TRAVELERS COMPANIES, INC.
Form 10-K
February 14, 2019

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

FORM 10-K
x 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 001-10898

The Travelers Companies, Inc.
(Exact name of registrant as specified in its charter)

Minnesota	41-0518860
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

485 Lexington Avenue,
New York, NY 10017
(Address of principal executive offices) (Zip Code)
(917) 778-6000
(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Common stock, without par value	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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 x 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 x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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 to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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 Act:

Large accelerated filer x	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 Act). Yes ¨ No x

As of June 30, 2018, the aggregate market value of the registrant's voting and non-voting common equity held by non-affiliates was $32,661,754,275.

As of February 8, 2019, 263,391,034 shares of the registrant's common stock (without par value) were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement relating to the 2019 Annual Meeting of Shareholders are incorporated by reference into Part III of this report.

Table of Contents

The Travelers Companies, Inc.
Annual Report on Form 10-K
For Fiscal Year Ended December 31, 2018

TABLE OF CONTENTS

Item Number		Page
	Part I	
1.	Business	3
1A.	Risk Factors	37
1B.	Unresolved Staff Comments	57
2.	Properties	57
3.	Legal Proceedings	57
4.	Mine Safety Disclosures	57
	Part II	
5.	Market for Registrant's Common Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities	57
6.	Selected Financial Data	60
7.	Management's Discussion and Analysis of Financial Condition and Results of Operations	61
7A.	Quantitative and Qualitative Disclosures About Market Risk	120
8.	Financial Statements and Supplementary Data	123
9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	220
9A.	Controls and Procedures	220
9B.	Other Information	223
	Part III	
10.	Directors, Executive Officers and Corporate Governance	223
11.	Executive Compensation	225
12.	Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters	225
13.	Certain Relationships and Related Transactions, and Director Independence	226
14.	Principal Accountant Fees and Services	226
	Part IV	
15.	Exhibits and Financial Statement Schedules	226
16.	Form 10-K Summary	228
	Signatures	229

Table of Contents

PART I

Item 1. BUSINESS

The Travelers Companies, Inc. (together with its consolidated subsidiaries, the Company) is a holding company principally engaged, through its subsidiaries, in providing a wide range of commercial and personal property and casualty insurance products and services to businesses, government units, associations and individuals. The Company is incorporated as a general business corporation under the laws of the State of Minnesota and is one of the oldest insurance organizations in the United States, dating back to 1853. The principal executive offices of the Company are located at 485 Lexington Avenue, New York, New York 10017, and its telephone number is (917) 778-6000. The Company also maintains executive offices in Hartford, Connecticut, and St. Paul, Minnesota. The term "TRV" in this document refers to The Travelers Companies, Inc., the parent holding company excluding subsidiaries.

PROPERTY AND CASUALTY INSURANCE OPERATIONS

The property and casualty insurance industry is highly competitive in the areas of price, service, product offerings, agent relationships and methods of distribution. Distribution methods include the use of independent agents, exclusive agents, direct marketing and/or salaried employees. According to A.M. Best, there are approximately 1,150 property and casualty groups in the United States, comprising approximately 2,600 property and casualty companies. Of those groups, the top 150 accounted for approximately 92% of the consolidated industry's total net written premiums in 2017. The Company competes with both foreign and domestic insurers. In addition, several property and casualty insurers writing commercial lines of business, including the Company, offer products for alternative forms of risk protection in addition to traditional insurance products. These products include large deductible programs and various forms of self-insurance, some of which utilize captive insurance companies and risk retention groups. The Company's competitive position in the marketplace is based on many factors, including the following:

- ability to profitably price business, retain existing customers and obtain new business;
- premiums charged, contract terms and conditions, products and services offered (including the ability to design customized programs);
- agent, broker and policyholder relationships;
- ability to keep pace relative to competitors with changes in technology and information systems;
- ability to use data and analytics to make decisions;
- speed of claims payment;
- ability to provide a positive customer experience;
- ability to provide products and services in a cost effective manner;
- ability to provide new products and services to meet changing customer needs;
- ability to adapt to changes in business models, technology, customer preferences or regulation impacting the markets in which the Company operates;
- perceived overall financial strength and corresponding ratings assigned by independent rating agencies;
- reputation, experience and qualifications of employees;
- geographic scope of business; and
- local presence.

In addition, the marketplace is affected by the available capacity of the insurance industry, as measured by statutory capital and surplus, and the availability of reinsurance from both traditional sources, such as reinsurance companies and capital markets (through catastrophe bonds), and non-traditional sources, such as hedge funds and pension plans. Industry capacity as measured by statutory capital and surplus expands and contracts primarily in conjunction with profit levels generated by the industry, less amounts returned to shareholders through dividends and share repurchases. Capital raised by debt and equity offerings may also increase statutory capital and surplus.

Pricing and Underwriting

Pricing of the Company's property and casualty insurance products is generally developed based upon an estimation of expected losses, the expenses associated with producing, issuing and servicing business and managing claims, the time value of money related to the expected loss and expense cash flows, and a reasonable profit margin that considers the capital needed to support the Company's business. The Company has a disciplined approach to underwriting and risk management that emphasizes product

returns and profitable growth over the long-term rather than premium volume or market share. The Company's insurance subsidiaries are subject to state laws and regulations regarding rate and policy form approvals. The applicable state laws and regulations establish standards in certain lines of business to ensure that rates are not excessive, inadequate, unfairly discriminatory, or used to engage in unfair price competition. The Company's ability to increase rates and the relative timing of the process are dependent upon each respective state's requirements, as well as the competitive market environment.

Geographic Distribution

The following table shows the geographic distribution of the Company's consolidated direct written premiums for the year ended December 31, 2018:

Location	% of Total
Domestic:	
California	9.8 %
New York	9.6
Texas	7.9
Pennsylvania	4.5
Florida	4.2
New Jersey	3.9
Illinois	3.8
Georgia	3.5
Massachusetts	3.0
All other domestic [(1)]	43.2
Total Domestic	93.4
International:	
Canada	4.5
All other international [(1)]	2.1
Total International	6.6
Consolidated total	100.0%

(1) No other single state or country accounted for 3.0% or more of the Company's consolidated direct written premiums written in 2018.

Catastrophe Exposure

The Company's property and casualty insurance operations expose it to claims arising out of catastrophes. The Company uses various analyses and methods, including proprietary and third-party computer modeling processes, to continually monitor and analyze underwriting risks of business in natural catastrophe-prone areas and target risk areas for conventional terrorist attacks (defined as attacks other than nuclear, biological, chemical or radiological events). The Company relies, in part, upon these analyses to make underwriting decisions designed to manage its exposure on catastrophe-exposed business. For example, as a result of these analyses, the Company has at various times limited the writing of new property and homeowners business in some markets and has selectively taken underwriting actions on new and existing business. These underwriting actions on new and existing business include tightening underwriting standards, selective price increases and changes to deductibles specific to hurricane-, tornado-, wind- and hail-prone areas. See "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Catastrophe Modeling" and "—Changing Climate Conditions." The Company also utilizes reinsurance to manage its aggregate exposures to catastrophes. See "—Reinsurance."

4

BUSINESS INSURANCE

Business Insurance offers a broad array of property and casualty insurance and insurance-related services to its customers, primarily in the United States, as well as in Canada, the United Kingdom, the Republic of Ireland, Brazil and throughout other parts of the world as a corporate member of Lloyd's. Business Insurance is organized as follows:

Domestic

- Select Accounts provides small businesses with property and casualty insurance products and services, including commercial multi-peril, workers' compensation, commercial automobile, general liability and commercial property.
- Middle Market provides mid-sized businesses with property and casualty insurance products and services, including workers' compensation, general liability, commercial multi-peril, commercial automobile and commercial property, as well as risk management, claims handling and other services. Middle Market generally provides these products to mid-sized businesses through Commercial Accounts, as well as to targeted industries through Construction, Technology, Public Sector Services and Oil & Gas, and additionally, provides mono-line umbrella and excess coverage insurance through Excess Casualty. Middle Market also provides insurance for goods in transit and movable objects, as well as builders' risk insurance, through Inland Marine; insurance for the marine transportation industry and related services, as well as other businesses involved in international trade, through Ocean Marine; and comprehensive breakdown for equipment, including property and business interruption, through Boiler & Machinery.
- National Accounts provides large companies with casualty insurance products and services, including workers' compensation, commercial automobile and general liability, generally utilizing loss-sensitive products, on both a bundled and unbundled basis. National Accounts also includes the Company's commercial residual market business, which primarily offers workers' compensation services to the involuntary market.
- National Property and Other provides traditional and customized commercial property insurance programs to large and mid-sized customers through National Property. National Property and Other also provides insurance coverage for the commercial transportation industry through Northland Transportation, general liability and commercial property policies for small, difficult to place specialty classes of commercial business primarily on an excess and surplus lines basis through Northfield, and tailored property and casualty insurance programs on an admitted basis for customers with common risk characteristics or coverage requirements through National Programs. National Property and Other also serves small to medium-sized agricultural businesses, including farms, ranches, wineries and related operations, through Agribusiness.

