to equity method investments and noncontrolling interest	(54.9)	(82.0)	(66.7)
Total income taxes per consolidated statements of operations	<u>\$ 230.7</u>	<u>\$ (72.3)</u>	<u>\$ 229.9</u>

- (1) The 2017 tax benefit includes \$568.3 million associated with the U.S. tax reform.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

16. Segment Information — (continued)

The following is a summary of depreciation and amortization expense allocated to our segments for purposes of determining pre-tax operating earnings. Segment depreciation and amortization is reconciled to depreciation and amortization included in operating expenses in our consolidated statements of operations.

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Depreciation and amortization expense by segment:			
Retirement and Income Solutions	\$ 32.5	\$ 30.6	\$ 30.4
Principal Global Investors	21.9	19.8	18.8
Principal International	59.6	53.1	50.1
U.S. Insurance Solutions	26.2	28.1	26.8
Corporate	10.8	8.2	7.4
Total depreciation and amortization expense included in our consolidated statements of operations	<u>\$ 151.0</u>	<u>\$ 139.8</u>	<u>\$ 133.5</u>

17. Revenues from Contracts with Customers

The following tables summarize disaggregation of revenues from contracts with customers, including select financial information by segment, and reconcile totals to those reported in the consolidated financial statements. Revenues from contracts with customers are included in fees and other revenues on the consolidated statements of operations.

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Revenue from contracts with customers by segment:			
Retirement and Income Solutions:			
Retirement and Income Solutions — Fee	\$ 252.4	\$ 258.0	\$ 259.1
Retirement and Income Solutions — Spread	10.5	10.2	8.8
Total Retirement and Income Solutions	262.9	268.2	267.9
Principal Global Investors	1,700.5	1,406.1	1,348.9
Principal International	477.1	426.4	398.7
U.S. Insurance Solutions:			
Specialty Benefits insurance	14.8	13.9	13.4
Individual Life insurance	42.4	36.4	36.6
Eliminations	(0.2)	(0.2)	(0.2)
Total U.S. Insurance Solutions	57.0	50.1	49.8
Corporate	161.4	148.4	125.7
Total segment revenue from contracts with customers	2,658.9	2,299.2	2,191.0
Adjustments for fees and other revenues not within the scope of revenue recognition guidance (1)	1,614.4	1,593.4	1,438.7
Pre-tax other adjustments (2)	0.5	(0.3)	(2.3)
Total fees and other revenues per consolidated statements of operations	<u>\$ 4,273.8</u>	<u>\$ 3,892.3</u>	<u>\$ 3,627.4</u>

- (1) Fees and other revenues not within the scope of the revenue recognition guidance primarily represent revenue on contracts accounted for under the financial instruments or insurance contracts standards.
- (2) Pre-tax other adjustments relate to the recognition of deferred front-end fee revenues for sales charges on retirement and life insurance products and certain market value adjustments to fee revenues.

Retirement and Income Solutions — Fee

Retirement and Income Solutions — Fee offers service and trust agreements for defined contribution plans, including 401(k) plans, 403(b) plans, and employee stock ownership plans. The investment components of these service agreements are in the form of mutual fund offerings. In addition, plan sponsor trust services are also available through an affiliated trust company.

Fees and other revenues are earned for administrative activities performed for the defined contribution plans including recordkeeping and reporting as well as trust, asset management and investment services. The majority of these activities are performed daily over time. Fee-for-service transactions are also provided upon client request. These services

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

17. Revenues from Contracts with Customers — (continued)

are considered distinct or grouped into a bundle until a distinct performance obligation is identified. Some performance obligations are considered a series of distinct services, which are substantially the same and have the same pattern of transfer to the customer.

Fees and other revenues can be based on a fixed contractual rate for these services or can be variable based upon contractual rates applied to the market value of the client's investment portfolio each day. If the consideration for this series of performance obligations is based on daily market value, it is considered variable each day as the services are performed over time. The consideration becomes unconstrained and thus recognized as revenue for each day's series of distinct services once the market value of the clients' investment portfolios is determined at market close or carried over at the end of the day for days when the market is closed. Additionally, fixed fees and other revenues are recognized point-in-time as fee-for-service transactions upon completion.

The types of revenues from contracts with customers were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Administrative service fee revenue	\$ 250.7	\$ 256.4	\$ 249.1
Other fee revenue	1.7	1.6	10.0
Total revenues from contracts with customers	252.4	258.0	259.1
Fees and other revenues not within the scope of revenue recognition guidance	1,132.9	1,111.2	1,021.5
Total fees and other revenues	1,385.3	1,369.2	1,280.6
Premiums and other considerations	4.0	3.8	0.3
Net investment income	441.7	448.0	462.3
Total operating revenues	\$ 1,831.0	\$ 1,821.0	\$ 1,743.2

Retirement and Income Solutions — Spread

Retirement and Income Solutions — Spread offers individual retirement accounts ("IRAs") through Principal Bank, which are primarily funded by retirement savings rolled over from qualified retirement plans. The IRAs are held in savings accounts, money market accounts and certificates of deposit. Revenues are earned through fees as the performance of establishing and maintaining IRA accounts is completed. Fee-for-service transactions are also provided upon client request. The establishment fees and annual maintenance fees are accrued into earnings over a period of time using the average account life. Upfront and recurring bank fees are related to performance obligations that have the same pattern of transfer to the customer and are recognized in income over time with control transferred to the customers utilizing the output method. These fees are based on a fixed contractual rate. Fixed fees and other revenues are also recognized point-in-time as fee-for-service transactions upon completion.

The types of revenues from contracts with customers were as follows:

	For the year ended		
	December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Deposit account fee revenue	\$ 10.5	\$ 10.2	\$ 8.8
Total revenues from contracts with customers	10.5	10.2	8.8
Fees and other revenues not within the scope of revenue recognition guidance	12.5	15.0	15.3
Total fees and other revenues	23.0	25.2	24.1
Premiums and other considerations	3,631.9	3,667.3	2,860.6
Net investment income	1,800.0	1,652.1	1,522.8
Total operating revenues	\$ 5,454.9	\$ 5,344.6	\$ 4,407.5

Principal Global Investors

Fees and other revenues earned for asset management, investment advisory and distribution services provided to institutional and retail clients are based largely upon contractual rates applied to the specified amounts of the clients' portfolios. Each service is a distinct performance obligation, or a series of distinct services that are a single performance

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****17. Revenues from Contracts with Customers — (continued)**

obligation in that the services are substantially the same and have the same pattern of transfer to the customer. Fees and other revenues received for performance obligations such as asset management and other services are typically recognized over time utilizing the output method as the service is performed. Performance fees and transaction fees on certain accounts are recognized in income when the probability of significant reversal will not occur upon resolution of the uncertainty, which could be based on a variety of factors such as market performance or other internal metrics. Asset management fees are accrued each month based on the fee terms within the applicable agreement and are generally billed quarterly when values used for the calculation are available. Management fees and performance fees are variable consideration as they are subject to fluctuation based on assets under management ("AUM") and other constraints. These fees are not recognized until unconstrained at the end of each reporting period.

The types of revenues from contracts with customers were as follows:

	For the year ended December 31,		
	2018	2017 <i>(in millions)</i>	2016
Management fee revenue	\$ 1,244.5	\$ 1,217.0	\$ 1,120.2
Other fee revenue (1)	456.0	189.1	228.7
Total revenues from contracts with customers	1,700.5	1,406.1	1,348.9
Fees and other revenues not within the scope of revenue recognition guidance	30.4	28.1	24.2
Total fees and other revenues	1,730.9	1,434.2	1,373.1
Net investment income	5.4	10.2	14.0
Total operating revenues	<u>\$ 1,736.3</u>	<u>\$ 1,444.4</u>	<u>\$ 1,387.1</u>

(1) During the third quarter of 2018, we recognized a \$253.1 million accelerated performance fee resulting from the realignment of a real estate investment team.

Principal International

Fees and other revenues are earned for asset management and distribution services provided to retail and institutional clients in addition to trustee and/or administrative services performed for retirement savings plans. Each service is considered a distinct performance obligation; however, if the services are not distinct on their own, we combine them into a distinct bundle or we have a series of distinct services that are substantially the same and have the same pattern of transfer to the customer. Fees and other revenues are typically based upon contractual rates applied to the market value of the clients' investment portfolios and are considered variable consideration. The transaction price generally includes the amount determined at the end of the reporting period, whereby fees are deducted from the clients' investment portfolios and are recognized as revenue when no longer constrained and satisfied as the services are performed over time utilizing the output method. In addition, payments to customers can take the form of an incentive given by us to entice the customer to purchase its goods or services. Incentives offered to customers are recognized as part of the transaction price as a reduction of revenue either over the period the customer remains in order to receive the incentive or monthly throughout the life of the contract.

Incentive-based fees are recognized in income when the probability of significant reversal will not occur upon the resolution of the uncertainty, which is based on market performance.

Fees for managing customers' mandatory retirement savings accounts in Chile are collected with each monthly deposit made by our customers. If a customer stops contributing before retirement age, we collect no fees but services are still provided. We recognize revenue from these contracts as services are performed over the life of the contract and review annually.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****17. Revenues from Contracts with Customers — (continued)**

The types of revenues from contracts with customers were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Management fee revenue	\$ 472.1	\$ 414.6	\$ 392.8
Other fee revenue	5.0	11.8	5.9
Total revenues from contracts with customers	477.1	426.4	398.7
Fees and other revenues not within the scope of revenue recognition guidance	7.3	7.1	8.7
Total fees and other revenues	484.4	433.5	407.4
Premiums and other considerations	317.2	218.0	274.6
Net investment income	571.3	600.0	570.0
Total operating revenues	\$ 1,372.9	\$ 1,251.5	\$ 1,252.0
Revenues from contracts with customers by region:			
Latin America	\$ 370.8	\$ 318.9	\$ 309.6
Asia	106.3	108.3	89.7
Principal International corporate / regional offices	0.9	0.7	0.9
Eliminations	(0.9)	(1.5)	(1.5)
Total revenues from contracts with customers	\$ 477.1	\$ 426.4	\$ 398.7

U.S. Insurance Solutions

Fees and other revenues are earned for administrative services performed including recordkeeping and reporting services for fee-for-service products, nonqualified benefit plans, separate accounts and dental networks. Services within contracts are not distinct on their own; however, we combine the services into a distinct bundle and account for the bundle as a single performance obligation, which is satisfied over time utilizing the output method as services are rendered. The transaction price corresponds with the performance completed to date, for which the value is recognized as revenue during the period. Variability of consideration is resolved at the end of each period and payments are due when billed.

Commission income is earned through sponsored brokerage services. Performance obligations are satisfied at a point in time, upon delivery of a placed case, and the transaction price calculated per the compensation schedule is recognized as revenue.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****17. Revenues from Contracts with Customers — (continued)**

The types of revenues from contracts with customers were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Specialty Benefits Insurance:			
Administrative service fees	\$ 14.8	\$ 13.9	\$ 13.4
Total revenues from contracts with customers	14.8	13.9	13.4
Fees and other revenues not within the scope of revenue recognition guidance	20.6	21.3	22.6
Total fees and other revenues	35.4	35.2	36.0
Premiums and other considerations	2,134.1	1,985.9	1,826.3
Net investment income	159.9	150.7	149.1
Total operating revenues	<u>\$ 2,329.4</u>	<u>\$ 2,171.8</u>	<u>\$ 2,011.4</u>
Individual Life Insurance:			
Administrative service fees	\$ 22.8	\$ 21.5	\$ 19.6
Commission income	19.6	14.9	17.0
Total revenues from contracts with customers	42.4	36.4	36.6
Fees and other revenues not within the scope of revenue recognition guidance	727.0	703.5	622.2
Total fees and other revenues	769.4	739.9	658.8
Premiums and other considerations	322.4	342.4	337.3
Net investment income	659.9	648.7	630.0
Total operating revenues	<u>\$ 1,751.7</u>	<u>\$ 1,731.0</u>	<u>\$ 1,626.1</u>

Corporate

Fees and other revenues are earned on the performance of selling and servicing of securities and related products offered through PSI, an introducing broker-dealer registered with the FINRA.

PSI enters into selling and distribution agreements with the obligation to sell or distribute the securities products, such as mutual funds, annuities and products sold through RIAs, to individual clients in return for a front-end sales charges, 12b-1 service fees, annuity fees and asset-based fees. Front-end sales charges, 12b-1 fees and annuity fees are related to a single sale and are earned at the time of sale. PSI also enters into agreements with individual customers to provide securities trade execution and custody through a brokerage services platform in return for ticket charge and other service fee revenue. These services are bundled as one single distinct service referred to as brokerage services. This revenue is related to distinct transactions and is earned at a point in time.

PSI also enters into agreements with individual customers to provide trade execution, clearing services, custody services and investment research services through our proprietary offered fee-based products. These services are bundled as one single distinct service referred to as advisory services. In addition, for outside RIA business PSI performs sales and distribution services only. The revenues are earned over time as the service is performed utilizing the output method.

A majority of our revenue is based upon contractual rates applied to the market value of the clients' portfolios and considered variable consideration.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****17. Revenues from Contracts with Customers — (continued)**

The Corporate segment also includes inter-segment eliminations of fees and other revenues. The types of revenues from contracts with customers were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Commission income	\$ 316.1	\$ 299.7	\$ 279.3
Other fee revenue	35.4	30.1	23.9
Eliminations	<u>(190.1)</u>	<u>(181.4)</u>	<u>(177.5)</u>
Total revenues from contracts with customers	161.4	148.4	125.7
Fees and other revenues not within the scope of revenue recognition guidance	<u>(316.3)</u>	<u>(292.8)</u>	<u>(275.8)</u>
Total fees and other revenues	(154.9)	(144.4)	(150.1)
Net investment income	103.7	83.6	103.8
Total operating revenues	<u>\$ (51.2)</u>	<u>\$ (60.8)</u>	<u>\$ (46.3)</u>

Contract Costs

Sales compensation and other incremental costs of obtaining a contract are capitalized and amortized over the period of contract benefit if the costs are expected to be recovered. The contract cost asset, which is included in other assets on the consolidated statements of financial position, was \$137.6 million as of December 31, 2018.

We apply the practical expedient for certain costs where we recognize the incremental costs of obtaining these contracts as an expense when incurred if the amortization period of the assets is one year or less. These costs, along with costs that are not deferrable, are included in operating expenses on the consolidated statements of operations.

Deferred contract costs consist primarily of commissions and variable compensation. We amortize capitalized contract costs on a straight-line basis over the expected contract life, reflecting lapses as they are incurred. Deferred contract costs on contracts are subject to impairment testing on an annual basis, or when a triggering event occurs that could warrant an impairment. To the extent future revenues less future maintenance expenses are not adequate to cover the asset balance, an impairment is recognized. For the year ended December 31, 2018, \$23.8 million of amortization expense was recorded in operating expenses on the consolidated statements of operations and no impairment loss was recognized in relation to the costs capitalized.

18. Stock-Based Compensation Plans

As of December 31, 2018, we had the 2014 Stock Incentive Plan, the Employee Stock Purchase Plan, the 2014 Directors Stock Plan, the Amended and Restated 2010 Stock Incentive Plan, the 2005 Directors Stock Plan, the Stock Incentive Plan and the Directors Stock Plan ("Stock-Based Compensation Plans"). As of May 20, 2014, no new grants will be made under the Amended and Restated 2010 Stock Incentive Plan or the 2005 Directors Stock Plan. No grants have been made under the Stock Incentive Plan or the Directors Stock Plan since at least 2005. Under the terms of the 2014 Stock Incentive Plan, grants may be nonqualified stock options, incentive stock options qualifying under Section 422 of the Internal Revenue Code, restricted stock, restricted stock units, stock appreciation rights, performance shares, performance units or other stock-based awards. The 2014 Directors Stock Plan provides for the grant of nonqualified stock options, restricted stock, restricted stock units or other stock-based awards to our nonemployee directors. To date, we have not granted any incentive stock options, restricted stock or performance units under any plans.

As of December 31, 2018, the maximum number of new shares of common stock available for grant under the 2014 Stock Incentive Plan and the 2014 Directors Stock Plan was 8.7 million.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

18. Stock-Based Compensation Plans — (continued)

For awards with graded vesting, we use an accelerated expense attribution method. The compensation cost that was charged against net income for stock-based awards granted under the Stock-Based Compensation Plans was as follows:

	For the year ended December 31,		
	2018	2017	2016
	(in millions)		
Compensation cost	\$ 77.5	\$ 80.6	\$ 73.8
Related income tax benefit	16.7	27.1	21.5
Capitalized as part of an asset	1.9	2.5	2.8

Nonqualified Stock Options

Nonqualified stock options were granted to certain employees under the 2014 Stock Incentive Plan, the Amended and Restated 2010 Stock Incentive Plan and the Stock Incentive Plan. Options outstanding were granted at an exercise price equal to the fair market value of our common stock on the date of grant and expire ten years after the grant date. These options have graded vesting over a three-year period, except in the case of specific types of terminations. Total options granted were 0.8 million, 0.7 million and 1.1 million during 2018, 2017 and 2016, respectively.

The following is a summary of the status of all of our stock option plans:

	Number of options (in millions)	Weighted- average exercise price	Intrinsic value (in millions)
Options outstanding as of January 1, 2018	4.3	\$ 42.65	
Granted	0.8	63.98	
Exercised	0.8	39.23	
Expired	0.1	57.26	
Options outstanding as of December 31, 2018	<u>4.2</u>	<u>\$ 46.77</u>	<u>\$ 20.0</u>
Options vested or expected to vest as of December 31, 2018	<u>4.2</u>	<u>\$ 46.74</u>	<u>\$ 20.0</u>
Options exercisable as of December 31, 2018	<u>2.8</u>	<u>\$ 41.43</u>	<u>\$ 17.5</u>

The total intrinsic value of stock options exercised was \$18.7 million, \$53.0 million and \$25.7 million during 2018, 2017, and 2016, respectively.

The following is a summary of weighted-average remaining contractual lives for stock options outstanding and the range of exercise prices on the stock options as of December 31, 2018:

Range of exercise prices	Number of options outstanding (in millions)	Weighted- average remaining contractual life
\$11.07 - \$21.69	0.1	0.1
\$21.70 - \$32.32	0.7	3.5
\$32.33 - \$42.95	1.0	6.4
\$42.96 - \$53.58	1.0	5.7
\$53.59 - \$64.22	1.4	8.7
\$11.07 - \$64.22	<u>4.2</u>	

The weighted-average remaining contractual lives for stock options exercisable is approximately 5.4 years as of December 31, 2018.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****18. Stock-Based Compensation Plans — (continued)**

The fair value of stock options is estimated using the Black-Scholes option pricing model. The following is a summary of the assumptions used in this model for the stock options granted during the period:

Options	For the year ended December 31,		
	2018	2017	2016
Expected volatility	26.0%	27.6%	31.7%
Expected term (in years)	7.0	7.0	6.5
Risk-free interest rate	2.8%	2.2%	1.5%
Expected dividend yield	3.19%	2.87%	4.07%
Weighted average estimated fair value	\$ 14.85	\$ 15.31	\$ 8.91

We determine expected volatility based on a combination of historical volatility using daily price observations and implied volatility from traded options on our common stock. We believe that incorporating both historical and implied volatility into our expected volatility assumption calculation better reflects market expectations. The expected term represents the period of time that options granted are expected to be outstanding. We determine expected term using historical exercise and employee termination data. The risk-free rate for periods within the expected term of the option is based on the U.S. Treasury risk-free interest rate in effect at the time of grant. The dividend yield is based on historical dividend distributions compared to the closing price of our common shares on the grant date.

As of December 31, 2018, we had \$1.6 million of total unrecognized compensation costs related to nonvested stock options. The cost is expected to be recognized over a weighted-average service period of approximately 1.8 years.

Cash received from stock options exercised under these share-based payment arrangements during 2018, 2017 and 2016 was \$29.0 million, \$133.9 million and \$15.3 million, respectively. The actual tax benefits realized for the tax deductions for options exercised under these share-based payment arrangements during 2018, 2017 and 2016 was \$3.9 million, \$18.1 million and \$9.0 million, respectively.

Performance Share Awards

We granted performance share awards to certain employees under the 2014 Stock Incentive Plan and the Amended and Restated 2010 Stock Incentive Plan. The performance share awards are treated as an equity award and are paid in shares. Whether the performance shares are earned depends upon the participant's continued employment through the performance period (except in the case of specific types of terminations) and our performance against three-year goals set at the beginning of the performance period. Performance goals based on various factors must be achieved for any of the performance shares to be earned. If the performance requirements are not met, the performance shares will be forfeited, no compensation cost will be recognized and any previously recognized compensation cost will be reversed. These awards have no maximum contractual term. Dividend equivalents are credited on performance shares outstanding as of the record date. These dividend equivalents are only paid on the shares released. Total performance share awards granted were 0.2 million, 0.2 million and 0.3 million in 2018, 2017 and 2016, respectively.

The following is a summary of activity for the nonvested performance share awards:

	Number of performance share awards <i>(in millions)</i>	Weighted- average grant-date fair value
Nonvested performance share awards as of January 1, 2018	0.8	\$ 48.82
Granted	0.2	63.98
Vested	0.4	51.33
Nonvested performance share awards as of December 31, 2018	0.6	\$ 52.50

The total intrinsic value of performance share awards vested was \$21.5 million, \$15.9 million and \$18.1 million during 2018, 2017 and 2016, respectively.

Performance share awards above represent initial target awards and do not reflect potential increases or decreases resulting from the final performance objectives to be determined at the end of the respective performance period. The actual number of shares to be awarded at the end of each performance period will range between 0% and 150% of the initial target awards.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****18. Stock-Based Compensation Plans — (continued)**

The fair value of performance share awards is determined based on the closing stock price of our common shares on the grant date. The weighted-average grant-date fair value of performance share awards granted during 2018, 2017 and 2016 was \$63.98, \$62.98 and \$37.38, respectively.

As of December 31, 2018, we had \$2.0 million of total unrecognized compensation cost related to nonvested performance share awards granted. The cost is expected to be recognized over a weighted-average service period of approximately 1.6 years.

Actual tax benefits realized for the tax deductions for performance share awards paid out under these share-based payment arrangements for 2018, 2017 and 2016 was \$3.3 million, \$5.4 million and \$4.8 million, respectively.

Restricted Stock Units

We issue restricted stock units under the 2014 Stock Incentive Plan, the 2014 Directors Stock Plan, the Amended and Restated 2010 Stock Incentive Plan, the 2005 Directors Stock Plan, the Stock Incentive Plan, and the Directors Stock Plan. Restricted stock units are treated as an equity award and are paid in shares. These awards have no maximum contractual term. Dividend equivalents are credited on restricted stock units outstanding as of the record date. These dividend equivalents are only paid on the shares released. Restricted stock units granted were 0.8 million, 0.8 million and 1.3 million in 2018, 2017 and 2016, respectively.

Restricted stock units were issued to certain employees and agents pursuant to the 2014 Stock Incentive Plan, the Amended and Restated 2010 Stock Incentive Plan and Stock Incentive Plan. Under these plans, awards have graded or cliff vesting over a three-year service period. When service for PFG ceases (except in the case of specific types of terminations), all vesting stops and unvested units are forfeited.

Pursuant to the 2014 Directors Stock Plan and the 2005 Directors Stock Plan, restricted stock units are granted to each non-employee director in office immediately following each annual meeting of stockholders and, at the discretion of the Nominating and Governance Committee, to each person who becomes a member of the Board other than on the date of the annual meeting of stockholders. Under these plans, awards are granted on an annual basis and cliff vest after a one-year service period. When service to PFG ceases, all vesting stops and unvested units are forfeited.

The following is a summary of activity for the nonvested restricted stock units:

	Number of restricted stock units (in millions)	Weighted- average grant-date fair value
Nonvested restricted stock units as of January 1, 2018	2.8	\$ 48.70
Granted	0.8	63.68
Vested	0.8	51.63
Canceled	0.1	51.90
Nonvested restricted stock units as of December 31, 2018	<u>2.7</u>	<u>\$ 52.17</u>

The total intrinsic value of restricted stock units vested was \$51.1 million, \$59.9 million and \$46.2 during 2018, 2017 and 2016, respectively.

The fair value of restricted stock units is determined based on the closing stock price of our common shares on the grant date. The weighted-average grant-date fair value of restricted stock units granted during 2018, 2017 and 2016 was \$63.68, \$62.85 and \$37.59, respectively.

As of December 31, 2018, we had \$42.6 million of total unrecognized compensation cost related to nonvested restricted stock unit awards granted under these plans. The cost is expected to be recognized over a weighted-average period of approximately 1.7 years.

The actual tax benefits realized for the tax deductions for restricted stock unit payouts under these share-based payment arrangements for 2018, 2017 and 2016 was \$10.8 million, \$20.8 million and \$16.1 million, respectively.

Employee Stock Purchase Plan

Under our Employee Stock Purchase Plan, participating employees had the opportunity to purchase shares of our common stock on a semi-annual basis through 2017. Beginning in 2018, participating employees had the opportunity to purchase shares of our common stock on a quarterly basis. Employees may purchase up to \$25,000 worth of company

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****18. Stock-Based Compensation Plans — (continued)**

stock each year. Employees may purchase shares of our common stock at a price equal to 85% of the shares' fair market value as of the beginning or end of the purchase period, whichever is lower. Under the Employee Stock Purchase Plan, employees purchased 0.7 million, 0.5 million and 0.7 million shares during 2018, 2017 and 2016, respectively.

We recognize compensation expense for the fair value of the discount granted to employees participating in the employee stock purchase plan in the period of grant. Shares of the Employee Stock Purchase Plan are treated as an equity award. The weighted-average fair value of the discount on the stock purchased was \$9.27, \$14.72 and \$14.00 during 2018, 2017 and 2016, respectively. The total intrinsic value of the Employee Stock Purchase Plan shares settled was \$6.1 million, \$7.9 million and \$10.2 million during 2018, 2017 and 2016, respectively.

Cash received from shares issued under these share-based payment arrangements for 2018, 2017 and 2016 was \$30.1 million, \$27.6 million and \$25.5 million, respectively. The actual tax benefit realized for the tax deductions for the settlement of the share-based payment arrangements for 2018, 2017 and 2016 was \$0.7 million, \$2.0 million and \$0.6 million, respectively.

As of December 31, 2018, a total of 2.2 million of new shares were available to be made issuable by us for this plan.

19. Earnings Per Common Share

The computations of the basic and diluted per share amounts were as follows:

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions, except per share data)</i>		
Net income	\$ 1,553.7	\$ 2,324.5	\$ 1,361.8
Subtract:			
Net income attributable to noncontrolling interest	7.2	14.1	45.3
Total	<u>\$ 1,546.5</u>	<u>\$ 2,310.4</u>	<u>\$ 1,316.5</u>
Weighted-average shares outstanding:			
Basic	285.8	288.9	289.4
Dilutive effects:			
Stock options	1.0	2.0	1.3
Restricted stock units	1.7	2.0	1.7
Performance share awards	0.3	0.2	0.3
Diluted	<u>288.8</u>	<u>293.1</u>	<u>292.7</u>
Net income per common share:			
Basic	<u>\$ 5.41</u>	<u>\$ 8.00</u>	<u>\$ 4.55</u>
Diluted	<u>\$ 5.36</u>	<u>\$ 7.88</u>	<u>\$ 4.50</u>

The calculation of diluted earnings per share for the years ended December 31, 2018, 2017 and 2016, excludes the incremental effect related to certain outstanding stock-based compensation grants due to their anti-dilutive effect.

Principal Financial Group, Inc.**Notes to Consolidated Financial Statements — (continued)****December 31, 2018****20. Quarterly Results of Operations (Unaudited)**

The following is a summary of unaudited quarterly results of operations.

	For the three months ended,			
	December 31	September 30	June 30	March 31
	<i>(in millions, except per share data)</i>			
2018				
Total revenues	\$ 3,770.6	\$ 4,348.1	\$ 3,234.9	\$ 2,883.6
Total expenses	3,527.7	3,779.0	2,719.5	2,426.6
Net income	231.7	460.0	459.5	402.5
Net income attributable to PFG	236.5	456.3	456.6	397.1
Basic earnings per common share	0.84	1.60	1.59	1.37
Diluted earnings per common share	0.83	1.59	1.58	1.36
2017				
Total revenues	\$ 3,237.7	\$ 4,627.8	\$ 3,178.3	\$ 3,049.4
Total expenses	2,922.9	3,470.0	2,812.7	2,635.4
Net income	842.9	813.2	314.8	353.6
Net income attributable to PFG	841.8	810.2	309.5	348.9
Basic earnings per common share	2.91	2.80	1.07	1.21
Diluted earnings per common share	2.87	2.76	1.06	1.19

21. Condensed Consolidating Financial Information

Principal Life has established special purpose entities to issue secured medium-term notes. Under the program, the payment obligations of principal and interest on the notes are secured by funding agreements issued by Principal Life. Principal Life's payment obligations on the funding agreements are fully and unconditionally guaranteed by PFG. All of the outstanding stock of Principal Life is indirectly owned by PFG and PFG is the only guarantor of the payment obligations of the funding agreements.

The following tables set forth condensed consolidating financial information of (i) PFG, (ii) Principal Life, (iii) PFS and all other direct and indirect subsidiaries of PFG on a combined basis and (iv) the eliminations necessary to arrive at the information for PFG on a consolidated basis as of December 31, 2018 and December 31, 2017, and for the years ended December 31, 2018, 2017 and 2016.