International

- International, through its operations in Canada, the United Kingdom, the Republic of Ireland and Brazil, provides property and casualty insurance and risk management services to several customer groups, including, among others, those in the technology, manufacturing and public services industry sectors. International also provides insurance for both the foreign exposures of United States organizations and the United States exposures of foreign organizations through Global Services. At its Lloyd's syndicate (Syndicate 5000), for which the Company provides 100% of the capital, International underwrites six principal businesses — international marine, retail marine, global property, construction & special risks, energy and aviation.

Business Insurance also includes Simply Business, a leading provider of small business insurance policies primarily in the United Kingdom that was acquired in August 2017, as well as Business Insurance Other, which primarily comprises the Company's asbestos and environmental liabilities, and the assumed reinsurance and certain other runoff operations.

Selected Market and Product Information

The following table sets forth Business Insurance's net written premiums by market and product line for the periods indicated. For a description of the markets and product lines referred to in the table, see "—Principal Markets and Methods of Distribution" and "—Product Lines," respectively.

(for the year ended December 31, in millions)	2018	2017	2016	% of Total 2018
By market:				
Domestic:				
Select Accounts	$2,828	$2,800	$2,729	18.9 %
Middle Market	8,214	7,756	7,379	54.9
National Accounts	1,025	1,010	1,058	6.9
National Property and Other	1,805	1,691	1,779	12.1
Total Domestic	13,872	13,257	12,945	92.8
International	1,084	1,013	955	7.2
Total Business Insurance by market	$14,956	$14,270	$13,900	100.0%
By product line:				
Domestic:				
Workers' compensation	$3,840	$3,926	$3,945	25.7 %
Commercial automobile	2,518	2,219	2,037	16.8
Commercial property	1,867	1,772	1,787	12.5
General liability	2,227	2,086	1,987	14.9
Commercial multi-peril	3,390	3,228	3,157	22.7
Other	30	26	32	0.2
Total Domestic	13,872	13,257	12,945	92.8
International	1,084	1,013	955	7.2
Total Business Insurance by product line	$14,956	$14,270	$13,900	100.0%

Principal Markets and Methods of Distribution

Business Insurance markets and distributes its products through approximately 9,800 independent agencies and brokers. Agencies and brokers are serviced by 112 field offices and supported by customer service centers where the Company performs services for agents for a fee and centralized business centers where the Company processes new and renewal business that meet certain underwriting criteria.

Business Insurance builds relationships with well-established, independent insurance agencies and brokers. In selecting new independent agencies and brokers to distribute its products, Business Insurance considers, among other attributes, each agency's or broker's financial strength, staff experience and strategic fit with the Company's operating and marketing plans. Once an agency or broker is appointed, Business Insurance carefully monitors its performance. The majority of products offered in the United States are distributed through independent agents and brokers, many of whom also sell the Company's Personal Insurance and Bond & Specialty Insurance products. Additionally, several operations may underwrite business with agents that specialize in servicing the needs of certain of the industries served by these operations. Business Insurance continues to make significant investments in enhanced technology to provide real-time interface capabilities with independent agencies and brokers.

Domestic

- Select Accounts markets and distributes its products and services to small businesses, generally with fewer than 50 employees, through a large network of independent agents and brokers. Products offered by Select Accounts are guaranteed-cost policies, including packaged products covering property and liability exposures. Each small business risk is independently evaluated via an automated underwriting platform which in turn enables agents to quote, bind and issue a substantial amount of new small business risks in an efficient manner. Risks with more complex characteristics are underwritten with the assistance of Company personnel. Select Accounts has established a strong marketing relationship with its distribution network and has provided this network with defined underwriting policies, a broad array of products and competitive prices.
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Middle Market markets and distributes its products and services primarily to mid-sized businesses with 50 to 1,000 employees through a large network of independent agents and brokers. The Company offers a full line of products to its Middle Market customers with an emphasis on guaranteed-cost programs. Each account is underwritten based on the unique risk characteristics, loss history and coverage needs of the account. The ability to underwrite at this detailed level allows Middle Market to have a broad risk appetite and a diversified customer base. Within Middle Market, products and services are tailored to certain targeted industry segments of significant size and complexity that require unique underwriting, claim, risk management or other insurance-related products and services.

- National Accounts markets and distributes its products and services to large companies through a network of national and regional brokers, primarily utilizing loss-sensitive products in connection with a large deductible or self-insured program and, to a lesser extent, a retrospectively rated or a guaranteed-cost insurance policy. National Accounts also provides casualty products and services through retail brokers on an unbundled basis, using third-party administrators for insureds who utilize programs such as collateralized deductibles, captive reinsurers and self-insurance. National Accounts provides insurance-related services, such as risk management services, claims administration, loss control and risk management information services, either in addition to, or in lieu of, pure risk coverage, and generated $242 million of fee income in 2018, excluding commercial residual market business. The commercial residual market business of National Accounts sells claims and policy management services to workers' compensation pools throughout the United States, and generated $111 million of fee income in 2018. National Accounts services approximately 37% of the total workers' compensation assigned risk market, making the Company one of the largest servicing carriers in the industry. Workers' compensation accounted for approximately 69% of sales to National Accounts customers during 2018, based on direct written premiums and fees.
- National Property and Other markets and distributes its products and services to a wide customer base, providing traditional and customized insurance programs to a broad range of customer sizes through a large network of agents and brokers. National Property and Other also markets and distributes its products through brokers, wholesale agents, program managers and specialized retail agents who operate in certain markets that are not typically served by the Company's appointed retail agents, or who maintain certain affinity arrangements in specialized market segments. The wholesale excess and surplus lines market, which is characterized by the absence of rate and form regulation, allows for more pricing and coverage flexibility to write certain classes of business. In working with agents or program managers on a brokerage basis, National Property and Other underwrites the business internally and sets the premium level. In working with agents or program managers with delegated underwriting authority, the agents produce and underwrite business subject to pricing and underwriting guidelines that have been specifically designed for each facility or program.
- International markets and distributes its products principally through brokers in each of the countries in which it operates. International also writes business at Lloyd's, where its products are distributed through Lloyd's wholesale and retail brokers. By virtue of Lloyd's worldwide licenses, Business Insurance has access to international markets across the world.

Pricing and Underwriting

Business Insurance utilizes underwriting, claims, engineering, actuarial and product development disciplines for particular industries, in conjunction with extensive amounts of proprietary data gathered and analyzed over many years, to facilitate its risk selection process and develop pricing parameters. The Company utilizes both standard industry forms and proprietary forms for the insurance policies it issues.

A portion of business in this segment, particularly in National Accounts and Construction, is written with large deductible insurance policies. Under workers' compensation insurance contracts with large deductible features, the Company is obligated to pay the claimant the full amount of the claim. The Company is subsequently reimbursed by the contractholder for the deductible amount and is subject to credit risk until such reimbursement is made. At December 31, 2018, contractholder payables on unpaid losses within the deductible layer of large deductible policies and the associated receivables were both approximately $4.78 billion. Business Insurance also utilizes retrospectively rated policies for another portion of the business, primarily for workers' compensation coverage. Although the retrospectively rated feature of the policy substantially reduces insurance risk for the Company, it introduces additional credit risk to the Company. Premiums receivable from holders of retrospectively rated policies totaled approximately $93 million at December 31, 2018. Significant collateral, primarily letters of credit and, to a lesser extent, cash collateral, trusts or surety bonds, is generally obtained for large deductible plans and/or retrospectively rated policies that provide for deferred collection of deductible recoveries and/or ultimate premiums. The amount of collateral requested is predicated upon the creditworthiness of the customer and the nature of the insured risks. Business Insurance continually monitors the credit exposure on individual accounts and the adequacy of collateral.

For additional information concerning credit risk in certain of the Company's businesses, see "Item 1A—Risk Factors—We are also exposed to credit risk in certain of our insurance operations and with respect to certain guarantee or indemnification arrangements that we have with third parties."

Product Lines

Business Insurance provides the following types of products and services:

Domestic

- Workers' Compensation. Provides coverage for employers for specified benefits payable under state or federal law for workplace injuries to employees. There are typically four types of benefits payable under workers' compensation policies:

medical benefits, disability benefits, death benefits and vocational rehabilitation benefits. The Company emphasizes managed care cost containment strategies, which involve employers, employees and care providers in a cooperative effort that focuses on the injured employee's early return to work and cost-effective quality care. The Company offers the following types of workers' compensation products:

- guaranteed-cost insurance products, where the premiums charged will not be adjusted for actual loss experience during the covered period;
- loss-sensitive insurance products, including large deductible and retrospectively rated policies, in which fees or premiums are adjusted based on actual loss experience of the insured during the policy period; and
- service programs, which are generally sold to the Company's National Accounts customers, where the Company receives fees rather than premiums for providing loss prevention, risk management, and claim and benefit administration services to organizations under service agreements.

The Company also participates in state assigned risk pools as a servicing carrier and pool participant.