In presenting the condensed consolidating financial statements, the equity method of accounting has been applied to (i) PFG's interest in all direct subsidiaries of PFG, (ii) Principal Life's interest in all direct subsidiaries of Principal Life and (iii) PFS's interest in Principal Life even though all such subsidiaries meet the requirements to be consolidated under U.S. GAAP. Earnings of subsidiaries are, therefore, reflected in the parent's investment and earnings. All intercompany balances and transactions, including elimination of the parent's investment in subsidiaries, between PFG, Principal Life and PFS and all other subsidiaries have been eliminated, as shown in the column "Eliminations." These condensed consolidating financial statements should be read in conjunction with the consolidated financial statements. The financial information may not necessarily be indicative of results of operations, cash flows or financial position had the subsidiaries operated as independent entities.

PFG sponsors nonqualified benefit plans for select employees and agents and is responsible for the obligations of these plans. Nonqualified plan assets are held in Rabbi trusts for the benefit of all nonqualified plan participants. The Rabbi trusts are separate legal entities and are not a part of PFG on a stand-alone basis. The plan assets are available to satisfy the claims of general creditors only in the event of bankruptcy and are, therefore, consolidated in our statements of financial position.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Financial Position
December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (1)	Eliminations	Principal Financial Group, Inc. Consolidated
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale	\$ 211.5	\$ 53,401.7	\$ 6,857.9	\$ (362.6)	\$ 60,108.5
Fixed maturities, trading	308.9	165.5	161.7	—	636.1
Equity securities	—	84.8	1,758.9	—	1,843.7
Mortgage loans	—	14,478.0	1,615.5	(756.6)	15,336.9
Real estate	—	1.9	1,727.8	—	1,729.7
Policy loans	—	755.9	45.5	—	801.4
Investment in unconsolidated entities	13,862.4	2,324.4	6,853.8	(22,171.8)	868.8
Other investments	10.7	5,549.1	2,517.6	(4,635.9)	3,441.5
Cash and cash equivalents	334.9	1,323.9	2,014.8	(696.1)	2,977.5
Accrued investment income	1.4	563.2	77.5	(5.9)	636.2
Premiums due and other receivables	—	1,818.1	3,781.3	(4,186.3)	1,413.1
Deferred acquisition costs	—	3,680.2	13.3	—	3,693.5
Property and equipment	—	661.3	106.0	—	767.3
Goodwill	—	54.3	1,045.7	—	1,100.0
Other intangibles	—	19.7	1,295.4	—	1,315.1
Separate account assets	—	107,343.0	37,644.9	—	144,987.9
Other assets	375.0	1,135.1	4,418.3	(4,549.5)	1,378.9
Total assets	\$ 15,104.8	\$ 193,360.1	\$ 71,935.9	\$ (37,364.7)	\$ 243,036.1
Liabilities					
Contractholder funds	\$ —	\$ 36,861.7	\$ 3,189.2	\$ (351.2)	\$ 39,699.7
Future policy benefits and claims	—	30,690.3	6,128.6	(1,154.1)	35,664.8
Other policyholder funds	—	725.7	165.3	(2.6)	888.4
Short-term debt	—	—	42.9	—	42.9
Long-term debt	3,129.8	—	851.2	(721.4)	3,259.6
Income taxes currently payable	—	—	80.7	(55.4)	25.3
Deferred income taxes	—	405.3	1,056.4	(503.3)	958.4
Separate account liabilities	—	107,343.0	37,644.9	—	144,987.9
Other liabilities	585.0	8,503.2	8,586.5	(12,012.8)	5,661.9
Total liabilities	3,714.8	184,529.2	57,745.7	(14,800.8)	231,188.9
Redeemable noncontrolling interest	—	—	391.2	—	391.2
Stockholders' equity					
Common stock	4.8	2.5	—	(2.5)	4.8
Additional paid-in capital	10,060.7	6,331.6	9,461.2	(15,792.8)	10,060.7
Retained earnings	10,290.2	2,441.2	5,855.0	(8,296.2)	10,290.2
Accumulated other comprehensive income (loss)	(1,565.1)	55.6	(1,583.2)	1,527.6	(1,565.1)
Treasury stock, at cost	(7,400.6)	—	—	—	(7,400.6)
Total stockholders' equity attributable to PFG	11,390.0	8,830.9	13,733.0	(22,563.9)	11,390.0
Noncontrolling interest	—	—	66.0	—	66.0
Total stockholders' equity	11,390.0	8,830.9	13,799.0	(22,563.9)	11,456.0
Total liabilities and stockholders' equity	\$ 15,104.8	\$ 193,360.1	\$ 71,935.9	\$ (37,364.7)	\$ 243,036.1

(1) PFG sponsors nonqualified benefit plans. Nonqualified benefit plan assets and liabilities held in Rabbi trusts were \$671.7 million and \$542.4 million, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Financial Position
December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (1)	Eliminations	Principal Financial Group, Inc. Consolidated
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale	\$ —	\$ 52,632.1	\$ 7,120.3	\$ (364.0)	\$ 59,388.4
Fixed maturities, trading	351.8	49.1	165.1	—	566.0
Equity securities	—	100.1	1,766.5	—	1,866.6
Mortgage loans	—	13,389.6	1,449.6	(688.7)	14,150.5
Real estate	—	3.0	1,733.7	—	1,736.7
Policy loans	—	765.7	42.6	—	808.3
Investment in unconsolidated entities	15,063.2	2,658.2	7,491.4	(24,392.2)	820.6
Other investments	10.2	4,986.0	2,231.9	(4,462.5)	2,765.6
Cash and cash equivalents	842.8	426.7	1,526.4	(325.1)	2,470.8
Accrued investment income	1.1	538.8	77.7	(7.0)	610.6
Premiums due and other receivables	—	1,720.1	3,362.4	(3,612.7)	1,469.8
Deferred acquisition costs	—	3,331.5	209.2	—	3,540.7
Property and equipment	—	653.3	106.2	—	759.5
Goodwill	—	54.3	1,014.5	—	1,068.8
Other intangibles	—	21.6	1,293.1	—	1,314.7
Separate account assets	—	117,300.8	41,971.9	—	159,272.7
Other assets	389.7	1,177.5	4,346.0	(4,582.3)	1,330.9
Total assets	\$ 16,658.8	\$ 199,808.4	\$ 75,908.5	\$ (38,434.5)	\$ 253,941.2
Liabilities					
Contractholder funds	\$ —	\$ 35,330.2	\$ 3,092.8	\$ (340.5)	\$ 38,082.5
Future policy benefits and claims	—	27,794.0	6,155.0	(929.7)	33,019.3
Other policyholder funds	—	794.5	128.6	(0.8)	922.3
Short-term debt	—	—	39.5	—	39.5
Long-term debt	3,128.1	—	710.4	(660.1)	3,178.4
Income taxes currently payable	—	—	166.2	(149.5)	16.7
Deferred income taxes	—	731.6	986.9	(626.0)	1,092.5
Separate account liabilities	—	117,300.8	41,971.9	—	159,272.7
Other liabilities	681.4	7,910.9	7,533.6	(10,831.8)	5,294.1
Total liabilities	3,809.5	189,862.0	60,784.9	(13,538.4)	240,918.0
Redeemable noncontrolling interest	—	—	101.3	—	101.3
Stockholders' equity					
Common stock	4.7	2.5	—	(2.5)	4.7
Additional paid-in capital	9,925.2	6,346.0	9,053.5	(15,399.5)	9,925.2
Retained earnings	9,482.9	2,238.1	5,311.7	(7,549.8)	9,482.9
Accumulated other comprehensive income	165.5	1,359.8	579.4	(1,939.2)	165.5
Treasury stock, at cost	(6,729.0)	—	—	—	(6,729.0)
Total stockholders' equity attributable to PFG	12,849.3	9,946.4	14,944.6	(24,891.0)	12,849.3
Noncontrolling interest	—	—	77.7	(5.1)	72.6
Total stockholders' equity	12,849.3	9,946.4	15,022.3	(24,896.1)	12,921.9
Total liabilities and stockholders' equity	\$ 16,658.8	\$ 199,808.4	\$ 75,908.5	\$ (38,434.5)	\$ 253,941.2

(1) PFG sponsors nonqualified benefit plans. Nonqualified benefit plan assets and liabilities held in Rabbi trusts were \$643.3 million and \$524.7 million, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined	Eliminations	Principal Financial Group, Inc. Consolidated
	<i>(in millions)</i>				
Revenues					
Premiums and other considerations	\$ —	\$ 5,846.0	\$ 563.6	\$ —	\$ 6,409.6
Fees and other revenues	—	2,174.4	2,487.0	(387.6)	4,273.8
Net investment income	25.8	2,655.7	2,192.6	(1,244.9)	3,629.2
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	(8.2)	118.8	(175.1)	18.2	(46.3)
Net other-than-temporary impairment losses on available-for-sale securities	—	14.1	(3.5)	—	10.6
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified to (from) other comprehensive income	—	(40.1)	0.4	—	(39.7)
Net impairment losses on available-for-sale securities	—	(26.0)	(3.1)	—	(29.1)
Net realized capital gains (losses)	(8.2)	92.8	(178.2)	18.2	(75.4)
Total revenues	17.6	10,768.9	5,065.0	(1,614.3)	14,237.2
Expenses					
Benefits, claims and settlement expenses	—	7,346.3	857.1	(10.9)	8,192.5
Dividends to policyholders	—	123.6	—	—	123.6
Operating expenses	191.9	2,320.1	1,982.7	(358.0)	4,136.7
Total expenses	191.9	9,790.0	2,839.8	(368.9)	12,452.8
Income (loss) before income taxes	(174.3)	978.9	2,225.2	(1,245.4)	1,784.4
Income taxes (benefits)	(62.5)	60.0	235.0	(1.8)	230.7
Equity in the net income (loss) of subsidiaries	1,658.3	334.7	(335.3)	(1,657.7)	—
Net income	1,546.5	1,253.6	1,654.9	(2,901.3)	1,553.7
Net income attributable to noncontrolling interest	—	—	7.2	—	7.2
Net income attributable to PFG	\$ 1,546.5	\$ 1,253.6	\$ 1,647.7	\$ (2,901.3)	\$ 1,546.5
Net income	\$ 1,546.5	\$ 1,253.6	\$ 1,654.9	\$ (2,901.3)	\$ 1,553.7
Other comprehensive loss	(1,824.5)	(1,548.5)	(1,928.5)	3,465.8	(1,835.7)
Comprehensive loss	\$ (278.0)	\$ (294.9)	\$ (273.6)	\$ 564.5	\$ (282.0)

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Revenues					
Premiums and other considerations	\$ —	\$ 5,777.7	\$ 439.7	\$ —	\$ 6,217.4
Fees and other revenues	7.8	2,140.9	2,163.4	(419.8)	3,892.3
Net investment income	9.7	2,533.1	3,180.9	(2,264.4)	3,459.3
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	(0.6)	(84.5)	691.8	(0.7)	606.0
Net other-than-temporary impairment losses recoveries on available-for-sale securities	—	(28.2)	(0.5)	—	(28.7)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified from other comprehensive income	—	(46.4)	(6.7)	—	(53.1)
Net impairment losses on available-for-sale securities	—	(74.6)	(7.2)	—	(81.8)
Net realized capital gains (losses)	(0.6)	(159.1)	684.6	(0.7)	524.2
Total revenues	16.9	10,292.6	6,468.6	(2,684.9)	14,093.2
Expenses					
Benefits, claims and settlement expenses	—	7,153.5	679.9	(10.8)	7,822.6
Dividends to policyholders	—	124.6	—	—	124.6
Operating expenses	238.1	2,185.4	1,823.2	(352.9)	3,893.8
Total expenses	238.1	9,463.5	2,503.1	(363.7)	11,841.0
Income (loss) before income taxes	(221.2)	829.1	3,965.5	(2,321.2)	2,252.2
Income taxes (benefits)	63.1	(540.1)	376.4	28.3	(72.3)
Equity in the net income (loss) of subsidiaries (1)	2,594.7	901.5	(1,005.3)	(2,490.9)	—
Net income	2,310.4	2,270.7	2,583.8	(4,840.4)	2,324.5
Net income attributable to noncontrolling interest	—	—	14.1	—	14.1
Net income attributable to PFG	\$ 2,310.4	\$ 2,270.7	\$ 2,569.7	\$ (4,840.4)	\$ 2,310.4
Net income	\$ 2,310.4	\$ 2,270.7	\$ 2,583.8	\$ (4,840.4)	\$ 2,324.5
Other comprehensive income	840.3	611.6	877.6	(1,485.2)	844.3
Comprehensive income	\$ 3,150.7	\$ 2,882.3	\$ 3,461.4	\$ (6,325.6)	\$ 3,168.8

(1) Principal Life Insurance Company Only includes income from discontinued operations of \$35.5 million related to its sale of Principal Global Investors, LLC to PFS in connection with a corporate reorganization.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2016**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Revenues					
Premiums and other considerations	\$ —	\$ 4,869.0	\$ 430.1	\$ —	\$ 5,299.1
Fees and other revenues	—	1,956.1	2,061.1	(389.8)	3,627.4
Net investment income	3.4	2,300.2	2,004.7	(1,011.8)	3,296.5
Net realized capital gains, excluding impairment losses on available-for-sale securities	—	210.4	48.1	11.0	269.5
Net other-than-temporary impairment losses on available-for-sale securities	—	(92.2)	(6.6)	—	(98.8)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified to (from) other comprehensive income	—	(3.0)	3.4	—	0.4
Net impairment losses on available-for-sale securities	—	(95.2)	(3.2)	—	(98.4)
Net realized capital gains	—	115.2	44.9	11.0	171.1
Total revenues	3.4	9,240.5	4,540.8	(1,390.6)	12,394.1
Expenses					
Benefits, claims and settlement expenses	—	6,177.9	746.3	(11.0)	6,913.2
Dividends to policyholders	—	156.6	—	—	156.6
Operating expenses	312.3	2,113.9	1,629.7	(323.3)	3,732.6
Total expenses	312.3	8,448.4	2,376.0	(334.3)	10,802.4
Income (loss) before income taxes	(308.9)	792.1	2,164.8	(1,056.3)	1,591.7
Income taxes (benefits)	(134.9)	97.9	270.0	(3.1)	229.9
Equity in the net income (loss) of subsidiaries (1)	1,490.5	395.9	(366.0)	(1,520.4)	—
Net income	1,316.5	1,090.1	1,528.8	(2,573.6)	1,361.8
Net income attributable to noncontrolling interest	—	—	45.3	—	45.3
Net income attributable to PFG	\$ 1,316.5	\$ 1,090.1	\$ 1,483.5	\$ (2,573.6)	\$ 1,316.5
Net income	\$ 1,316.5	\$ 1,090.1	\$ 1,528.8	\$ (2,573.6)	\$ 1,361.8
Other comprehensive income	218.8	116.5	218.1	(332.4)	221.0
Comprehensive income	\$ 1,535.3	\$ 1,206.6	\$ 1,746.9	\$ (2,906.0)	\$ 1,582.8

(1) Principal Life Insurance Company Only includes income from discontinued operations of \$132.6 million related to its sale of Principal Global Investors, LLC to PFS in connection with a corporate reorganization.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined	Eliminations	Principal Financial Group, Inc. Consolidated
	<i>(in millions)</i>				
Operating activities					
Net cash provided by (used in) operating activities	\$ (132.4)	\$ 5,410.9	\$ 473.1	\$ (595.1)	\$ 5,156.5
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	(210.9)	(11,457.5)	(2,249.2)	7.8	(13,909.8)
Sales	—	2,557.9	1,255.2	—	3,813.1
Maturities	2.3	5,660.9	554.4	—	6,217.6
Mortgage loans acquired or originated	—	(3,060.0)	(497.0)	109.5	(3,447.5)
Mortgage loans sold or repaid	—	1,967.4	297.8	(36.8)	2,228.4
Real estate acquired	—	—	(88.1)	—	(88.1)
Real estate sold	—	—	63.5	—	63.5
Net purchases of property and equipment	(0.1)	(50.5)	(41.7)	—	(92.3)
Purchase of interests in subsidiaries, net of cash acquired	—	—	(184.7)	—	(184.7)
Dividends and returns of capital received from unconsolidated entities	1,041.6	50.1	861.6	(1,953.3)	—
Net change in other investments	(2.2)	(626.1)	120.7	204.9	(302.7)
Net cash provided by (used in) investing activities	830.7	(4,957.8)	92.5	(1,667.9)	(5,702.5)
Financing activities					
Issuance of common stock	64.0	—	—	—	64.0
Acquisition of treasury stock	(671.6)	—	—	—	(671.6)
Payments for financing element derivatives	—	(65.9)	—	—	(65.9)
Purchase of subsidiary shares from noncontrolling interest	—	—	(31.1)	—	(31.1)
Dividends to common stockholders	(598.6)	—	—	—	(598.6)
Issuance of long-term debt	—	—	178.9	(98.1)	80.8
Principal repayments of long-term debt	—	—	(38.1)	36.8	(1.3)
Net proceeds from short-term borrowings	—	—	8.5	—	8.5
Dividends and capital paid to parent	—	(861.6)	(1,091.7)	1,953.3	—
Investment contract deposits	—	7,896.0	412.8	—	8,308.8
Investment contract withdrawals	—	(6,520.1)	(69.5)	—	(6,589.6)
Net increase in banking operation deposits	—	—	553.0	—	553.0
Other	—	(4.3)	—	—	(4.3)
Net cash provided by (used in) financing activities	(1,206.2)	444.1	(77.2)	1,892.0	1,052.7
Net increase (decrease) in cash and cash equivalents	(507.9)	897.2	488.4	(371.0)	506.7
Cash and cash equivalents at beginning of period	842.8	426.7	1,526.4	(325.1)	2,470.8
Cash and cash equivalents at end of period	\$ 334.9	\$ 1,323.9	\$ 2,014.8	\$ (696.1)	\$ 2,977.5

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Operating activities					
Net cash provided by (used in) operating activities	\$ (443.2)	\$ 5,571.5	\$ (2,114.7)	\$ 1,174.4	\$ 4,188.0
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	—	(12,054.5)	(1,317.1)	—	(13,371.6)
Sales	—	1,005.3	425.1	(16.8)	1,413.6
Maturities	—	7,894.7	848.5	—	8,743.2
Mortgage loans acquired or originated	—	(2,629.8)	(448.1)	322.1	(2,755.8)
Mortgage loans sold or repaid	—	1,696.2	388.4	(212.6)	1,872.0
Real estate acquired	—	—	(200.5)	—	(200.5)
Real estate sold	—	—	481.9	—	481.9
Net purchases of property and equipment	(0.1)	(108.1)	(56.6)	—	(164.8)
Dividends and returns of capital received from unconsolidated entities	1,002.5	149.7	1,845.9	(2,998.1)	—
Net change in other investments	(1.1)	281.9	155.4	(507.0)	(70.8)
Net cash provided by (used in) investing activities	1,001.3	(3,764.6)	2,122.9	(3,412.4)	(4,052.8)
Financing activities					
Issuance of common stock	162.5	—	—	—	162.5
Acquisition of treasury stock	(220.4)	—	—	—	(220.4)
Proceeds from financing element derivatives	—	0.1	—	—	0.1
Payments for financing element derivatives	—	(77.6)	—	—	(77.6)
Purchase of subsidiary shares from noncontrolling interest	—	—	(16.2)	2.9	(13.3)
Sale of subsidiary shares to noncontrolling interest	—	—	2.9	(2.9)	—
Dividends to common stockholders	(540.0)	—	—	—	(540.0)
Issuance of long-term debt	—	—	380.5	(377.7)	2.8
Principal repayments of long-term debt	—	—	(269.9)	213.4	(56.5)
Net repayments of short-term borrowings	—	—	(15.5)	—	(15.5)
Dividends and capital paid to parent	—	(1,845.9)	(1,152.2)	2,998.1	—
Investment contract deposits	—	9,760.5	393.9	—	10,154.4
Investment contract withdrawals	—	(9,889.9)	(24.7)	—	(9,914.6)
Net increase in banking operation deposits	—	—	136.6	—	136.6
Other	—	(2.5)	—	—	(2.5)
Net cash used in financing activities	(597.9)	(2,055.3)	(564.6)	2,833.8	(384.0)
Net decrease in cash and cash equivalents	(39.8)	(248.4)	(556.4)	595.8	(248.8)
Cash and cash equivalents at beginning of period	882.6	675.1	2,082.8	(920.9)	2,719.6
Cash and cash equivalents at end of period	\$ 842.8	\$ 426.7	\$ 1,526.4	\$ (325.1)	\$ 2,470.8

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2016**

	Principal Financial Group, Inc. Parent Only	Principal Life Insurance Company Only	Principal Financial Services, Inc. and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Operating activities					
Net cash provided by (used in) operating activities	\$ (188.6)	\$ 3,657.5	\$ 1,601.1	\$ (1,212.2)	\$ 3,857.8
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	—	(12,771.1)	(1,005.8)	13.1	(13,763.8)
Sales	—	1,312.7	577.8	—	1,890.5
Maturities	—	7,097.4	645.4	—	7,742.8
Mortgage loans acquired or originated	—	(2,615.7)	(333.5)	60.2	(2,889.0)
Mortgage loans sold or repaid	—	1,843.6	274.7	(49.6)	2,068.7
Real estate acquired	—	—	(109.7)	—	(109.7)
Real estate sold	—	3.5	32.0	—	35.5
Net purchases of property and equipment	(0.1)	(113.2)	(41.6)	—	(154.9)
Dividends and returns of capital received from unconsolidated entities	1,295.3	3.1	1,195.0	(2,493.4)	—
Net change in other investments	1.3	314.2	(954.8)	665.3	26.0
Net cash provided by (used in) investing activities	1,296.5	(4,925.5)	279.5	(1,804.4)	(5,153.9)
Financing activities					
Issuance of common stock	37.8	—	—	—	37.8
Acquisition of treasury stock	(277.3)	—	—	—	(277.3)
Proceeds from financing element derivatives	—	0.4	—	—	0.4
Payments for financing element derivatives	—	(87.7)	—	—	(87.7)
Excess tax benefits from share-based payment arrangements	0.7	4.7	6.6	—	12.0
Purchase of subsidiary shares from noncontrolling interest	—	—	(4.3)	1.9	(2.4)
Sale of subsidiary shares to noncontrolling interest	—	—	1.9	(1.9)	—
Dividends to common stockholders	(464.9)	—	—	—	(464.9)
Issuance of long-term debt	644.2	—	6.8	5.1	656.1
Principal repayments of long-term debt	(744.5)	—	(47.5)	(7.3)	(799.3)
Net repayments of short-term borrowings	—	—	(131.4)	—	(131.4)
Dividends and capital paid to parent	—	(1,195.0)	(1,298.4)	2,493.4	—
Investment contract deposits	—	10,465.8	305.1	—	10,770.9
Investment contract withdrawals	—	(8,373.3)	(19.4)	—	(8,392.7)
Net increase in banking operation deposits	—	—	129.0	—	129.0
Other	—	0.3	0.1	—	0.4
Net cash provided by (used in) financing activities	(804.0)	815.2	(1,051.5)	2,491.2	1,450.9
Net increase (decrease) in cash and cash equivalents	303.9	(452.8)	829.1	(525.4)	154.8
Cash and cash equivalents at beginning of period	578.7	1,127.9	1,253.7	(395.5)	2,564.8
Cash and cash equivalents at end of period	\$ 882.6	\$ 675.1	\$ 2,082.8	\$ (920.9)	\$ 2,719.6

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

Under our current shelf registration that was filed with the SEC and became effective May 3, 2017, we have the ability to issue, in unlimited amounts, unsecured senior debt securities or subordinated debt securities, junior subordinated debt, preferred stock, common stock, warrants, depositary shares, purchase contracts and purchase units of PFG. Our wholly owned subsidiary, PFS, may guarantee, fully and unconditionally or otherwise, our obligations with respect to any non-convertible securities, other than common stock, described in the shelf registration.

The following tables set forth condensed consolidating financial information of (i) PFG, (ii) PFS, (iii) Principal Life and all other direct and indirect subsidiaries of PFG on a combined basis and (iv) the eliminations necessary to arrive at the information for PFG on a consolidated basis as of December 31, 2018 and December 31, 2017, and for the years ended December 31, 2018, 2017 and 2016.

In presenting the condensed consolidating financial statements, the equity method of accounting has been applied to (i) PFG's interest in all direct subsidiaries of PFG and (ii) PFS's interest in Principal Life and all other subsidiaries, where applicable, even though all such subsidiaries meet the requirements to be consolidated under U.S. GAAP. Earnings of subsidiaries are, therefore, reflected in the parent's investment and earnings. All intercompany balances and transactions, including elimination of the parent's investment in subsidiaries, between PFG, PFS and Principal Life and all other subsidiaries have been eliminated, as shown in the column "Eliminations." These condensed consolidating financial statements should be read in conjunction with the consolidated financial statements. The financial information may not necessarily be indicative of results of operations, cash flows or financial position had the subsidiaries operated as independent entities.

PFG sponsors nonqualified benefit plans for select employees and agents and is responsible for the obligations of these plans. Nonqualified plan assets are held in Rabbi trusts for the benefit of all nonqualified plan participants. The Rabbi trusts are separate legal entities and are not a part of PFG on a stand-alone basis. The plan assets are available to satisfy the claims of general creditors only in the event of bankruptcy and are, therefore, consolidated in our statements of financial position.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Financial Position
December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (1) <i>(in millions)</i>	Eliminations	Principal Financial Group, Inc. Consolidated
Assets					
Fixed maturities, available-for-sale	\$ 211.5	\$ —	\$ 59,897.0	\$ —	\$ 60,108.5
Fixed maturities, trading	308.9	—	327.2	—	636.1
Equity securities	—	11.9	1,831.8	—	1,843.7
Mortgage loans	—	—	15,336.9	—	15,336.9
Real estate	—	—	1,729.7	—	1,729.7
Policy loans	—	—	801.4	—	801.4
Investment in unconsolidated entities	13,862.4	14,325.5	726.0	(28,045.1)	868.8
Other investments	10.7	100.9	3,329.9	—	3,441.5
Cash and cash equivalents	334.9	649.0	3,096.8	(1,103.2)	2,977.5
Accrued investment income	1.4	0.3	634.5	—	636.2
Premiums due and other receivables	—	0.5	1,779.6	(367.0)	1,413.1
Deferred acquisition costs	—	—	3,693.5	—	3,693.5
Property and equipment	—	—	767.3	—	767.3
Goodwill	—	—	1,100.0	—	1,100.0
Other intangibles	—	—	1,315.1	—	1,315.1
Separate account assets	—	—	144,987.9	—	144,987.9
Other assets	375.0	38.7	1,521.9	(556.7)	1,378.9
Total assets	\$ 15,104.8	\$ 15,126.8	\$ 242,876.5	\$ (30,072.0)	\$ 243,036.1
Liabilities					
Contractholder funds	\$ —	\$ —	\$ 39,699.7	\$ —	\$ 39,699.7
Future policy benefits and claims	—	—	35,664.8	—	35,664.8
Other policyholder funds	—	—	888.4	—	888.4
Short-term debt	—	—	42.9	—	42.9
Long-term debt	3,129.8	366.7	129.9	(366.8)	3,259.6
Income taxes currently payable	—	9.8	61.5	(46.0)	25.3
Deferred income taxes	—	13.9	1,446.4	(501.9)	958.4
Separate account liabilities	—	—	144,987.9	—	144,987.9
Other liabilities	585.0	1,002.9	4,838.1	(764.1)	5,661.9
Total liabilities	3,714.8	1,393.3	227,759.6	(1,678.8)	231,188.9
Redeemable noncontrolling interest	—	—	391.2	—	391.2
Stockholders' equity					
Common stock	4.8	—	11.0	(11.0)	4.8
Additional paid-in capital	10,060.7	9,100.0	12,004.5	(21,104.5)	10,060.7
Retained earnings	10,290.2	5,716.8	3,549.8	(9,266.6)	10,290.2
Accumulated other comprehensive loss	(1,565.1)	(1,083.3)	(903.6)	1,986.9	(1,565.1)
Treasury stock, at cost	(7,400.6)	—	(2.0)	2.0	(7,400.6)
Total stockholders' equity attributable to PFG	11,390.0	13,733.5	14,659.7	(28,393.2)	11,390.0
Noncontrolling interest	—	—	66.0	—	66.0
Total stockholders' equity	11,390.0	13,733.5	14,725.7	(28,393.2)	11,456.0
Total liabilities and stockholders' equity	\$ 15,104.8	\$ 15,126.8	\$ 242,876.5	\$ (30,072.0)	\$ 243,036.1