- Commercial Automobile. Provides coverage for businesses against losses incurred from personal bodily injury, bodily injury to third parties, property damage to an insured's vehicle and property damage to other vehicles and other property resulting from the ownership, maintenance or use of automobiles and trucks in a business.
- Commercial Property. Provides coverage for loss of or damage to buildings, inventory and equipment from a variety of events, including, among others, hurricanes and other windstorms, tornadoes, earthquakes, hail, wildfires, severe winter weather, floods, volcanic eruptions, tsunamis, theft, vandalism, fires, explosions, terrorism and financial loss due to business interruption resulting from covered property damage. For additional information on terrorism coverages, see "Reinsurance—Catastrophe Reinsurance—Terrorism Risk Insurance Program." Commercial property also includes specialized equipment insurance, which provides coverage for loss or damage resulting from the mechanical breakdown of boilers and machinery, and ocean and inland marine insurance, which provides coverage for goods in transit and unique, one-of-a-kind exposures.
- General Liability. Provides coverages for businesses against third-party claims arising from accidents occurring on their premises or arising out of their operations, including as a result of injuries sustained from products sold. Coverages may also include directors' and officers' liability arising in their official capacities, employment practices liability insurance, fiduciary liability for trustees and sponsors of pension, health and welfare, and other employee benefit plans, errors and omissions insurance for employees, agents, professionals and others arising from acts or failures to act under specified circumstances, cyber liability, as well as umbrella and excess insurance.
- Commercial Multi-Peril. Provides a combination of the property and liability coverages described in the foregoing product line descriptions.

International

Provides coverage for employers' liability (similar to workers' compensation coverage in the United States), public and product liability (the equivalent of general liability), professional indemnity (similar to professional liability coverage), commercial property, commercial automobile, marine, aviation, onshore and offshore energy, construction, terrorism, personal accident and kidnap & ransom. Marine provides coverage for ship hulls, cargoes carried, private yachts, marine-related liability, ports and terminals, and fine art. Aviation provides coverage for worldwide aviation risks including physical damage and liabilities for airline, aerospace, general aviation, aviation war and space risks. Personal accident provides financial protection in the event of death or disablement due to accidental bodily injury, while kidnap & ransom provides financial protection against kidnap, hijack, illegal detention and extortion. While the covered hazards may be similar to those in the U.S. market, the different legal environments can make the product risks and coverage terms potentially very different from those the Company faces in the United States.

Net Retention Policy Per Risk

The following discussion reflects the Company's retention policy with respect to Business Insurance as of January 1, 2019. For third-party liability, Business Insurance generally limits its net retention, through the use of reinsurance, to a maximum of $16.0 million per insured, per occurrence. For property exposures, Business Insurance generally limits its net retention, through the use of reinsurance, to a maximum amount per risk of $20.0 million per occurrence. Business Insurance generally retains its workers'

8

compensation exposures. Reinsurance treaties often have aggregate limits or caps which may result in larger net per-risk retentions if the aggregate limits or caps are reached. Business Insurance utilizes facultative reinsurance to provide additional limits capacity or to reduce retentions on an individual risk basis. Business Insurance may also retain amounts greater than those described herein based upon the individual characteristics of the risk.

Geographic Distribution

The following table shows the geographic distribution of Business Insurance's direct written premiums for the year ended December 31, 2018:

Location	% of Total
Domestic:	
California	12.2 %
New York	9.5
Texas	6.9
Illinois	4.6
Pennsylvania	3.9
New Jersey	3.8
Florida	3.8
Massachusetts	3.1
All other domestic [(1)]	46.3
Total Domestic	94.1
International:	
Canada	3.1
All other international [(1)]	2.8
Total International	5.9
Total Business Insurance	100.0 %

(1) No other single state or country accounted for 3.0% or more of Business Insurance's direct written premiums in 2018.

Competition

The insurance industry is represented in the commercial marketplace by many insurance companies of varying size as well as other entities offering risk alternatives, such as self-insured retentions or captive programs. Market competition works within the insurance regulatory framework to set the price charged for insurance products and the levels of coverage and service provided. A company's success in the competitive commercial insurance landscape is largely measured by its ability to profitably provide insurance and services, including claims handling and risk control, at prices and terms that retain existing customers and attract new customers. See "Item 1A—Risk Factors—The intense competition that we face, and the impact of innovation, technological change and changing customer preferences on the insurance industry and the markets in which we operate, could harm our ability to maintain or increase our business volumes and our profitability."

Domestic

Competitors typically write Select Accounts business through independent agents and, to a lesser extent, regional brokers, and as direct writers. Both national (including international companies doing business in the U.S.) and regional property and casualty insurance companies compete in the Select Accounts market which generally comprises lower-hazard, "Main Street" business customers. Risks are underwritten and priced using standard industry practices and a combination of proprietary and standard industry product offerings. Competition in this market is primarily based on breadth of product offerings, service levels, ease of doing business and price.

Competitors typically write Middle Market business through independent agents and brokers. Several of Middle Market's operations require unique combinations of industry knowledge, customized coverage, specialized risk control and loss handling services, along with partnerships with agents and brokers that also focus on these markets. Competitors in this market are primarily national property and casualty insurance companies (including international companies doing business in the U.S.) that write most

classes of business using traditional products and pricing, and regional insurance companies. Companies compete based on product offerings, service levels, price and claim and loss prevention services. Efficiency through automation and response time to agent, broker and customer needs is one key to success in this market.

In the National Accounts market, competition is based on price, product offerings, claim and loss prevention services, managed care cost containment, risk management information systems and collateral requirements. National Accounts primarily competes with national property and casualty insurance companies (including international companies doing business in the U.S.), as well as with other underwriters of property and casualty insurance in the alternative risk transfer market, such as self-insurance plans, captives managed by others, and a variety of other risk-financing vehicles and mechanisms. The residual market division competes for state contracts to provide claims and policy management services.

National Property and Other competes in focused target markets. Each of these markets is different and requires unique combinations of industry knowledge, customized coverage, specialized risk control and loss handling services, along with partnerships with agents and brokers that also focus on these markets. Some of these businesses compete with national carriers (including international companies doing business in the U.S.) with similarly dedicated underwriting and marketing groups, whereas others compete with smaller regional companies. Specialized agents and brokers, including wholesale agents and program managers, supplement this focused target market approach. National Property and Other's competitive strategy typically is based on the application of focused industry knowledge to insurance and risk needs.

International

International competes with numerous international and domestic insurers in Canada, the United Kingdom, the Republic of Ireland and Brazil. Companies compete on the basis of price, product offerings, distribution partnerships and the level of claim and risk management services provided. The Company has developed expertise in various markets in these countries similar to those served in the United States and provides both property and casualty coverage for these markets.

At Lloyd's, International competes with other syndicates operating in the Lloyd's market as well as international and domestic insurers in the various markets where the Lloyd's operation writes business worldwide. Competition is based on price, product and service. The Company focuses on lines it believes it can underwrite profitably with an emphasis on short-tail insurance lines.

BOND & SPECIALTY INSURANCE

Bond & Specialty Insurance provides surety, fidelity, management liability, professional liability, and other property and casualty coverages and related risk management services to its customers in the United States and certain specialty insurance products in Canada, the United Kingdom, the Republic of Ireland and Brazil, utilizing various degrees of financially based underwriting approaches. The range of coverages includes performance, payment and commercial surety bonds for construction and general commercial enterprises; fidelity insurance for private companies, not-for-profit organizations and financial institutions; management liability coverages including directors' and officers' liability, employment practices liability, fiduciary liability and cyber risk for public corporations, private companies, not-for-profit organizations and financial institutions; professional liability coverage for a variety of professionals including, among others, lawyers and design professionals; and in the United States only, property, workers' compensation, auto and general liability for financial institutions.

Bond & Specialty Insurance surety business in Brazil and Colombia is conducted through Junto Holding Brasil S.A. (Junto) and Junto Holding Latam S.A. in Brazil. The Company owns 49.5% of both Junto, a market leader in surety coverages in Brazil, and Junto Holding Latam S.A., which owns a majority interest in JMalucelli Travelers Seguros S.A., a Colombian start-up surety provider. These joint venture investments are accounted for using the equity method

and are included in “other investments” on the consolidated balance sheet.

Selected Product Information

The following table sets forth Bond & Specialty Insurance’s net written premiums by product line for the periods indicated. For a description of the product lines referred to in the table, see “—Product Lines.” In addition, see “—Principal Markets and Methods of Distribution” for a discussion of distribution channels for Bond & Specialty Insurance’s product lines.

(for the year ended December 31, in millions)	2018	2017	2016	% of Total 2018
Domestic:				
Fidelity and surety	$1,049	$993	$961	41.5 %
General liability	1,037	977	954	41.0
Other	204	190	184	8.1
Total Domestic	2,290	2,160	2,099	90.6
International	238	199	172	9.4
Total Bond & Specialty Insurance	$2,528	$2,359	$2,271	100.0%

Principal Markets and Methods of Distribution

Bond & Specialty Insurance markets and distributes the vast majority of its products in the United States through approximately 5,400 of the same independent agencies and brokers that distribute Business Insurance's products in the United States. Bond & Specialty Insurance builds relationships with well-established, independent insurance agencies and brokers. In selecting new independent agencies and brokers to distribute its products, Bond & Specialty Insurance considers, among other attributes, each agency's or broker's profitability, financial stability, staff experience and strategic fit with its operating and marketing plans. Once an agency or broker is appointed, its ongoing performance is closely monitored. Bond & Specialty Insurance, in conjunction with Business Insurance, continues to make investments in enhanced technology to provide real-time interface capabilities with its independent agencies and brokers.