(1) PFG sponsors nonqualified benefit plans. Nonqualified benefit plan assets and liabilities held in Rabbi trusts were \$671.7 million and \$542.4 million, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Financial Position
December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (1)	Eliminations	Principal Financial Group, Inc. Consolidated
	<i>(in millions)</i>				
Assets					
Fixed maturities, available-for-sale	\$ —	\$ —	\$ 59,388.4	\$ —	\$ 59,388.4
Fixed maturities, trading	351.8	—	214.2	—	566.0
Equity securities	—	5.7	1,860.9	—	1,866.6
Mortgage loans	—	—	14,150.5	—	14,150.5
Real estate	—	—	1,736.7	—	1,736.7
Policy loans	—	—	808.3	—	808.3
Investment in unconsolidated entities	15,063.2	15,449.7	706.7	(30,399.0)	820.6
Other investments	10.2	131.3	2,624.1	—	2,765.6
Cash and cash equivalents	842.8	617.4	2,001.1	(990.5)	2,470.8
Accrued investment income	1.1	0.2	609.3	—	610.6
Premiums due and other receivables	—	2.0	1,880.3	(412.5)	1,469.8
Deferred acquisition costs	—	—	3,540.7	—	3,540.7
Property and equipment	—	—	759.5	—	759.5
Goodwill	—	—	1,068.8	—	1,068.8
Other intangibles	—	—	1,314.7	—	1,314.7
Separate account assets	—	—	159,272.7	—	159,272.7
Other assets	389.7	94.8	1,619.4	(773.0)	1,330.9
Total assets	\$ 16,658.8	\$ 16,301.1	\$ 253,556.3	\$ (32,575.0)	\$ 253,941.2
Liabilities					
Contractholder funds	\$ —	\$ —	\$ 38,082.5	\$ —	\$ 38,082.5
Future policy benefits and claims	—	—	33,019.3	—	33,019.3
Other policyholder funds	—	—	922.3	—	922.3
Short-term debt	—	—	39.5	—	39.5
Long-term debt	3,128.1	412.7	50.3	(412.7)	3,178.4
Income taxes currently payable	—	37.3	105.9	(126.5)	16.7
Deferred income taxes	—	12.4	1,705.1	(625.0)	1,092.5
Separate account liabilities	—	—	159,272.7	—	159,272.7
Other liabilities	681.4	894.1	4,760.7	(1,042.1)	5,294.1
Total liabilities	3,809.5	1,356.5	237,958.3	(2,206.3)	240,918.0
Redeemable noncontrolling interest	—	—	101.3	—	101.3
Stockholders' equity					
Common stock	4.7	—	11.0	(11.0)	4.7
Additional paid-in capital	9,925.2	9,053.5	11,336.0	(20,389.5)	9,925.2
Retained earnings	9,482.9	5,311.7	3,394.1	(8,705.8)	9,482.9
Accumulated other comprehensive income	165.5	579.4	685.0	(1,264.4)	165.5
Treasury stock, at cost	(6,729.0)	—	(2.0)	2.0	(6,729.0)
Total stockholders' equity attributable to PFG	12,849.3	14,944.6	15,424.1	(30,368.7)	12,849.3
Noncontrolling interest	—	—	72.6	—	72.6
Total stockholders' equity	12,849.3	14,944.6	15,496.7	(30,368.7)	12,921.9
Total liabilities and stockholders' equity	\$ 16,658.8	\$ 16,301.1	\$ 253,556.3	\$ (32,575.0)	\$ 253,941.2

(1) PFG sponsors nonqualified benefit plans. Nonqualified benefit plan assets and liabilities held in Rabbi trusts were \$643.3 million and \$524.7 million, respectively.

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Revenues					
Premiums and other considerations	\$ —	\$ —	\$ 6,409.6	\$ —	\$ 6,409.6
Fees and other revenues	—	2.7	4,286.4	(15.3)	4,273.8
Net investment income (loss)	25.8	(6.7)	3,598.0	12.1	3,629.2
Net realized capital losses, excluding impairment losses on available-for-sale securities	(8.2)	(3.5)	(34.6)	—	(46.3)
Net other-than-temporary impairment losses on available-for-sale securities	—	—	10.6	—	10.6
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified from other comprehensive income	—	—	(39.7)	—	(39.7)
Net impairment losses on available-for-sale securities	—	—	(29.1)	—	(29.1)
Net realized capital losses	(8.2)	(3.5)	(63.7)	—	(75.4)
Total revenues	17.6	(7.5)	14,230.3	(3.2)	14,237.2
Expenses					
Benefits, claims and settlement expenses	—	—	8,192.5	—	8,192.5
Dividends to policyholders	—	—	123.6	—	123.6
Operating expenses	191.9	29.1	3,929.5	(13.8)	4,136.7
Total expenses	191.9	29.1	12,245.6	(13.8)	12,452.8
Income (loss) before income taxes	(174.3)	(36.6)	1,984.7	10.6	1,784.4
Income taxes (benefits)	(62.5)	0.2	293.0	—	230.7
Equity in the net income of subsidiaries	1,658.3	1,684.5	—	(3,342.8)	—
Net income	1,546.5	1,647.7	1,691.7	(3,332.2)	1,553.7
Net income attributable to noncontrolling interest	—	—	7.2	—	7.2
Net income attributable to PFG	\$ 1,546.5	\$ 1,647.7	\$ 1,684.5	\$ (3,332.2)	\$ 1,546.5
Net income	\$ 1,546.5	\$ 1,647.7	\$ 1,691.7	\$ (3,332.2)	\$ 1,553.7
Other comprehensive loss	(1,824.5)	(1,839.1)	(1,856.4)	3,684.3	(1,835.7)
Comprehensive loss	\$ (278.0)	\$ (191.4)	\$ (164.7)	\$ 352.1	\$ (282.0)

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Revenues					
Premiums and other considerations	\$ —	\$ —	\$ 6,217.4	\$ —	\$ 6,217.4
Fees and other revenues	7.8	0.2	3,894.7	(10.4)	3,892.3
Net investment income (loss)	9.7	(2.8)	3,396.5	55.9	3,459.3
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	(0.6)	4.2	602.4	—	606.0
Net other-than-temporary impairment losses on available-for-sale securities	—	—	(28.7)	—	(28.7)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified from other comprehensive income	—	—	(53.1)	—	(53.1)
Net impairment losses on available-for-sale securities	—	—	(81.8)	—	(81.8)
Net realized capital gains (losses)	(0.6)	4.2	520.6	—	524.2
Total revenues	16.9	1.6	14,029.2	45.5	14,093.2
Expenses					
Benefits, claims and settlement expenses	—	—	7,822.6	—	7,822.6
Dividends to policyholders	—	—	124.6	—	124.6
Operating expenses	238.1	48.4	3,616.9	(9.6)	3,893.8
Total expenses	238.1	48.4	11,564.1	(9.6)	11,841.0
Income (loss) before income taxes	(221.2)	(46.8)	2,465.1	55.1	2,252.2
Income taxes (benefits)	63.1	115.4	(280.9)	30.1	(72.3)
Equity in the net income of subsidiaries	2,594.7	2,731.9	—	(5,326.6)	—
Net income	2,310.4	2,569.7	2,746.0	(5,301.6)	2,324.5
Net income attributable to noncontrolling interest	—	—	14.1	—	14.1
Net income attributable to PFG	\$ 2,310.4	\$ 2,569.7	\$ 2,731.9	\$ (5,301.6)	\$ 2,310.4
Net income	\$ 2,310.4	\$ 2,569.7	\$ 2,746.0	\$ (5,301.6)	\$ 2,324.5
Other comprehensive income	840.3	809.8	801.8	(1,607.6)	844.3
Comprehensive income	\$ 3,150.7	\$ 3,379.5	\$ 3,547.8	\$ (6,909.2)	\$ 3,168.8

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Operations
For the year ended December 31, 2016**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Revenues					
Premiums and other considerations	\$ —	\$ —	\$ 5,299.1	\$ —	\$ 5,299.1
Fees and other revenues	—	0.9	3,634.0	(7.5)	3,627.4
Net investment income	3.4	25.2	3,260.4	7.5	3,296.5
Net realized capital gains (losses), excluding impairment losses on available-for-sale securities	—	(4.5)	273.9	0.1	269.5
Net other-than-temporary impairment losses on available-for-sale securities	—	—	(98.8)	—	(98.8)
Other-than-temporary impairment losses on fixed maturities, available-for-sale reclassified to other comprehensive income	—	—	0.4	—	0.4
Net impairment losses on available-for-sale securities	—	—	(98.4)	—	(98.4)
Net realized capital gains (losses)	—	(4.5)	175.5	0.1	171.1
Total revenues	3.4	21.6	12,369.0	0.1	12,394.1
Expenses					
Benefits, claims and settlement expenses	—	—	6,913.2	—	6,913.2
Dividends to policyholders	—	—	156.6	—	156.6
Operating expenses	312.3	9.7	3,417.5	(6.9)	3,732.6
Total expenses	312.3	9.7	10,487.3	(6.9)	10,802.4
Income (loss) before income taxes	(308.9)	11.9	1,881.7	7.0	1,591.7
Income taxes (benefits)	(134.9)	(24.3)	389.1	—	229.9
Equity in the net income of subsidiaries	1,490.5	1,447.3	—	(2,937.8)	—
Net income	1,316.5	1,483.5	1,492.6	(2,930.8)	1,361.8
Net income attributable to noncontrolling interest	—	—	45.3	—	45.3
Net income attributable to PFG	\$ 1,316.5	\$ 1,483.5	\$ 1,447.3	\$ (2,930.8)	\$ 1,316.5
Net income	\$ 1,316.5	\$ 1,483.5	\$ 1,492.6	\$ (2,930.8)	\$ 1,361.8
Other comprehensive income	218.8	174.3	191.7	(363.8)	221.0
Comprehensive income	\$ 1,535.3	\$ 1,657.8	\$ 1,684.3	\$ (3,294.6)	\$ 1,582.8

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2018**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined <i>(in millions)</i>	Eliminations	Principal Financial Group, Inc. Consolidated
Operating activities					
Net cash provided by (used in) operating activities	\$ (132.4)	\$ 696.3	\$ 5,030.9	\$ (438.3)	\$ 5,156.5
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	(210.9)	—	(13,698.9)	—	(13,909.8)
Sales	—	—	3,813.1	—	3,813.1
Maturities	2.3	—	6,215.3	—	6,217.6
Mortgage loans acquired or originated	—	—	(3,447.5)	—	(3,447.5)
Mortgage loans sold or repaid	—	—	2,228.4	—	2,228.4
Real estate acquired	—	—	(88.1)	—	(88.1)
Real estate sold	—	—	63.5	—	63.5
Net purchases of property and equipment	(0.1)	—	(92.2)	—	(92.3)
Purchase of interests in subsidiaries, net of cash acquired	—	—	(184.7)	—	(184.7)
Dividends and returns of capital received from unconsolidated entities	1,041.6	589.1	—	(1,630.7)	—
Net change in other investments	(2.2)	(166.2)	(413.9)	279.6	(302.7)
Net cash provided by (used in) investing activities	830.7	422.9	(5,605.0)	(1,351.1)	(5,702.5)
Financing activities					
Issuance of common stock	64.0	—	—	—	64.0
Acquisition of treasury stock	(671.6)	—	—	—	(671.6)
Payments for financing element derivatives	—	—	(65.9)	—	(65.9)
Purchase of subsidiary shares from noncontrolling interest	—	—	(31.1)	—	(31.1)
Dividends to common stockholders	(598.6)	—	—	—	(598.6)
Issuance of long-term debt	—	11.1	80.8	(11.1)	80.8
Principal repayments of long-term debt	—	(57.1)	(1.3)	57.1	(1.3)
Net proceeds from short-term borrowings	—	—	8.5	—	8.5
Dividends and capital paid to parent	—	(1,041.6)	(589.1)	1,630.7	—
Investment contract deposits	—	—	8,308.8	—	8,308.8
Investment contract withdrawals	—	—	(6,589.6)	—	(6,589.6)
Net increase in banking operation deposits	—	—	553.0	—	553.0
Other	—	—	(4.3)	—	(4.3)
Net cash provided by (used in) financing activities	(1,206.2)	(1,087.6)	1,669.8	1,676.7	1,052.7
Net increase (decrease) in cash and cash equivalents	(507.9)	31.6	1,095.7	(112.7)	506.7
Cash and cash equivalents at beginning of period	842.8	617.4	2,001.1	(990.5)	2,470.8
Cash and cash equivalents at end of period	\$ 334.9	\$ 649.0	\$ 3,096.8	\$ (1,103.2)	\$ 2,977.5

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2017**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined (in millions)	Eliminations	Principal Financial Group, Inc. Consolidated
Operating activities					
Net cash provided by (used in) operating activities	\$ (443.2)	\$ (252.8)	\$ 4,483.6	\$ 400.4	\$ 4,188.0
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	—	—	(13,371.6)	—	(13,371.6)
Sales	—	—	1,413.6	—	1,413.6
Maturities	—	—	8,743.2	—	8,743.2
Mortgage loans acquired or originated	—	—	(2,755.8)	—	(2,755.8)
Mortgage loans sold or repaid	—	—	1,872.0	—	1,872.0
Real estate acquired	—	—	(200.5)	—	(200.5)
Real estate sold	—	—	481.9	—	481.9
Net purchases of property and equipment	(0.1)	—	(164.7)	—	(164.8)
Dividends and returns of capital received from unconsolidated entities	1,002.5	691.2	—	(1,693.7)	—
Net change in other investments	(1.1)	7.5	(61.6)	(15.6)	(70.8)
Net cash provided by (used in) investing activities	1,001.3	698.7	(4,043.5)	(1,709.3)	(4,052.8)
Financing activities					
Issuance of common stock	162.5	—	—	—	162.5
Acquisition of treasury stock	(220.4)	—	—	—	(220.4)
Proceeds from financing element derivatives	—	—	0.1	—	0.1
Payments for financing element derivatives	—	—	(77.6)	—	(77.6)
Purchase of subsidiary shares from noncontrolling interest	—	—	(13.3)	—	(13.3)
Dividends to common stockholders	(540.0)	—	—	—	(540.0)
Issuance of long-term debt	—	9.4	2.8	(9.4)	2.8
Principal repayments of long-term debt	—	(38.8)	(56.5)	38.8	(56.5)
Net repayments of short-term borrowings borrowings	—	—	(92.0)	76.5	(15.5)
Dividends and capital paid to parent	—	(1,002.5)	(691.2)	1,693.7	—
Investment contract deposits	—	—	10,154.4	—	10,154.4
Investment contract withdrawals	—	—	(9,914.6)	—	(9,914.6)
Net increase in banking operation deposits	—	—	136.6	—	136.6
Other	—	—	(2.5)	—	(2.5)
Net cash used in financing activities	(597.9)	(1,031.9)	(553.8)	1,799.6	(384.0)
Net decrease in cash and cash equivalents	(39.8)	(586.0)	(113.7)	490.7	(248.8)
Cash and cash equivalents at beginning of period	882.6	1,203.4	2,114.8	(1,481.2)	2,719.6
Cash and cash equivalents at end of period	\$ 842.8	\$ 617.4	\$ 2,001.1	\$ (990.5)	\$ 2,470.8

Principal Financial Group, Inc.

Notes to Consolidated Financial Statements — (continued)

December 31, 2018

21. Condensed Consolidating Financial Information — (continued)

**Condensed Consolidating Statements of Cash Flows
For the year ended December 31, 2016**

	Principal Financial Group, Inc. Parent Only	Principal Financial Services, Inc. Only	Principal Life Insurance Company and Other Subsidiaries Combined <i>(in millions)</i>	Eliminations	Principal Financial Group, Inc. Consolidated
Operating activities					
Net cash provided by (used in) operating activities	\$ (188.6)	\$ 255.7	\$ 3,983.8	\$ (193.1)	\$ 3,857.8
Investing activities					
Fixed maturities available-for-sale and equity securities with intent to hold:					
Purchases	—	—	(13,763.8)	—	(13,763.8)
Sales	—	—	1,890.5	—	1,890.5
Maturities	—	—	7,742.8	—	7,742.8
Mortgage loans acquired or originated	—	—	(2,889.0)	—	(2,889.0)
Mortgage loans sold or repaid	—	—	2,068.7	—	2,068.7
Real estate acquired	—	—	(109.7)	—	(109.7)
Real estate sold	—	—	35.5	—	35.5
Net purchases of property and equipment	(0.1)	—	(154.8)	—	(154.9)
Dividends and returns of capital received from unconsolidated entities	1,295.3	1,583.3	—	(2,878.6)	—
Net change in other investments	1.3	(56.8)	258.2	(176.7)	26.0
Net cash provided by (used in) investing activities	1,296.5	1,526.5	(4,921.6)	(3,055.3)	(5,153.9)
Financing activities					
Issuance of common stock	37.8	—	—	—	37.8
Acquisition of treasury stock	(277.3)	—	—	—	(277.3)
Proceeds from financing element derivatives	—	—	0.4	—	0.4
Payments for financing element derivatives	—	—	(87.7)	—	(87.7)
Excess tax benefits from share-based payment arrangements	0.7	—	11.3	—	12.0
Purchase of subsidiary shares from noncontrolling interest	—	—	(2.4)	—	(2.4)
Dividends to common stockholders	(464.9)	—	—	—	(464.9)
Issuance of long-term debt	644.2	6.0	11.9	(6.0)	656.1
Principal repayments of long-term debt	(744.5)	(20.0)	(54.8)	20.0	(799.3)
Net repayments of short-term borrowings	—	—	(163.7)	32.3	(131.4)
Dividends and capital paid to parent	—	(1,295.3)	(1,583.3)	2,878.6	—
Investment contract deposits	—	—	10,770.9	—	10,770.9
Investment contract withdrawals	—	—	(8,392.7)	—	(8,392.7)
Net increase in banking operation deposits	—	—	129.0	—	129.0
Other	—	—	0.4	—	0.4
Net cash provided by (used in) financing activities	(804.0)	(1,309.3)	639.3	2,924.9	1,450.9
Net increase (decrease) in cash and cash equivalents	303.9	472.9	(298.5)	(323.5)	154.8
Cash and cash equivalents at beginning of period	578.7	730.5	2,413.3	(1,157.7)	2,564.8
Cash and cash equivalents at end of period	\$ 882.6	\$ 1,203.4	\$ 2,114.8	\$ (1,481.2)	\$ 2,719.6

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Management's Report on Internal Control Over Financial Reporting

Management of Principal Financial Group, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of management, including our Chief Executive Officer, Daniel J. Houston, and our Chief Financial Officer, Deanna D. Strable-Soethout, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on criteria established in the *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on our evaluation, management has concluded that Principal Financial Group, Inc.'s internal control over financial reporting was effective as of December 31, 2018.

Ernst & Young LLP, the independent registered public accounting firm that audited our financial statements included in this annual report on Form 10-K, has issued its report on the effectiveness of our internal control over financial reporting. The report is included in Item 8. "Financial Statements and Supplementary Data."

Changes in Internal Control Over Financial Reporting

We had no change in our internal control over financial reporting during our last fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Disclosure Controls and Procedures

In order to ensure the information we must disclose in our filings with the SEC is recorded, processed, summarized and reported on a timely basis, we have adopted disclosure controls and procedures. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure information required to be disclosed by us in the reports we file with or submit to the SEC is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Our Chief Executive Officer, Daniel J. Houston, and our Chief Financial Officer, Deanna D. Strable-Soethout, have reviewed and evaluated our disclosure controls and procedures as of December 31, 2018, and have concluded that our disclosure controls and procedures are effective.

Item 9B. Other Information

None

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information called for by Item 10 pertaining to directors is set forth in Principal Financial Group, Inc.'s proxy statement relating to the 2019 annual stockholders meeting (the "Proxy Statement"), which will be filed with the SEC on or about April 11, 2019, under the captions, "Election of Directors," "Corporate Governance," and "Security Ownership of Certain Beneficial Owners and Management — Section 16(a) Beneficial Ownership Reporting Compliance." Such information is incorporated herein by reference. The information called for by Item 10 pertaining to executive officers can be found in Part I of this Form 10-K under the caption, "Executive Officers of the Registrant." The Company has adopted a code of ethics that applies to our principal executive officer, principal financial officer and principal accounting officer. The code of ethics has been posted on our internet website, found at www.principal.com. We intend to satisfy disclosure requirements regarding amendments to, or waivers from, any provision of our code of ethics on our website.

Item 11. Executive Compensation

The information called for by Item 11 pertaining to executive compensation is set forth in the Proxy Statement under the caption, "Executive Compensation," and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information called for by Item 12 pertaining to security ownership of certain beneficial owners and management is set forth in the Proxy Statement under the caption, "Security Ownership of Certain Beneficial Owners and Management," and is incorporated herein by reference.

Equity Compensation Plan Information

In general, we have three compensation plans under which our equity securities are authorized for issuance to employees or directors (not including our tax qualified pension plans): the Principal Financial Group, Inc. 2014 Stock Incentive Plan, the Principal Financial Group, Inc. Employee Stock Purchase Plan and the Principal Financial Group, Inc. 2014 Directors Stock Plan. The following table shows the number of shares of common stock issuable upon exercise of options outstanding as of December 31, 2018, the weighted average exercise price of those options and the number of shares of common stock remaining available for future issuance as of December 31, 2018, excluding shares issuable upon exercise of outstanding options.

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by our stockholders (1)	8,201,832 (2)	\$ 46.77 (3)	10,963,662 (4)
Equity compensation plans not approved by our stockholders	—	n/a	—

- (1) The Principal Financial Group, Inc. Employee Stock Purchase Plan, the Principal Financial Group, Inc. Stock Incentive Plan and the Principal Financial Group, Inc. Directors Stock Plan were each approved by our sole stockholder, Principal Mutual Holding Company, prior to our initial public offering of common stock on October 22, 2001. Subsequently, the Principal Financial Group, Inc. 2005 Stock Incentive Plan and the Principal Financial Group, Inc. 2005 Directors Stock Plan were each approved by our stockholders on May 17, 2005. An amendment to the Principal Financial Group, Inc. Employee Stock Purchase Plan to increase the number of shares available for issuance under the plan was approved on May 19, 2009. On May 18, 2010, our shareholders approved the 2010 Stock Incentive Plan, which replaced the 2005 Stock Incentive Plan. The 2010 Stock Incentive Plan was subsequently renamed the Amended and Restated 2010 Stock Incentive Plan. On May 20, 2014, our shareholders approved the Principal Financial Group, Inc. 2014 Stock Incentive Plan and the Principal Financial Group, Inc. 2014 Directors Stock Plan.
- (2) Includes 4,248,224 options outstanding under the employee stock incentive plans, 611,522 performance shares under the employee stock incentive plans, 2,955,195 restricted stock units under the employee stock incentive plans, 321,640 restricted stock units under the directors stock plans and 65,251 other stock-based awards under the 2014 Directors Stock Plan for obligations under the Deferred Compensation Plan for Non-Employee Directors of Principal Financial Group, Inc.
- (3) The weighted-average exercise price relates only to outstanding stock options, not to outstanding performance shares, restricted stock units or other stock-based awards.
- (4) This number includes 2,226,028 shares remaining for issuance under the Employee Stock Purchase Plan, 8,573,734 shares available for issuance in respect of future awards of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance units and other stock-based awards under the 2014 Stock Incentive Plan and 163,900 shares available for issuance in respect of future awards of stock options, restricted stock, restricted stock units and other stock-based awards under the 2014 Directors Stock Plan.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information called for by Item 13 pertaining to certain relationships and related transactions is set forth in the Proxy Statement under the captions, "Corporate Governance — Director Independence," and "Corporate Governance — Certain Relationships and Related Transactions," and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information called for by Item 14 pertaining to principal accounting fees and services is set forth in the Proxy Statement under the caption, "Ratification of Appointment of Independent Registered Public Accountants," and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

a. Documents filed as part of this report.

1. Financial Statements (see Item 8. Financial Statements and Supplementary Data)

Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting
Report of Independent Registered Public Accounting Firm
Audited Consolidated Financial Statements

Consolidated Statements of Financial Position
Consolidated Statements of Operations
Consolidated Statements of Comprehensive Income
Consolidated Statements of Stockholders' Equity
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements

2. Schedule I — Summary of Investments — Other Than Investments in Related Parties

Schedule II — Condensed Financial Information of Registrant (Parent Only)
Schedule III — Supplementary Insurance Information
Schedule IV — Reinsurance

All other schedules for which provision is made in the applicable accounting regulation of the Securities and Exchange Commission are not required under the related instructions or are inapplicable and therefore have been omitted.

3. Exhibits

**Index of Exhibits
(Item 15 (a) 3.)**

Exhibit Number	Description	Incorporated by reference herein	
		Form	File Date
2.1	Sale and Purchase Promise Agreement, dated October 5, 2012, among Principal Financial Services, Inc., Empresas Penta S.A. and Inversiones Bapenta Limitada	8-K	November 13, 2012
3.1	Amended and Restated Certificate of Incorporation of Principal Financial Group, Inc.	8-K	June 17, 2005
3.2	Amended and Restated By-Laws of Principal Financial Group, Inc.	8-K	March 2, 2018
4.1	Form of Certificate for the Common Stock of Principal Financial Group, Inc., par value \$0.01 per share	S-1/A	August 2, 2001
4.2	Senior Indenture, dated as of October 11, 2006, between Principal Financial Group, Inc. and The Bank of New York, as Trustee	8-K	October 17, 2006
4.2.1	First Supplemental Indenture, dated as of October 16, 2006, among Principal Financial Group, Inc., Principal Financial Services, Inc. and The Bank of New York, as Trustee	8-K	October 17, 2006
4.2.2	6.05% Senior Note (\$500,000,000) due October 15, 2036	8-K	October 17, 2006
4.2.3	6.05% Senior Note (\$100,000,000) due October 15, 2036	8-K	December 6, 2006
4.2.4	Guarantee from Principal Financial Services, Inc. with respect to the 6.05% Senior Notes due 2036	8-K	October 17, 2006
4.3	Senior Indenture, dated as of May 21, 2009, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York, as Trustee	8-K	May 21, 2009
4.3.1	Third Supplemental Indenture (including the form of 2022 Notes), dated as of September 10, 2012, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee	8-K	September 10, 2012
4.3.2	Fourth Supplemental Indenture (including the form of 2042 Notes), dated as of September 10, 2012, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee	8-K	September 10, 2012
4.3.3	Sixth Supplemental Indenture (including the form of 2023 Notes), dated as of November 16, 2012, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee	8-K	November 16, 2012
4.3.4	Seventh Supplemental Indenture (including the form of 2043 Notes), dated as of November 16, 2012, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee	8-K	November 16, 2012
4.3.5	Eighth Supplemental Indenture (including the form of 3.400% Senior Note due 2025), dated as of May 7, 2015, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee, relating to the 3.400% Senior Notes due 2025	8-K	May 7, 2015
4.3.6	Ninth Supplemental Indenture (including the form of 3.100% Senior Note due 2026), dated as of November 10, 2016, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee, relating to the 3.100% Senior Notes due 2026	8-K	November 10, 2016
4.3.7	Tenth Supplemental Indenture (including the form of 4.300% Senior Note due 2046), dated as of November 10, 2016, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee, relating to the 4.300% Senior Notes due 2046	8-K	November 10, 2016
4.3.8	Guarantee from Principal Financial Services, Inc. with respect to the 3.300% Senior Notes due 2022	8-K	September 10, 2012
4.3.9	Guarantee from Principal Financial Services, Inc. with respect to the 4.625% Senior Notes due 2042	8-K	September 10, 2012
4.3.10	Guarantee from Principal Financial Services, Inc. with respect to the 3.125% Senior Notes due 2023	8-K	November 16, 2012
4.3.11	Guarantee from Principal Financial Services, Inc. with respect to the 4.350% Senior Notes due 2043	8-K	November 16, 2012
4.3.12	Guarantee from Principal Financial Services, Inc. with respect to the 3.400% Senior Notes due 2025	8-K	May 7, 2015
4.3.13	Guarantee from Principal Financial Services, Inc. with respect to the 3.100% Senior Notes due 2026	8-K	November 10, 2016
4.3.14	Guarantee from Principal Financial Services, Inc. with respect to the 4.300% Senior Notes due 2046	8-K	November 10, 2016
4.4	Junior Subordinated Indenture, dated as of May 7, 2015, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee	8-K	May 7, 2015
4.4.1	First Supplemental Indenture (including the form of 4.700% Fixed-to-Floating Rate Junior Subordinated Note due 2055), dated as of May 7, 2015, among Principal Financial Group, Inc., as issuer, Principal Financial Services, Inc., as guarantor, and The Bank of New York Mellon Trust Company, as trustee, relating to the 4.700% Fixed-to-Floating Rate Junior Subordinated Notes due 2055	8-K	May 7, 2015
4.4.2	Guarantee from Principal Financial Services, Inc. with respect to the 4.700% Fixed-to-Floating Rate Junior Subordinated Notes due 2055	8-K	May 7, 2015
10.1	Principal Financial Group, Inc. Stock Incentive Plan	10-Q	August 6, 2003
10.1.1	Form of Restricted Stock Unit Award Agreement	8-K	March 7, 2005
10.1.2	Form of Stock Option Award Agreement	8-K	March 7, 2005