Pricing and Underwriting

Bond & Specialty Insurance utilizes underwriting, claims, engineering, actuarial and product development disciplines for specific accounts and industries, in conjunction with extensive amounts of proprietary data gathered and analyzed over many years, to facilitate its risk selection process and develop pricing parameters. The Company utilizes both standard industry forms and proprietary forms for the insurance policies it issues.

Product Lines

Bond & Specialty Insurance writes the following types of coverages:

Domestic

- Fidelity and Surety. Provides fidelity insurance coverage, which protects an insured for loss due to embezzlement or misappropriation of funds by an employee, and surety, which is a three-party agreement whereby the insurer agrees to pay a third party or complete an obligation in response to the default, acts or omissions of an insured. Surety is generally provided for construction performance, legal matters such as appeals, trustees in bankruptcy and probate and other performance bonds.

- General Liability. Provides coverage for specialized liability exposures as described above in more detail in the "Business Insurance" section of this report.

- Other. Coverages include Property, Workers' Compensation, Commercial Automobile and Commercial Multi-Peril, which are described above in more detail in the "Business Insurance" section of this report.

International

- Fidelity and Surety and certain General Liability products, as well as cyber risk coverages, are provided internationally to various customer groups.

Net Retention Policy Per Risk

The following discussion reflects the Company's retention policy with respect to Bond & Specialty Insurance as of January 1, 2019. For third party liability, including but not limited to directors' and officers' liability, professional

liability, employment practices liability, fidelity liability, fiduciary liability and cyber risk liability, Bond & Specialty Insurance generally limits net retentions to $25.0 million per policy. For surety, where limits are often significant, Bond & Specialty Insurance generally retains

up to $122.5 million probable maximum loss (PML) per principal, after reinsurance, but may retain higher amounts based on the type of obligation, credit quality and other credit risk factors. Reinsurance treaties often have aggregate limits or caps which may result in larger net per risk retentions if the aggregate limits or caps are reached. Bond & Specialty Insurance utilizes facultative reinsurance to provide additional limits capacity or to reduce retentions on an individual risk basis. Bond & Specialty Insurance may also retain amounts greater than those described herein based upon the individual characteristics of the risk.

Geographic Distribution

The following table shows the geographic distribution of Bond & Specialty Insurance's direct written premiums for the year ended December 31, 2018:

Location	% of Total
Domestic:	
California	9.8 %
Texas	6.5
New York	6.2
Florida	5.4
Illinois	3.8
Pennsylvania	3.6
All other domestic [1]	54.8
Total Domestic	90.1
International:	
United Kingdom	4.7
Canada	4.3
All other international [1]	0.9
Total International	9.9
Total Bond & Specialty Insurance	100.0%

(1) No other single state or country accounted for 3.0% or more of Bond & Specialty Insurance's direct written premiums in 2018.

Competition

The competitive landscape in which Bond & Specialty Insurance operates is affected by many of the same factors described previously for Business Insurance. Competitors in this market are primarily national property and casualty insurance companies (including international companies doing business in the U.S.) that write most classes of business and, to a lesser extent, regional insurance companies and companies that have developed niche programs for specific industry segments.

Domestic

Bond & Specialty Insurance underwrites and markets its products to all sizes of businesses and other organizations, as well as individuals. The Company believes that its reputation for timely and consistent decision making, a nationwide network of local underwriting, claims and industry experts and strong producer and customer relationships, as well as its ability to offer its customers a full range of products, provides Bond & Specialty Insurance an advantage over many of its competitors and enables it to compete effectively in a complex, dynamic marketplace. The Company believes that the ability of Bond & Specialty Insurance to cross-sell its products to customers of Business Insurance and Personal Insurance provides additional competitive advantages for the Company. See "Item 1A—Risk Factors—The intense competition that we face, and the impact of innovation, technological change and changing customer preferences on the insurance industry and the markets in which we operate, could harm our ability to maintain or increase our business volumes and our profitability."

12

International

International competes with numerous international and domestic insurers in Canada, the United Kingdom, the Republic of Ireland, Brazil and Colombia. Companies compete on the basis of price, product offerings and the level of claim and risk management services provided. The Company has developed expertise in various markets in these countries similar to those served in the United States and provides certain specialty coverages for these markets.

PERSONAL INSURANCE

Personal Insurance writes a broad range of property and casualty insurance covering individuals' personal risks, primarily in the United States, as well as in Canada. The primary products of automobile and homeowners insurance are complemented by a broad suite of related coverages.

Selected Product and Distribution Channel Information

The following table sets forth net written premiums for Personal Insurance's business by product line for the periods indicated. For a description of the product lines referred to in the following table, see "—Product Lines." In addition, see "—Principal Markets and Methods of Distribution" for a discussion of distribution channels for Personal Insurance's product lines.

(for the year ended December 31, in millions)	2018	2017	2016	% of Total 2018
Domestic:				
Agency:				
Automobile	$4,972	$4,646	$4,103	48.6 %
Homeowners and Other	4,148	3,933	3,772	40.6
Total Agency	9,120	8,579	7,875	89.2
Direct-to-Consumer	396	361	309	3.9
Total Domestic	9,516	8,940	8,184	93.1
International	708	650	603	6.9
Total Personal Insurance	$10,224	$9,590	$8,787	100.0%

Principal Markets and Methods of Distribution

Domestic

Personal Insurance products are marketed and distributed primarily through approximately 10,200 active independent agencies located throughout the United States, supported by personnel in eight sales regions. In addition, sales and service are provided to customers through five contact centers. While the principal markets for Personal Insurance products continue to be in states along the East Coast, California and Texas, the business continues to expand its geographic presence across the United States.

In selecting new independent agencies to distribute its products, Personal Insurance considers, among other attributes, each agency's profitability, financial stability, staff experience and strategic fit with its operating and marketing plans. Once an agency is appointed, Personal Insurance carefully monitors its performance.

Agents can access the Company's agency service portal for a number of resources including customer service, marketing and claims management. In addition, agencies can choose to shift the ongoing service responsibility for Personal Insurance's customers to one of the Company's Customer Care Centers, where the Company provides, on behalf of an agency, a comprehensive array of customer service needs, including response to billing and coverage inquiries, and policy changes. Approximately 1,650 agents take advantage of this service alternative, for which they generally pay a fee.

Personal Insurance also markets and distributes its products through additional channels, including corporations that make the Company's product offerings available to their employees primarily through payroll deductions, consumer associations and affinity groups. Personal Insurance handles the sales and service for these programs either through a

sponsoring independent agent or through the Company's contact center locations. In addition, since 1995, the Company has had a marketing agreement with GEICO to underwrite homeowners business for certain of their auto customers.

The Company also markets its insurance products directly to consumers, largely through online channels. The Company's direct-to-consumer business continues to grow but still represents modest premium volume for Personal Insurance.

International
International markets and distributes its products principally through approximately 630 brokers located throughout Canada.
Pricing and Underwriting
Personal Insurance has developed a product management methodology that integrates the disciplines of underwriting, claims, actuarial and product development. This approach is designed to maintain high-quality underwriting discipline and pricing segmentation. Proprietary and third-party data accumulated over many years is analyzed and Personal Insurance uses a variety of risk differentiation models to facilitate its pricing segmentation and underwriting. The Company's product management area establishes underwriting guidelines integrated with its filed pricing and rating plans, which enable Personal Insurance to effectively execute its risk selection and pricing processes.

Domestic
Pricing for personal automobile insurance is driven in large part by changes in the frequency of claims and changes in severity, including inflation in the cost of automobile repairs, medical care and resolution of liability claims. Pricing in the homeowners business is driven in large part by changes in the frequency of claims and changes in severity, including inflation in the cost of building supplies, labor and household possessions. In addition to the normal risks associated with any multiple peril coverage, the profitability and pricing of both homeowners and automobile insurance are affected by the incidence of catastrophes and other weather-related events. Insurers writing personal lines property and casualty policies may be unable to increase prices until some time after the costs associated with coverage have increased, primarily because of state insurance rate regulation. The pace at which an insurer can change rates in response to increased costs depends, in part, on whether the applicable state law requires prior approval of rate increases or notification to the regulator either before or after a rate change is imposed. In states with prior approval laws, rates must be approved by the regulator before being used by the insurer. In states having "file-and-use" laws, the insurer must file rate changes with the regulator, but does not need to wait for approval before using the new rates. A "use-and-file" law requires an insurer to file rates within a period of time after the insurer begins using the new rate. Approximately one-half of the states require prior approval of most rate changes. In addition, changes to methods of marketing and underwriting in some jurisdictions are subject to state-imposed restrictions, which can make it more difficult for an insurer to significantly manage catastrophe exposures.

The Company's ability or willingness to raise prices, modify underwriting terms or reduce exposure to certain geographies may be limited due to considerations of public policy, the competitive environment, the evolving political environment and/or changes in the general economic climate. The Company also may choose to write business it might not otherwise write in some states for strategic purposes, such as improving access to other commercial or personal underwriting opportunities. In choosing to write business in some states, the Company also considers the costs and benefits of those states' residual markets and guaranty funds, as well as other property and casualty business the Company writes in those states.

International
Pricing and underwriting for personal automobile and homeowners insurance in Canada is driven in large part by the same factors as in the United States. For personal automobile insurance, all provinces in Canada require prior approval before rates are implemented.

Product Lines
Domestic

The primary coverages in Personal Insurance are personal automobile and homeowners and other insurance sold to individuals. Personal Insurance had approximately 7.5 million active policies (i.e., policies-in-force) in the United States at December 31, 2018.

Personal Insurance writes the following types of coverages:

- Personal Automobile provides coverage for liability to others for both bodily injury and property damage, uninsured motorist protection, and for physical damage to an insured's own vehicle from collision, fire, flood, hail and theft. In addition, many states require policies to provide first-party personal injury protection, frequently referred to as no-fault coverage.

- Homeowners and Other provides protection against losses to residences and contents from a variety of perils (excluding flooding) as well as coverage for personal liability. The Company writes homeowners insurance for dwellings, condominiums and tenants, and rental properties. The Company also writes coverage for boats and yachts and valuable personal items such as jewelry, and also writes coverages for umbrella liability, identity fraud, and weddings and special events.

International

- International provides automobile and homeowners and other coverages in Canada (similar to coverages in the United States). Personal Insurance had approximately 574,000 active policies in Canada at December 31, 2018.

Net Retention Policy Per Risk

The following discussion reflects the Company's retention policy with respect to Personal Insurance as of January 1, 2019. Personal Insurance generally retains its primary personal auto exposures in their entirety. For personal property insurance, there is an $8.0 million maximum retention per risk, net of reinsurance. Personal Insurance uses facultative reinsurance to provide additional limits capacity or to reduce retentions on an individual risk basis. Personal Insurance issues umbrella policies up to a maximum limit of $10.0 million per risk. Personal Insurance may also retain amounts greater than those described herein based upon the individual characteristics of the risk.

Geographic Distribution

The following table shows the geographic distribution of Personal Insurance's direct written premiums for the year ended December 31, 2018:

Location	% of Total
Domestic:	
New York	10.6 %
Texas [1]	9.7
California	6.1
Pennsylvania	5.7
Georgia	5.1
Florida	4.6
New Jersey	4.4
Virginia	3.5
Connecticut	3.2
Colorado	3.1
South Carolina	3.1
All other domestic [2]	34.1
Total Domestic	93.2
International:	
Canada	6.8
Total International	6.8
Total Personal Insurance	100.0%

(1) The percentage for Texas includes business written by the Company through a fronting agreement with another insurer.

(2) No other single state accounted for 3.0% or more of Personal Insurance's direct written premiums in 2018.

Competition

Domestic

Although national companies (including international companies doing business in the U.S.) write the majority of this business, Personal Insurance also faces competition from many regional and hundreds of local companies. Personal Insurance primarily competes based on breadth of product offerings, price, service (including claims handling), ease and speed of doing business, stability of the insurer and name recognition. Personal Insurance competes for business within each independent agency since these agencies also offer policies of competing companies. At the agency level, competition is primarily based on price, service (including claims handling), the level of automation and the development of long-term relationships with individual agents. Most independent personal insurance agents utilize price comparison rating technology, sometimes referred to as “comparative raters,” as a cost-efficient means of obtaining quotes from multiple companies. Because the use of this technology facilitates the process of generating multiple quotes, the technology has increased price comparison on new business and, increasingly, on renewal business. Personal Insurance also competes with insurance companies that use exclusive agents or salaried employees to sell their products, as well as those that employ direct marketing strategies.

International

Personal Insurance competes with numerous international and domestic insurers in Canada. Companies compete on the basis of price, breadth of product offerings and the level of claim and risk management services provided. The Company has developed expertise in various markets in Canada similar to those served in the United States and provides both automobile and homeowners and other coverages for this market.

See “Item 1A—Risk Factors—The intense competition that we face, and the impact of innovation, technological change and changing customer preferences on the insurance industry and the markets in which we operate, could harm our ability to maintain or increase our business volumes and our profitability.”

CLAIMS MANAGEMENT

The Company’s claim functions are managed through its Claims Services organization, with locations in the United States and in the other countries where it does business. With more than 12,000 employees, Claims Services employs a group of professionals with diverse skills, including claim adjusters, appraisers, attorneys, investigators, engineers, accountants, nurses, data and analytics professionals, system specialists and training, management and support personnel. Approved external service providers, such as investigators, attorneys and, when necessary, independent adjusters and appraisers, are available for use as appropriate.

United States field claim management teams located in 16 claim centers and 55 satellite and specialty-only offices in 44 states are organized to maintain focus on the specific claim characteristics unique to the businesses within the Company’s business segments. Claim teams with specialized skills, required licenses, resources and workflows are matched to the unique exposures of those businesses, with local claims management dedicated to achieving optimal results within each segment, including acting as a third party administrator for large customers who self-insure and retain the Company to handle their claims process on a fee-for-service basis. The Company’s home office operations provide additional support in the form of workflow design, quality management, information technology, advanced management information and data analysis, training, financial reporting and control, and human resources strategy. This structure permits the Company to maintain the economies of scale of a large, established company while retaining the agility to respond promptly to the needs of customers, brokers, agents and underwriters. Claims management for International, while generally provided locally by staff in the respective international locations due to local knowledge of applicable laws and regulations, is also managed by the Company’s Claims Services organization in the United States to leverage that knowledge base and to share best practices.

An integral part of the Company’s strategy to benefit customers and shareholders is its continuing industry leadership in the fight against insurance fraud through its Investigative Services unit. The Company has a nationwide staff of

experts who investigate a wide array of insurance fraud schemes using in-house forensic resources and other technological tools. This staff also has specialized expertise in fire scene examinations, medical provider fraud schemes and data mining. The Company also dedicates investigative resources to ensure that violations of law are reported to and prosecuted by law enforcement agencies.

Claims Services uses technology, management information and data analysis to assist the Company in reviewing its claim practices and results in order to evaluate and improve its claims management performance. The Company's claims-management strategy is focused on segmentation of claims and appropriate technical specialization to drive effective claim resolution. The Company continually monitors its investment in claim resources to maintain an effective focus on claim outcomes and a disciplined approach to continual improvement. The Company operates a state-of-the-art claims-training facility which offers hands-on experiential

learning to help ensure that its claim professionals are properly trained. In recent years, the Company has invested significant additional resources in many of its claim-handling operations, including the utilization of drone technology, and routinely monitors the effect of those investments to ensure a consistent optimization among outcomes, cost and service.

Claims Services' catastrophe response strategy is to respond to a significant catastrophic event using its own personnel, enabling it to minimize reliance on independent adjusters and appraisers. The Company has developed a large dedicated catastrophe response team and trained a large Enterprise Response Team of existing employees who can be deployed on short notice in the event of a catastrophe that generates claim volume exceeding the capacity of the dedicated catastrophe response team. In recent years, these internal resources were successfully deployed to respond to a significant level of catastrophe claims.

REINSURANCE

The Company reinsures a portion of the risks it underwrites in order to manage its exposure to losses and to protect its capital. The Company cedes to reinsurers a portion of these risks and pays premiums based upon the risk and exposure of the policies subject to such reinsurance. The Company utilizes a variety of reinsurance agreements to manage its exposure to large property and casualty losses, including catastrophe, treaty, facultative and quota share reinsurance. Ceded reinsurance involves credit risk, except with regard to mandatory pools and associations, and is predominantly subject to aggregate loss limits. Although the reinsurer is liable to the Company to the extent of the reinsurance ceded, the Company remains liable as the direct insurer on all risks reinsured. Reinsurance recoverables are reported after reductions for known insolvencies and after allowances for uncollectible amounts. The Company also holds collateral, including trust agreements, escrow funds and letters of credit, under certain reinsurance agreements. The Company monitors the financial condition of reinsurers on an ongoing basis and reviews its reinsurance arrangements periodically. Reinsurers are selected based on their financial condition, business practices, the price of their product offerings and the value of collateral provided. After reinsurance is purchased, the Company has limited ability to manage the credit risk to a reinsurer. In addition, in a number of jurisdictions, particularly the European Union and the United Kingdom and a small number of U.S. states, a reinsurer is permitted to transfer a reinsurance arrangement to another reinsurer, which may be less creditworthy, without a counterparty's consent, provided that the transfer has been approved by the applicable regulatory and/or court authority.

For additional information regarding reinsurance, see note 5 of notes to the consolidated financial statements and "Item 1A—Risk Factors." For a description of reinsurance-related litigation, see note 16 of notes to the consolidated financial statements.