Exhibit Number	Description	Incorporated by reference herein	
		Form	File Date
10.1.3	Principal Financial Group, Inc. 2005 Stock Incentive Plan	10-Q	August 3, 2005
10.1.4	Principal Financial Group, Inc. 2010 Stock Incentive Plan	DEF14A	April 6, 2010
10.1.5	Amended and Restated Principal Financial Group, Inc. 2010 Stock Incentive Plan	10-Q	May 2, 2012
10.1.6	Principal Financial Group, Inc. 2014 Stock Incentive Plan	DEF14A	April 7, 2014
10.2	Principal Financial Group Long-Term Performance Plan	S-1	June 8, 2001
10.3	Resolution of Human Resources Committee of the Board of Directors of Principal Financial Group, Inc. amending the Principal Financial Group Long-Term Performance Plan as of October 31, 2002	10-K	March 5, 2003
10.4	Principal Financial Group Incentive Pay Plan (PrinPay), amended and restated effective January 1, 2003	10-Q	May 7, 2003
10.5	Principal Financial Group, Inc. Annual Incentive Plan	10-K	March 4, 2005
10.6	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors of the Principal Financial Group, Inc. Board of Directors	10-Q	November 5, 2008
10.6.1	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors, effective March 28, 2009	10-Q	May 6, 2009
10.6.2	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors of the Principal Financial Group, Inc., effective May 17, 2010	10-K	February 16, 2011
10.6.3	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors of the Principal Financial Group, Inc., effective January 1, 2012	10-K	February 15, 2012
10.6.4	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors of Principal Financial Group, Inc., effective January 1, 2015	10-K	February 11, 2015
10.6.5	Revised Summary of Standard Compensatory Arrangement for Non-Employee Directors of the Principal Financial Group, Inc., effective November 28, 2017	10-K	February 9, 2018
10.7	Principal Financial Group, Inc. Directors Stock Plan	S-1	June 8, 2001
10.7.1	Principal Financial Group, Inc. 2005 Directors Stock Plan	10-Q	August 3, 2005
10.7.2	Principal Financial Group, Inc. 2014 Directors Stock Plan	DEF14A	April 7, 2014
10.8	Deferred Compensation Plan for Non-Employee Directors of Principal Financial Group, Inc.	10-K	March 2, 2006
10.9	Principal Select Savings Excess Plan, restated as of January 1, 2004	10-Q	May 5, 2004
10.9.1	Amendment No. 1 to Principal Select Savings Excess Plan	10-K	March 2, 2006
10.9.2	Principal Select Savings Excess Plan for Employees, amended and restated effective January 1, 2016	10-K	February 10, 2016
10.9.3	Principal Select Savings Excess Plan for Individual Field, amended and restated effective January 1, 2016	10-K	February 10, 2016
10.9.4	Nonqualified Deferred Compensation Plan for Select Investment Professions of Principal Financial Group, Inc. and Affiliates, effective January 1, 2016	10-K	February 10, 2016
10.10	Supplemental Executive Retirement Plan for Employees, restated as of January 1, 2003	10-Q	May 5, 2004
10.10.1	Amendment No. 1 to the Principal Supplemental Executive Retirement Plan for Employees	10-K	March 2, 2006
10.11	Form of Principal Financial Group, Inc. and Principal Life Insurance Company Change-of-Control Employment Agreement (Tier One Executives), dated as of February 28, 2006, by and among Principal Financial Group, Inc., Principal Financial Services, Inc., Principal Life Insurance Company and an Executive	10-Q	May 4, 2006
10.11.1	Form of Principal Financial Group, Inc. and Principal Life Insurance Company Change-of-Control Employment Agreement (Tier One Executives)	8-K	December 2, 2008
10.11.2	Form of Principal Financial Group, Inc. and Principal Life Insurance Company Change of Control Employment Agreement (Tier One Executives), effective December 31, 2010	10-K	February 16, 2011
10.12	Form of Principal Financial Group, Inc. Indemnification Agreement	8-K	December 2, 2008
10.12.1	Form of Principal Financial Group, Inc. Indemnification Agreement dated as of June 9, 2016.	10-Q	August 3, 2016
10.13	Compensatory Arrangement, dated as of March 14, 2002, between Principal Life Insurance Company and James P. McCaughan	10-Q	May 10, 2002
10.14	The Principal Severance Plan for Senior Executives, restated effective March 1, 2009	10-Q	May 6, 2009
21	Principal Financial Group, Inc. Member Companies as of December 31, 2018		
23	Consent of Independent Registered Public Accounting Firm		
31.1	Certification of Daniel J. Houston		
31.2	Certification of Deanna D. Strable-Soethout		
32.1	Certification Pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code — Daniel J. Houston		
32.2	Certification Pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code — Deanna D. Strable-Soethout		
101	The following materials from Principal Financial Group, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Statements of Financial Position, (ii) the Consolidated Statements of Operations, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Stockholders' Equity, (v) the Consolidated Statements of Cash Flows, (vi) the Notes to Consolidated Financial Statements, (vii) Schedule I — Summary of Investments — Other Than Investments in Related Parties, (viii) Schedule II — Condensed Financial Information of Registrant (Parent Only), (ix) Schedule III — Supplementary Insurance Information and (x) Schedule IV — Reinsurance		

Paper copies of exhibits will be provided to shareholders upon reasonable request and upon payment of reasonable copying and mailing expenses.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PRINCIPAL FINANCIAL GROUP, INC.

Dated: February 13, 2019

By /s/ DEANNA D. STRABLE-SOETHOUT

Deanna D. Strable-Soethout
Executive Vice President and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

Dated: February 13, 2019

By /s/ DANIEL J. HOUSTON

Daniel J. Houston
Chairman, President, Chief Executive Officer and Director

By /s/ SANDRA L. HELTON

Sandra L. Helton
Director

By /s/ DEANNA D. STRABLE-SOETHOUT

Deanna D. Strable-Soethout
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and
Principal Accounting Officer)

By /s/ ROGER C. HOCHSCHILD

Roger C. Hochschild
Director

By /s/ BETSY J. BERNARD

Betsy J. Bernard
Director

By /s/ SCOTT M. MILLS

Scott M. Mills
Director

By /s/ JOCELYN CARTER-MILLER

Jocelyn Carter-Miller
Director

By /s/ DIANE C. NORDIN

Diane C. Nordin
Director

By /s/ MICHAEL T. DAN

Michael T. Dan
Director

By /s/ BLAIR C. PICKERELL

Blair C. Pickerell
Director

By /s/ DANIEL GELATT, JR.

C. Daniel Gelatt, Jr.
Director

By /s/ ELIZABETH E. TALLETT

Elizabeth E. Tallett
Director

Schedule I — Summary of Investments — Other Than Investments in Related Parties
December 31, 2018

Type of Investment	Cost	Fair value	Amount as shown in the Consolidated statement of Financial Position
	<i>(in millions)</i>		
Fixed maturities, available-for-sale:			
U.S. Treasury securities and obligations of U.S. government corporations and agencies	\$ 1,441.6	\$ 1,441.0	\$ 1,441.0
States, municipalities and political subdivisions	6,125.0	6,225.7	6,225.7
Foreign governments	833.4	890.5	890.5
Public utilities	4,545.0	3,848.1	3,848.1
Redeemable preferred stock	33.8	34.7	34.7
All other corporate bonds	30,555.8	31,656.5	31,656.5
Residential mortgage-backed securities	2,488.5	2,460.6	2,460.6
Commercial mortgage-backed securities	4,023.1	3,945.6	3,945.6
Collateralized debt obligations	2,451.3	2,420.8	2,420.8
Other debt obligations	7,228.3	7,185.0	7,185.0
Total fixed maturities, available-for-sale	59,725.8	60,108.5	60,108.5
Fixed maturities, trading	636.1	636.1	636.1
Equity securities:			
Banks, trust and insurance companies	520.1	520.1	520.1
Industrial, miscellaneous and all other	713.6	713.6	713.6
Other corporate	463.0	463.0	463.0
Non-redeemable preferred stock	147.0	147.0	147.0
Total equity securities	1,843.7	1,843.7	1,843.7
Mortgage loans	15,336.9	XXXX	15,336.9
Real estate, net:			
Real estate acquired in satisfaction of debt	5.8	XXXX	5.8
Other real estate	1,723.9	XXXX	1,723.9
Policy loans	801.4	XXXX	801.4
Other investments	4,310.3	XXXX	4,310.3
Total investments	<u>\$ 84,383.9</u>	XXXX	<u>\$ 84,766.6</u>

Schedule II — Condensed Financial Information of Registrant (Parent Only)

Statements of Financial Position

	December 31,	
	2018	2017
	<i>(in millions)</i>	
Assets		
Fixed maturities, available-for-sale	\$ 211.5	\$ —
Fixed maturities, trading	308.9	351.8
Cash and cash equivalents	334.9	842.8
Other investments	10.7	10.2
Income taxes receivable	16.9	44.2
Deferred income taxes	331.0	329.4
Amounts receivable from subsidiaries	5.2	4.4
Other assets	23.3	12.8
Investment in unconsolidated entities	13,862.4	15,063.2
Total assets	\$ 15,104.8	\$ 16,658.8
Liabilities		
Long-term debt	\$ 3,129.8	\$ 3,128.1
Accrued investment payable	23.1	23.1
Pension liability	557.9	658.3
Other liabilities	4.0	—
Total liabilities	3,714.8	3,809.5
Stockholders' equity		
Common stock, par value \$.01 per share — 2,500 million shares authorized, 476.7 million and 474.1 million shares issued, and 279.5 million and 289.0 million shares outstanding in 2018 and 2017	4.8	4.7
Additional paid-in capital	10,060.7	9,925.2
Retained earnings	10,290.2	9,482.9
Accumulated other comprehensive income (loss)	(1,565.1)	165.5
Treasury stock, at cost (197.2 million and 185.1 million shares in 2018 and 2017)	(7,400.6)	(6,729.0)
Total stockholders' equity attributable to Principal Financial Group, Inc.	11,390.0	12,849.3
Total liabilities and stockholders' equity	\$ 15,104.8	\$ 16,658.8

See accompanying notes.

Statements of Operations

	For the year ended		
	December 31,		
	2018	2017	2016
	(in millions)		
Revenues			
Fees and other revenues	\$ —	\$ 7.8	\$ —
Net investment income	25.8	9.7	3.4
Net realized capital losses	(8.2)	(0.6)	—
Total revenues	17.6	16.9	3.4
Expenses			
Other operating costs and expenses	191.9	238.1	312.3
Total expenses	191.9	238.1	312.3
Loss before income taxes	(174.3)	(221.2)	(308.9)
Income taxes (benefits)	(62.5)	63.1	(134.9)
Equity in the net income of subsidiaries	1,658.3	2,594.7	1,490.5
Net income attributable to Principal Financial Group, Inc.	\$ 1,546.5	\$ 2,310.4	\$ 1,316.5

See accompanying notes.

Statements of Cash Flows

	For the year ended December 31,		
	2018	2017	2016
	<i>(in millions)</i>		
Operating activities			
Net income	\$ 1,546.5	\$ 2,310.4	\$ 1,316.5
Adjustments to reconcile net income to net cash used in operating activities:			
Net realized capital losses	8.2	0.6	—
Stock-based compensation	2.9	3.0	3.6
Equity in the net income of subsidiaries	(1,658.3)	(2,594.7)	(1,490.5)
Changes in:			
Net cash flows for trading securities and equity securities with operating intent	32.4	(352.6)	—
Current and deferred income taxes (benefits)	15.7	163.8	(60.3)
Other	(79.8)	26.3	42.1
Net cash used in operating activities	(132.4)	(443.2)	(188.6)
Investing activities			
Fixed maturities available-for-sale and equity securities with intent to hold:			
Purchases	(210.9)	—	—
Maturities	2.3	—	—
Net purchases of property and equipment	(0.1)	(0.1)	(0.1)
Net change in other investments	(2.2)	(1.1)	1.3
Dividends and returns of capital received from unconsolidated entities	1,041.6	1,002.5	1,295.3
Net cash provided by investing activities	830.7	1,001.3	1,296.5
Financing activities			
Issuance of common stock	64.0	162.5	37.8
Acquisition of treasury stock	(671.6)	(220.4)	(277.3)
Excess tax benefits from share-based payment arrangements	—	—	0.7
Dividends to common stockholders	(598.6)	(540.0)	(464.9)
Principal repayments of long-term debt	—	—	(744.5)
Issuance of long-term debt	—	—	644.2
Net cash used in financing activities	(1,206.2)	(597.9)	(804.0)
Net increase (decrease) in cash and cash equivalents	(507.9)	(39.8)	303.9
Cash and cash equivalents at beginning of year	842.8	882.6	578.7
Cash and cash equivalents at end of year	<u>\$ 334.9</u>	<u>\$ 842.8</u>	<u>\$ 882.6</u>

See accompanying notes.

(1) Basis of Presentation

The accompanying condensed financial information should be read in conjunction with the consolidated financial statements and notes thereto of Principal Financial Group, Inc.

In the parent company only financial statements, our investment in unconsolidated entities is stated at cost plus equity in undistributed earnings of subsidiaries.

Principal Financial Group, Inc. sponsors nonqualified benefit plans for select employees and agents and is responsible for the obligations of these plans. Nonqualified plan assets are held in Rabbi trusts for the benefit of all nonqualified plan participants. The invested assets and benefit plan liabilities reported in the statements of financial position exclude amounts held in these trusts. The Rabbi trusts had \$671.7 million and \$643.3 million of plan assets and \$542.4 million and \$524.7 million of benefit plan liabilities as of December 31, 2018 and 2017, respectively.

During November 2016, the parent company became the sponsor of the defined contribution plans and deferred compensation plans discussed in Item 8. "Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements, Note 11, Employee and Agent Benefits." Prior to November 2016, Principal Life Insurance Company, an indirect wholly owned subsidiary of the parent company, was the sponsor of these plans.

(2) Dividends and Returns of Capital Received from (Contributions to) Unconsolidated Entities

The parent company received cash dividends and returns of capital totaling \$1,041.6 million, \$1,002.5 million and \$1,295.3 million from subsidiaries in 2018, 2017 and 2016, respectively.

(3) Supplemental Disclosures of Non-Cash Investing Activity

The parent company's assumption of the deferred income tax asset and net plan assets associated with the defined contribution plans and deferred compensation plans previously sponsored by Principal Life Insurance Company resulted in a non-cash increase in the parent company's investment in subsidiary of \$74.6 million in 2016.

Schedule III — Supplementary Insurance Information
As of December 31, 2018 and 2017 and for each of the years ended December 31, 2018, 2017 and 2016

<u>Segment</u>	<u>Deferred acquisition costs</u>	<u>Future policy benefits and claims</u> <i>(in millions)</i>	<u>Contractholder and other Policyholder Funds</u>
2018:			
Retirement and Income Solutions	\$ 988.3	\$ 21,217.9	\$ 32,295.1
Principal Global Investors	—	—	—
Principal International	13.1	4,317.6	1,183.1
U.S. Insurance Solutions	2,692.1	9,950.3	7,458.4
Corporate	—	179.0	(348.5)
Total	<u>\$ 3,693.5</u>	<u>\$ 35,664.8</u>	<u>\$ 40,588.1</u>
2017:			
Retirement and Income Solutions	\$ 887.5	\$ 18,437.2	\$ 30,767.9
Principal Global Investors	—	—	—
Principal International	209.0	4,703.6	1,252.4
U.S. Insurance Solutions	2,444.2	9,700.1	7,322.3
Corporate	—	178.4	(337.8)
Total	<u>\$ 3,540.7</u>	<u>\$ 33,019.3</u>	<u>\$ 39,004.8</u>

Schedule III — Supplementary Insurance Information — (continued)
As of December 31, 2018 and 2017 and for each of the years ended December 31, 2018, 2017 and 2016

<u>Segment</u>	<u>Premiums and other considerations</u>	<u>Net investment income (1)</u>	<u>Benefits, claims and settlement expenses</u> <i>(in millions)</i>	<u>Amortization of deferred acquisition costs</u>	<u>Other Operating expenses (1)</u>
2018:					
Retirement and Income Solutions	\$ 3,635.9	\$ 2,204.1	\$ 5,099.0	\$ 124.5	\$ 1,191.2
Principal Global Investors	—	4.2	—	—	1,176.9
Principal International	317.2	494.9	646.6	1.3	467.9
U.S. Insurance Solutions	2,456.5	806.2	2,444.6	127.7	939.9
Corporate	—	119.8	2.3	—	107.3
Total	<u>\$ 6,409.6</u>	<u>\$ 3,629.2</u>	<u>\$ 8,192.5</u>	<u>\$ 253.5</u>	<u>\$ 3,883.2</u>
2017:					
Retirement and Income Solutions	\$ 3,671.1	\$ 2,069.2	\$ 4,972.6	\$ 35.8	\$ 1,158.1
Principal Global Investors	—	13.4	—	—	974.7
Principal International	218.0	510.6	507.1	22.4	404.3
U.S. Insurance Solutions	2,328.3	775.0	2,345.3	176.4	867.7
Corporate	—	91.1	(2.4)	—	254.4
Total	<u>\$ 6,217.4</u>	<u>\$ 3,459.3</u>	<u>\$ 7,822.6</u>	<u>\$ 234.6</u>	<u>\$ 3,659.2</u>
2016:					
Retirement and Income Solutions	\$ 2,860.9	\$ 1,931.2	\$ 4,108.3	\$ 161.4	\$ 1,114.3
Principal Global Investors	—	12.6	—	—	935.8
Principal International	274.6	491.4	584.6	22.5	365.5
U.S. Insurance Solutions	2,163.6	751.2	2,221.4	101.2	796.4
Corporate	—	110.1	(1.1)	—	235.5
Total	<u>\$ 5,299.1</u>	<u>\$ 3,296.5</u>	<u>\$ 6,913.2</u>	<u>\$ 285.1</u>	<u>\$ 3,447.5</u>

(1) Allocations of net investment income and certain operating expenses are based on a number of assumptions and estimates. Reported operating results would change by segment if different methods were applied.