Catastrophe Reinsurance

Catastrophes can be caused by a variety of events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, wildfires, severe winter weather, floods, tsunamis, volcanic eruptions and other naturally-occurring events, such as solar flares. Catastrophes can also result from terrorist attacks and other intentionally destructive acts including those involving nuclear, biological, chemical and radiological events, cyber events, explosions and destruction of infrastructure. The incidence and severity of catastrophes are inherently unpredictable. The extent of losses from a catastrophe is a function of both the total amount of insured exposure affected by the event and the severity of the event. Most catastrophes are restricted to small geographic areas; however, hurricanes, earthquakes and wildfires may produce significant damage in larger areas, especially those areas that are heavily populated. The Company generally seeks to manage its exposure to catastrophes through individual risk selection and the purchase of catastrophe reinsurance. In addition to the Company's catastrophe reinsurance coverages, the Company is also party to other reinsurance treaties that can provide additional coverage for losses arising from catastrophes, as described in the "Net Retention Policy Per Risk" sections of the respective segment discussions above. The Company conducts an ongoing review of its risk and catastrophe coverages and from time to time makes changes as it deems appropriate. The following discussion summarizes the Company's catastrophe

reinsurance coverage at January 1, 2019.

Corporate Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty covers the accumulation of certain property losses arising from one or multiple occurrences for the period January 1, 2019 through and including December 31, 2019. The treaty provides for recovery of 75% of the dollar amount of each qualifying loss in excess of a $3.0 billion retention, up to a maximum amount of qualifying losses of $2.0 billion (i.e. for every dollar of loss between $3.0 billion and $5.0 billion this treaty provides for 75 cents of coverage). Therefore, the maximum recovery under the treaty would be $1.5 billion. Qualifying losses for each occurrence are after a $100 million deductible. The treaty covers all of the Company's exposures in the United States and Canada and their territories and possessions, the Caribbean Islands, Mexico and all waters contiguous thereto. The treaty only provides coverage for terrorism events in limited circumstances and excludes entirely losses arising from nuclear, biological, chemical or radiological attacks.

Underlying Property Aggregate Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty covers the accumulation of certain property losses arising from one or multiple occurrences for the period January 1, 2019 through and including December 31, 2019.

The treaty provides for up to $430 million part of $500 million of coverage, subject to a $1.3 billion retention (i.e. for every dollar of loss between $1.3 billion and $1.8 billion this treaty provides for 86 cents of coverage), of aggregate qualifying losses. Qualifying losses are subject to a $5 million franchise deductible per occurrence, so that qualifying catastrophic events at or greater than $5 million count toward the aggregate retention from dollar one. Coverage for, and contributions to the $1.3 billion retention from, hurricanes and/or tropical storms and earthquakes are limited to $250 million per event. The treaty covers property perils for PCS events in the United States and Canada and their territories and possessions, the Caribbean Islands, Mexico and all waters contiguous thereto. The treaty excludes losses arising from cyber and terrorism, including nuclear, biological, chemical or radiological.

Catastrophe Bonds. The Company has catastrophe protection through an indemnity reinsurance agreement with Long Point Re III Ltd. (Long Point Re III), an independent Cayman Islands company licensed as a Class C insurer in the Cayman Islands. The reinsurance agreement meets the requirements to be accounted for as reinsurance in accordance with the guidance for reinsurance contracts. In connection with the reinsurance agreement, Long Point Re III issued notes (generally referred to as “catastrophe bonds”) to investors in amounts equal to the full coverage provided under the reinsurance agreement as described below. The proceeds were deposited in a reinsurance trust account. The businesses covered by this reinsurance agreement are subsets of the Company’s overall insurance portfolio, comprising specified property coverages spread across the following geographic locations: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia and Vermont.

The reinsurance agreement was entered into in May 2018 and provides coverage of up to $500 million to the Company through May 24, 2022 for certain losses from tropical cyclones, earthquakes, severe thunderstorms or winter storms in the locations listed above. The attachment point and maximum limit under this agreement are reset annually to adjust the expected loss of the layer within a predetermined range. Until and including May 24, 2019, the Company is entitled to begin recovering amounts under this reinsurance agreement if the covered losses in the covered area for a single occurrence reach an initial attachment amount of $1.9 billion. The full $500 million coverage amount is available until such covered losses reach a maximum $2.4 billion. The coverage under the reinsurance agreement is limited to specified property coverage written in Personal Insurance; Select Accounts, Middle Market (excluding Excess Casualty and Boiler & Machinery) and National Property and Other in Business Insurance; and Bond & Specialty Insurance Other in Bond & Specialty Insurance.

Under the terms of the reinsurance agreement, the Company is obligated to pay annual reinsurance premiums to Long Point Re III for the reinsurance coverage. Amounts payable to the Company under the reinsurance agreement with respect to any covered event cannot exceed the Company's actual losses from such event. The principal amount of the catastrophe bonds will be reduced by any amounts paid to the Company under the reinsurance agreement.

As with any reinsurance agreement, there is credit risk associated with collecting amounts due from reinsurers. With regard to Long Point Re III, the credit risk is mitigated by a reinsurance trust account that has been funded by Long Point Re III with money market funds that invest solely in direct government obligations and obligations backed by the U.S. government with maturities of no more than 13 months. The money market funds must have a principal stability rating of at least AAAm by Standard & Poor’s or AAAmmf by Fitch Ratings on the issuance date of the bonds and thereafter must be rated by Standard & Poor’s or Fitch Ratings, as applicable. Other permissible investments include money market funds which invest in repurchase and reverse repurchase agreements collateralized by direct government obligations and obligations of any agency backed by the U.S. government with terms of no more than 397 calendar days, and cash.

At the time the agreement was entered into with Long Point Re III, the Company evaluated the applicability of the accounting guidance that addresses variable interest entities or VIEs. Under this guidance, an entity that is formed for business purposes is considered a VIE if: (a) the equity investors lack the direct or indirect ability through voting

rights or similar rights to make decisions about an entity's activities that have a significant effect on the entity's operations or (b) the equity investors do not provide sufficient financial resources for the entity to support its activities. Additionally, a company that absorbs a majority of the expected losses from a VIE's activities or is entitled to receive a majority of the entity's expected residual returns, or both, is considered to be the primary beneficiary of the VIE and is required to consolidate the VIE in the company's financial statements.

As a result of the evaluation of the reinsurance agreement with Long Point Re III, the Company concluded that it was a VIE because the conditions described in items (a) and (b) above were present. However, while Long Point Re III was determined to be a VIE, the Company concluded that it did not have a variable interest in the entity, as the variability in its results, caused by the reinsurance agreement, is expected to be absorbed entirely by the investors in the catastrophe bonds issued by Long Point Re III and residual amounts earned by it, if any, are expected to be absorbed by the equity investors (the Company has neither an equity nor a residual interest in Long Point Re III).

Accordingly, the Company is not the primary beneficiary of Long Point Re III and does not consolidate that entity in the Company's consolidated financial statements. Additionally, because the Company has no intention to pursue any transaction that would result

in it acquiring interest in and becoming the primary beneficiary of Long Point Re III, the consolidation of that entity in the Company's consolidated financial statements in future periods is unlikely.

The Company has not incurred any losses that have resulted or are expected to result in a recovery under the Long Point Re III agreement since its inception.

Northeast Property Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty provides up to $600 million part of $850 million of coverage, subject to a $2.25 billion retention (i.e. for every dollar of loss between $2.25 billion and $3.10 billion this treaty provides 71 cents of coverage), for losses arising from a single occurrence, subject to one reinstatement. Coverage is provided on an all perils basis, including but not limited to hurricanes, tornadoes, hail storms, earthquakes and winter storm and/or freeze losses (coverage is included for terrorism events in limited circumstances, but nuclear, biological and radiological attacks are entirely excluded) from Virginia to Maine for the period July 1, 2018 through and including June 30, 2019. Losses from a covered event anywhere in the United States, Canada, the Caribbean and Mexico and waters contiguous thereto may be used to satisfy the retention. Recoveries under the catastrophe bonds (if any) would be first applied to reduce losses subject to this treaty.

Middle Market Earthquake Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty provides for up to $184.5 million part of $205 million of coverage, subject to a $95 million retention (i.e. for every dollar of loss between $95 million and $300 million this treaty provides 90 cents of coverage), for losses arising from an earthquake, including fire following and sprinkler leakage incurred under policies written by Technology, Public Sector Services and Commercial Accounts in Business Insurance for the period July 1, 2018 through and including June 30, 2019.

Personal Insurance Earthquake Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty provides for up to $200 million of coverage, subject to a $150 million retention, for losses arising from an earthquake, including fire following and sprinkler leakage incurred under policies written by Personal Insurance for the period January 1, 2019 through and including December 31, 2019.

Canadian Property Catastrophe Excess-of-Loss Reinsurance Treaty. This treaty, effective for the period July 1, 2018 through and including June 30, 2019, covers the accumulation of net property losses arising out of one occurrence on business written by the Company's Canadian businesses. The treaty covers all property written by the Company's Canadian businesses, including, but not limited to, habitational property, commercial property, inland marine, ocean marine and auto physical damages exposures. The treaty provides coverage for 50% of losses in excess of C$100 million (US$73 million at December 31, 2018), up to C$200 million (US$147 million at December 31, 2018) and for 100% of losses in excess of C$200 million (US$147 million at December 31, 2018), up to C$600 million (US$440 million at December 31, 2018).