Schedule IV — Reinsurance
As of December 31, 2018, 2017 and 2016 and for each of the years then ended

	<u>Gross amount</u>	<u>Ceded to other companies</u>	<u>Assumed from other companies (\$ in millions)</u>	<u>Net amount</u>	<u>Percentage of amount Assumed to net</u>
2018:					
Life insurance in force	\$ 530,828.6	\$ 324,691.3	\$ 1,028.6	\$ 207,165.9	0.5%
Premiums:					
Life insurance and annuities	\$ 5,055.8	\$ 359.9	\$ 1.7	\$ 4,697.6	—%
Accident and health insurance	1,872.5	160.5	—	1,712.0	—%
Total	<u>\$ 6,928.3</u>	<u>\$ 520.4</u>	<u>\$ 1.7</u>	<u>\$ 6,409.6</u>	—%
2017:					
Life insurance in force	\$ 486,887.5	\$ 287,538.8	\$ 1,059.5	\$ 200,408.2	0.5%
Premiums:					
Life insurance and annuities	\$ 4,945.7	\$ 320.7	\$ 1.9	\$ 4,626.9	—%
Accident and health insurance	1,753.6	163.1	—	1,590.5	—%
Total	<u>\$ 6,699.3</u>	<u>\$ 483.8</u>	<u>\$ 1.9</u>	<u>\$ 6,217.4</u>	—%
2016:					
Life insurance in force	\$ 437,977.4	\$ 242,777.7	\$ 1,087.8	\$ 196,287.5	0.6%
Premiums:					
Life insurance and annuities	\$ 4,137.1	\$ 285.2	\$ 1.7	\$ 3,853.6	—%
Accident and health insurance	1,616.7	171.2	—	1,445.5	—%
Total	<u>\$ 5,753.8</u>	<u>\$ 456.4</u>	<u>\$ 1.7</u>	<u>\$ 5,299.1</u>	—%

Principal Financial Group, Inc. Member Companies
December 31, 2018

Corporation	State or Country of Domicile
Administradora de Fondos de Pensiones Cuprum S.A.	Chile
Benelux Industrial Partnership General Partner B.V.	Netherlands
Brasilprev Seguros e Previdencia S.A.	Brazil
CCB Principal Asset Management Co., Ltd.	China
CCI Capital Partners, LLC	Delaware
CCIP, LLC	Delaware
Ciclic Corretora de Seguros S.A.	Brazil
CIMB Principal Islamic Asset Management Sdn. Bhd.	Malaysia
CIMB Wealth Advisors Berhad	Malaysia
CIMB-Principal Asset Management (S) Pte. Ltd.	Singapore
CIMB-Principal Asset Management Berhad	Malaysia
CIMB-Principal Asset Management Company Limited	Thailand
Claritas Administração de Recursos Ltda.	Brazil
Claritas Investments Ltd.	Cayman Islands
Columbus Circle Investors	Delaware
Delaware Charter Guarantee & Trust Company	Delaware
Diversified Dental Services, Inc.	Nevada
Employers Dental Services, Inc.	Arizona
Equity FC, Ltd.	Iowa
Finansa Asset Management Limited	Thailand
Finisterre Capital LLP	United Kingdom
Finisterre Capital UK Limited	United Kingdom
Finisterre Holdings Limited	Malta
Finisterre Malta Limited	Malta
Finisterre USA, Inc.	Delaware
First Dental Health	California
GAVI PREHC HC, LLC	Delaware
GAVI PREPI HC, LLC	Delaware
Hipotecaria Security Principal, S.A.	Chile
INTERNOS Real Estate Limited	United Kingdom
Inversiones Cuprum Internacional S.A.	Chile
LGCM (Cayman) Limited	Cayman Islands
Liongate Capital Management (Cayman) Limited	Cayman Islands
Liongate Capital Management (UK) Limited	United Kingdom
Liongate Capital Management Limited	Malta
Liongate Capital Management LLP	United Kingdom
Liongate Limited	Malta
Origin Asset Management LLP	United Kingdom
Petula Associates, LLC	Iowa
Petula Prolix Development Company	Iowa
PFG Do Brasil 2 Participacoes Ltda	Brazil
PFG Do Brasil LTDA	Brazil
PGI Finisterre Holding Company Ltd.	United Kingdom
PGI Origin Holding Company Ltd.	United Kingdom
Post Advisory Group, LLC	Delaware
Preferred Product Network, Inc.	Delaware
Principal Administradora General de Fondos S.A.	Chile
Principal Advised Services, LLC	Delaware
Principal Afore, S.A. de C.V., Principal Grupo Financiero	Mexico
Principal Ahorro e Inversiones S.A.	Chile
Principal Asia Pacific Investment Consulting (Beijing) Limited	China

Principal Asset Management Company (Asia) Limited	Hong Kong
Principal Asset Management Private Limited	India
Principal Bank	Iowa
Principal Chile Limitada	Chile
Principal Commercial Acceptance, LLC	Delaware
Principal Commercial Funding, LLC	Delaware
Principal Compañía de Seguros de Vida Chile S.A.	Chile
Principal Consulting (India) Private Limited	India
Principal Dental Services, Inc.	Arizona
Principal Development Investors, L.L.C.	Delaware
Principal Enterprise Capital, LLC	Delaware
Principal Financial Advisors, Inc.	Iowa
Principal Financial Group (Mauritius) Ltd.	Mauritius
Principal Financial Group, Inc.	Delaware
Principal Financial Group, S.A. de C.V., Grupo Financiero	Mexico
Principal Financial Services Asia Ltd	United Kingdom
Principal Financial Services (Australia), LLC	Iowa
Principal Financial Services I (UK) LLP	United Kingdom
Principal Financial Services I (US), LLC	Delaware
Principal Financial Services II (UK) Ltd.	United Kingdom
Principal Financial Services II (US), LLC	Delaware
Principal Financial Services III (UK) Ltd.	United Kingdom
Principal Financial Services IV (UK) LLP	United Kingdom
Principal Financial Services Latin America Ltd.	United Kingdom
Principal Financial Services V (UK) Ltd.	United Kingdom
Principal Financial Services VI (UK) Ltd	United Kingdom
Principal Financial Services, Inc.	Iowa
Principal Fondos de Inversión, S.A. de C.V., Operadora de Fondos de Inversión, Principal Grupo Financiero	Mexico
Principal Funds Distributor, Inc.	Washington
Principal Generation Plant, LLC	Delaware
Principal Global Columbus Circle, LLC	Delaware
Principal Global Financial Services (Europe) II Ltd	United Kingdom
Principal Global Financial Services (Europe) Ltd	United Kingdom
Principal Global Investors (Asia) Limited	Hong Kong
Principal Global Investors Asia (UK) Ltd	United Kingdom
Principal Global Investors (Australia) Limited	Australia
Principal Global Investors (Australia) Service Company Pty Ltd	Australia
Principal Global Investors (EU) Limited	Ireland
Principal Global Investors (Europe) Limited	United Kingdom
Principal Global Investors (Hong Kong) Limited	Hong Kong
Principal Global Investors (Ireland) Limited	Ireland
Principal Global Investors (Japan) Ltd.	Japan
Principal Global Investors (Singapore) Limited	Singapore
Principal Global Investors (Switzerland) GmbH	Switzerland
Principal Global Investors Holding Company, LLC	Delaware
Principal Global Investors Holding Company (US), LLC	Delaware
Principal Global Investors Participacoes LTDA	Brazil
Principal Global Investors Trust Company	Oregon
Principal Global Investors, LLC	Delaware
Principal Global Services Private Limited	India
Principal Holding Company Chile S.A.	Chile
Principal Holding Company, LLC	Iowa
Principal Hotel Immobilienfonds II General Partner S.à.r.l.	Luxembourg
Principal Innovations, Inc.	Delaware
Principal Insurance Company (Hong Kong) Limited	Hong Kong
Principal International (Asia) Limited	Hong Kong
Principal International Asia (UK) Ltd	United Kingdom
Principal International (South Asia) Snd. Bhd	Malaysia

Principal International de Chile S.A.	Chile
Principal International Holding Company, LLC	Delaware
Principal International India Ltd	United Kingdom
Principal International Latin America Ltd.	United Kingdom
Principal International Mexico, LLC	Delaware
Principal International South America I Ltd.	United Kingdom
Principal International South America II Ltd.	United Kingdom
Principal International South America II Ltd., Agencia en Chile	Chile
Principal International, LLC	Iowa
Principal Investment & Retirement Services Limited	Hong Kong
Principal Investors Corporation	New Jersey
Principal Life Insurance Company	Iowa
Principal Life Insurance Company of Iowa	Iowa
Principal Mexico Servicios, S.A. de C.V.	Mexico
Principal National Life Insurance Company	Iowa
Principal Nominee Company (Hong Kong) Limited	Hong Kong
Principal Opportunity Fund LP	United Kingdom
Principal Pensiones, S.A. De C.V., Principal Grupo Financiero	Mexico
Principal Real Estate B.V.	Netherlands
Principal Real Estate Europe Limited	United Kingdom
Principal Real Estate Fund Investors, LLC	Delaware
Principal Real Estate GmbH	Germany
Principal Real Estate Holding Company, LLC	Delaware
Principal Real Estate Investors, LLC	Delaware
Principal Real Estate Kapitalverwaltungsgesellschaft mbH	Germany
Principal Real Estate Limited	United Kingdom
Principal Real Estate Portfolio, Inc.	Delaware
Principal Real Estate S.à.r.l.	Luxembourg
Principal Real Estate SAS	France
Principal Real Estate S.L.	Spain
Principal Real Estate Spezialfondsgesellschaft mbH	Germany
Principal Reinsurance Company of Delaware	Delaware
Principal Reinsurance Company of Delaware II	Delaware
Principal Reinsurance Company of Vermont	Vermont
Principal Retirement Advisors Private Limited	India
Principal Securities, Inc.	Iowa
Principal Seguros, S.A. De C.V., Principal Grupo Financiero	Mexico
Principal Servicios Corporativos Chile Ltda.	Chile
Principal Servicios de Administración S.A.	Chile
Principal Shareholder Services, Inc.	Washington
Principal Trust Company (Asia) Limited	Hong Kong
Principal Trust Company (Bermuda) Limited	Bermuda
Principal Trust Company (Hong Kong) Limited	Hong Kong
Principal Trustee Company Private Limited	India
PT CIMB-Principal Asset Management	Indonesia
RobustWealth, Inc.	Delaware
SAMI Brokerage LLC	Delaware
Spectrum Asset Management, Inc.	Connecticut

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following registration statements:

- 1) Universal shelf Registration Statement (Form S-3, File No. 333-217624) and related Prospectus of Principal Financial Group, Inc. and Principal Financial Services, Inc. for the registration of an unspecified amount of various securities,
- 2) Registration Statement (Form S-8, File No. 333-143070) pertaining to Principal Financial Group, Inc. 2005 Stock Incentive Plan and Principal Financial Group, Inc. 2005 Directors Stock Plan,
- 3) Registration Statement (Form S-8, File No. 333-201505) pertaining to Principal Financial Group, Inc. 2014 Stock Incentive Plan and Principal Financial Group, Inc. 2014 Directors Stock Plan
- 4) Registration Statement (Form S-8, File No. 333-178510) pertaining to The Principal Select Savings Plan for Individual Field and The Principal Select Savings Plan for Employees, and
- 5) Registration Statement (Form S-8, File No. 333-160232) pertaining to Principal Financial Group, Inc. Employee Stock Purchase Plan;

of our reports dated February 13, 2019, with respect to the consolidated financial statements and schedules of Principal Financial Group, Inc., and the effectiveness of internal control over financial reporting of Principal Financial Group, Inc., included in this Annual Report (Form 10-K) of Principal Financial Group, Inc. for the year ended December 31, 2018.

/s/ Ernst & Young LLP

Des Moines, Iowa
February 13, 2019

CERTIFICATIONS

I, Daniel J. Houston, certify that:

1. I have reviewed this annual report on Form 10-K of Principal Financial Group, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 13, 2019

/s/ Daniel J. Houston

Daniel J. Houston

Chairman, President and Chief Executive Officer

CERTIFICATIONS

I, Deanna D. Strable-Soethout, certify that:

1. I have reviewed this annual report on Form 10-K of Principal Financial Group, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 13, 2019

/s/ Deanna D. Strable-Soethout

Deanna D. Strable-Soethout

Executive Vice President and Chief Financial Officer

**Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code**

I, Daniel J. Houston, Chairman, President and Chief Executive Officer of Principal Financial Group, Inc., certify that (i) the Form 10-K for the period ended December 31, 2018, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and (ii) the information contained in the Form 10-K for the period ended December 31, 2018, fairly presents, in all material respects, the financial condition and results of operations of Principal Financial Group, Inc.

/s/ Daniel J. Houston

Daniel J. Houston

Chairman, President and Chief Executive Officer

Date: February 13, 2019

**Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code**

I, Deanna D. Strable-Soethout, Executive Vice President and Chief Financial Officer of Principal Financial Group, Inc., certify that (i) the Form 10-K for the period ended December 31, 2018, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and (ii) the information contained in the Form 10-K for the period ended December 31, 2018, fairly presents, in all material respects, the financial condition and results of operations of Principal Financial Group, Inc.

/s/ Deanna D. Strable-Soethout

Deanna D. Strable-Soethout

Executive Vice President and Chief Financial Officer

Date: February 13, 2019