Other International Reinsurance Treaties. For other business underwritten in Canada, as well as for business written in the United Kingdom, the Republic of Ireland, Brazil and in the Company's operations at Lloyd's, separate reinsurance protections are purchased locally that have lower net retentions more commensurate with the size of the respective local balance sheet.

Terrorism Risk Insurance Program. The Terrorism Risk Insurance Program is a Federal program administered by the Department of the Treasury authorized through December 31, 2020 that provides for a system of shared public and private compensation for certain insured losses resulting from certified acts of terrorism. For a further description of the program, including the Company's estimated deductible under the program in 2019, see note 5 of notes to the consolidated financial statements and "Item 1A—Risk Factors—Catastrophe losses could materially and adversely affect our results of operations, our financial position and/or liquidity, and could adversely impact our ratings, our ability to raise capital and the availability and cost of reinsurance."

CLAIMS AND CLAIM ADJUSTMENT EXPENSE RESERVES

Claims and claim adjustment expense reserves represent management's estimate of ultimate unpaid costs of losses and loss adjustment expenses for claims that have been reported and claims that have been incurred but not yet reported.

The Company continually refines its reserve estimates as part of a regular ongoing process that includes reviews of key assumptions, underlying variables and historical loss experience. The Company reflects adjustments to reserves in the results of operations in the periods in which the estimates are changed. In establishing reserves, the Company takes into account estimated recoveries for reinsurance, salvage and subrogation. The reserves are reviewed regularly by qualified actuaries employed by the Company. For additional information on the process of estimating reserves and a discussion of underlying variables and risk factors, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates."

The process of estimating loss reserves involves a high degree of judgment and is subject to a number of variables. These variables (discussed by product line in the "Critical Accounting Estimates" section of "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations") are affected by both internal and external events, such as changes in claims

handling procedures, inflation, judicial trends and the legislative landscape, among others. The impact of many of these items on ultimate costs for claims and claim adjustment expenses is difficult to estimate. Reserve estimation difficulties also differ significantly by product line due to differences in the underlying insurance contract (e.g., claims-made versus occurrence), claim complexity, the volume of claims, the potential severity of individual claims, the determination of the occurrence date for a claim, and reporting lags (the time between the occurrence of the insured event and when it is actually reported to the insurer). Informed judgment is applied throughout the process.

The Company derives estimates for unreported claims and development with respect to reported claims principally from actuarial analyses of historical patterns of loss development by accident year for each business unit, product line and type of exposure. Similarly, the Company derives estimates of unpaid loss adjustment expenses principally from actuarial analyses of historical development patterns and the relationship of loss adjustment expenses to losses for each product line and type of exposure. For a description of the Company's reserving methods for asbestos and environmental claims, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Asbestos Claims and Litigation," and "—Environmental Claims and Litigation."

Certain of the Company's claims and claim adjustment expense reserves are discounted to present value. See note 7 of notes to the consolidated financial statements for further discussion.

Reserves on Statutory Accounting Basis

At December 31, 2018, 2017 and 2016, claims and claim adjustment expense reserves (net of reinsurance) prepared in accordance with U.S. generally accepted accounting principles (GAAP reserves) were $62 million higher, $56 million higher and $44 million higher, respectively, than those reported in the Company's respective annual reports filed with insurance regulators, which are prepared in accordance with statutory accounting practices (statutory reserves).

The differences between GAAP and statutory reporting for reserves are primarily due to the differences in GAAP and statutory accounting for two items: (1) fee reimbursements associated with large deductible business and (2) the accounting for reinsurance. For large deductible business, the Company pays the deductible portion of a casualty insurance claim and then seeks reimbursement from the insured, plus a fee. The associated reserves for claim adjustment expenses are reported gross of the expected fee income (i.e., the reserves are not net of the expected fees) for GAAP reporting. For statutory reporting, the associated reserves are reported net of the expected fee income.

Reserves for claims and claim adjustment expenses are reported gross of reinsurance recoverables (i.e., without reduction for amounts recoverable for reinsurance) for GAAP reporting. For statutory reporting, the reserves are reported net of reinsurance recoverables. Reinsurance balances resulting from reinsurance placed to cover losses on insured events occurring prior to the inception of a reinsurance contract (retroactive reinsurance) are included in reinsurance recoverables for GAAP reporting. Statutory accounting practices require retroactive reinsurance balances to be recorded in other liabilities as contra-liabilities rather than in loss reserves.

Asbestos and Environmental Claims

Asbestos and environmental claims are segregated from other claims and are handled separately within the Company's Strategic Resolution Group, a separate unit staffed by dedicated legal, claim, finance and engineering professionals which also has responsibility for enterprise-wide major case activity. For additional information on asbestos and environmental claims, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Asbestos Claims and Litigation" and "—Environmental Claims and Litigation."

INTERCOMPANY REINSURANCE POOLING ARRANGEMENTS

Most of the Company's domestic insurance subsidiaries are members of an intercompany property and casualty reinsurance pooling arrangement. Pooling arrangements permit the participating companies to rely on the capacity of the entire pool's statutory capital and surplus rather than just on its own statutory capital and surplus. Under such arrangements, the members share substantially all insurance business that is written and allocate the combined premiums, losses and expenses.

RATINGS

Ratings are an important factor in assessing the Company's competitive position in the insurance industry. The Company receives ratings from the following major rating agencies: A.M. Best Company (A.M. Best), Fitch Ratings (Fitch), Moody's Investors Service (Moody's) and Standard & Poor's Corp. (S&P). Rating agencies typically issue two types of ratings for insurance

companies: claims-paying (or financial strength) ratings, which reflect the rating agency's assessment of an insurer's ability to meet its financial obligations to policyholders, and debt ratings, which reflect the rating agency's assessment of a company's prospects for repaying its debts and are considered by lenders in connection with the setting of interest rates and terms for a company's short- and long-term borrowings. Agency ratings are not a recommendation to buy, sell or hold any security, and they may be revised or withdrawn at any time by the rating agency. Each agency's rating should be evaluated independently of any other agency's rating. The system and the number of rating categories can vary widely from rating agency to rating agency. Customers usually focus on claims-paying ratings, while creditors focus on debt ratings. Investors use both to evaluate a company's overall financial strength. The ratings issued on the Company or its subsidiaries by any of these agencies are announced publicly and are available on the Company's website and from the agencies.

A downgrade in one or more of the Company's claims-paying ratings could negatively impact the Company's business volumes and competitive position because demand for certain of its products may be reduced, particularly because some customers require that the Company maintain minimum ratings to enter into, maintain or renew business with it.

Additionally, a downgrade in one or more of the Company's debt ratings could adversely impact the Company's ability to access the capital markets and other sources of funds, including in the syndicated bank loan market, and/or result in higher financing costs. For example, downgrades in the Company's debt ratings could result in higher interest expense under the Company's revolving credit agreement (under which the cost of borrowing could range from LIBOR plus 75 basis points to LIBOR plus 137.5 basis points, depending on the Company's debt ratings), the Company's commercial paper program, or in the event that the Company were to access the capital markets by issuing debt or similar types of securities. See note 8 of notes to the consolidated financial statements for a discussion of the Company's revolving credit agreement and commercial paper program. The Company considers the level of increased cash funding requirements in the event of a ratings downgrade as part of the evaluation of the Company's liquidity requirements. The Company currently believes that a one- to two-notch downgrade in its debt ratings would not result in a material increase in interest expense under its existing credit agreement and commercial paper programs. In addition, the Company considers the impact of a ratings downgrade as part of the evaluation of its common share repurchases.

Claims — Paying Ratings

The following table summarizes the current claims-paying (or financial strength) ratings for each of the Company's rated entities as of February 14, 2019, including the position of each rating in the applicable agency's rating scale.

	A.M. Best	Moody's	S&P	Fitch
Travelers Reinsurance Pool (a)(b)	A++ (1st of 16)	Aa2 (3rd of 21)	AA (3rd of 21)	AA (3rd of 21)
Travelers C&S Co. of America	A++ (1st of 16)	Aa2 (3rd of 21)	AA (3rd of 21)	AA (3rd of 21)
First Floridian Auto and Home Ins. Co.	A- (4th of 16)	—	—	AA (3rd of 21)
Travelers C&S Co. of Europe, Ltd.	A++ (1st of 16)	Aa2 (3rd of 21)	AA (3rd of 21)	—
Travelers Insurance Company of Canada	A++ (1st of 16)	—	AA- (4th of 21)	—
The Dominion of Canada General Insurance Company	A (3rd of 16)	—	—	—
Travelers Insurance Company Limited	A++ (1st of 16)	—	AA (3rd of 21)	—

(a) The Travelers Reinsurance Pool consists of: The Travelers Indemnity Company, The Charter Oak Fire Insurance Company, The Phoenix Insurance Company, The Travelers Indemnity Company of Connecticut, The Travelers Indemnity Company of America, Travelers Property Casualty Company of America, Travelers Commercial Casualty Company, TravCo Insurance Company, The Travelers Home and Marine Insurance Company, Travelers Casualty and Surety Company, Northland Insurance Company, Northfield Insurance Company, Northland Casualty Company, American Equity Specialty Insurance Company, The Standard Fire Insurance Company, The Automobile Insurance Company of Hartford, Connecticut, Travelers Casualty Insurance Company of America,

Farmington Casualty Company, Travelers Commercial Insurance Company, Travelers Casualty Company of Connecticut, Travelers Property Casualty Insurance Company, Travelers Personal Security Insurance Company, Travelers Personal Insurance Company, Travelers Excess and Surplus Lines Company, St. Paul Fire and Marine Insurance Company, St. Paul Surplus Lines Insurance Company, The Travelers Casualty Company, St. Paul Protective Insurance Company, Travelers Constitution State Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Discover Property & Casualty Insurance Company, Discover Specialty Insurance Company and United States Fidelity and Guaranty Company.

(b) The following affiliated companies are 100% reinsured by one of the pool participants noted in (a) above: Fidelity and Guaranty Insurance Company, Gulf Underwriters Insurance Company, American Equity Insurance Company, Select Insurance Company, The Travelers Lloyds Insurance Company and Travelers Lloyds of Texas Insurance Company.

Debt Ratings

The following table summarizes the current debt, trust preferred securities and commercial paper ratings of the Company and its subsidiaries as of February 14, 2019. The table also presents the position of each rating in the applicable agency's rating scale.

	A.M. Best	Moody's	S&P	Fitch
Senior debt	a+ (5th of 22)	A2 (6th of 21)	A (6th of 22)	A (6th of 22)
Subordinated debt	a (6th of 22)	A3 (7th of 21)	A- (7th of 22)	BBB+ (8th of 22)
Junior subordinated debt	a- (7th of 22)	A3 (7th of 21)	BBB+ (8th of 22)	BBB+ (8th of 22)
Trust preferred securities	a- (7th of 22)	A3 (7th of 21)	BBB+ (8th of 22)	BBB+ (8th of 22)
Commercial paper	AMB-1+ (1st of 6)	P-1 (1st of 4)	A-1 (2nd of 10)	F1 (2nd of 8)

Rating Agency Actions

The following rating agency actions were taken with respect to the Company from February 15, 2018, the date on which the Company filed its Annual Report on Form 10-K for the year ended December 31, 2017, through February 14, 2019:

- On June 5, 2018, Fitch affirmed all ratings of the Company. The outlook for all ratings is stable.
- On October 31, 2018, A.M. Best affirmed all ratings of the Company, except for Travelers Insurance Company Limited, for which the financial strength rating was upgraded to "A++" from "A." The outlook for all ratings is stable.

INVESTMENT OPERATIONS

The majority of funds available for investment are deployed in a widely diversified portfolio of high quality, liquid, taxable U.S. government, tax-exempt U.S. municipal and taxable corporate and U.S. agency mortgage-backed bonds. The Company closely monitors the duration of its fixed maturity investments, and the Company's investment purchases and sales are executed with the objective of having adequate funds available to satisfy its insurance and debt obligations. Generally, the expected principal and interest payments produced by the Company's fixed maturity portfolio adequately fund the estimated runoff of the Company's insurance reserves. The Company's management of the duration of the fixed maturity investment portfolio, including its use of Treasury futures at times, has produced a duration that is less than the estimated duration of the Company's net insurance liabilities. The substantial amount by which the fair value of the fixed maturity portfolio exceeds the value of the net insurance liabilities, as well as the positive cash flow from newly sold policies and the large amount of high-quality liquid bonds, contributes to the Company's ability to fund claim payments without having to sell illiquid assets or access credit facilities.

The Company also invests much smaller amounts in equity securities, real estate, private equity limited partnerships, hedge funds, and real estate partnerships and joint ventures. These investment classes have the potential for higher returns but also involve varying degrees of risk, including less stable rates of return and less liquidity.

See note 3 of notes to the consolidated financial statements for additional information regarding the Company's investment portfolio.

REGULATION

U.S. State and Federal Regulation

TRV's domestic insurance subsidiaries are collectively licensed to transact insurance business in all U.S. states, the District of Columbia, Guam, Puerto Rico and the U.S. Virgin Islands and are subject to regulation in the various states and jurisdictions in which they transact business. The extent of regulation varies, but generally derives from statutes that delegate regulatory, supervisory and administrative authority to a department of insurance in each state and jurisdiction. The regulation, supervision and administration relate, among other things, to standards of solvency that

must be met and maintained, the licensing of insurers and

their agents, the nature of and limitations on investments, premium rates, restrictions on the size of risks that may be insured under a single policy, reserves and provisions for unearned premiums, losses and other obligations, deposits of securities for the benefit of policyholders, approval of policy forms and the regulation of market conduct, including the use of credit information in underwriting as well as other underwriting and claims practices. State insurance departments also conduct periodic examinations of the financial condition and market conduct of insurance companies and require the filing of financial and other reports on a quarterly and annual basis.

State insurance regulation continues to evolve in response to the changing economic and business environment as well as efforts by regulators internationally to develop a consistent approach to regulation. While the U.S. federal government has not historically regulated the insurance business, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 established a Federal Insurance Office (FIO) within the U.S. Department of the Treasury. While the FIO has limited regulatory authority, it has been active in the discussions to develop international regulatory standards for the insurance industry. In response to these international efforts, the state insurance regulators, through the National Association of Insurance Commissioners (NAIC), are working with the Federal Reserve and the FIO to consider and develop changes to the U.S. regulatory framework.

These changes are evidenced by the incorporation of supervisory colleges into the U.S. regulatory framework. A supervisory college is a forum of the regulators having jurisdictional authority over a holding company's various insurance subsidiaries, including foreign insurance subsidiaries, convened to meet with the insurer's executive management, to evaluate the insurer from both a group-wide and legal-entity basis. Some of the items evaluated during the colleges include the insurer's business strategies, enterprise risk management and corporate governance.

While insurance in the United States is regulated on a legal-entity basis, the NAIC has adopted changes to its Model Holding Company Act that some states, including the State of Connecticut, have enacted to allow the insurance commissioner to be designated as the group-wide supervisor (i.e., lead regulator) for the insurance holding company system based upon certain criteria, including the place of domicile of the insurance subsidiaries holding the majority of the insurance group's premiums, assets, or liabilities. Based upon these criteria, the State of Connecticut Insurance Department is designated as TRV's lead regulator and conducts the supervisory colleges for the Company.

Insurance Regulation Concerning Dividends from Insurance Subsidiaries. TRV's principal domestic insurance subsidiaries are domiciled in the State of Connecticut. The Connecticut insurance holding company laws require notice to, and approval by, the state insurance commissioner for the declaration or payment of any dividend from an insurance subsidiary that, together with other distributions made within the preceding twelve months, exceeds the greater of 10% of the insurance subsidiary's statutory capital and surplus as of the preceding December 31, or the insurance subsidiary's net income for the twelve-month period ending the preceding December 31, in each case determined in accordance with statutory accounting practices and by state regulation. This declaration or payment is further limited by adjusted unassigned surplus, as determined in accordance with statutory accounting practices.

The insurance holding company laws of other states in which TRV's domestic insurance subsidiaries are domiciled generally contain similar, although in some instances somewhat more restrictive, limitations on the payment of dividends.

Rate and Rule Approvals. TRV's domestic insurance subsidiaries are subject to each state's laws and regulations regarding rate and rule approvals. The applicable laws and regulations generally establish standards to ensure that rates are not excessive, inadequate, unfairly discriminatory or used to engage in unfair price competition. An insurer's ability to adjust rates and the relative timing of the process are dependent upon each state's requirements. Many states have enacted variations of competitive ratemaking laws, which allow insurers to set certain premium rates for certain classes of insurance without having to obtain the prior approval of the state insurance department.

Requirements for Exiting Geographic Markets and/or Canceling or Nonrenewing Policies. Many states have laws and regulations which may impact the timing and/or the ability of an insurer to either discontinue or substantially reduce its writings in that state. These laws and regulations typically require prior notice, and in some instances insurance department approval, prior to discontinuing a line of business or withdrawing from that state. In addition, all states impose limitations on cancellations or non-renewals of certain policies, including in particular, limitations on the reasons for cancellations and on the timing of non-renewals.

Assessments for Guaranty Funds and Second-Injury Funds and Other Mandatory Assigned Risk and Reinsurance Arrangements. Virtually all states require insurers licensed to do business in their state, including TRV's domestic insurance subsidiaries, to bear a portion of the loss suffered by some claimants because of the insolvency of other insurers. Many states also have laws that establish second-injury funds to provide compensation to injured employees for aggravation of a prior condition or injury.

TRV's domestic insurance subsidiaries are also required to participate in various involuntary assigned risk pools, principally involving workers' compensation, automobile insurance, property windpools in states prone to property damage from hurricanes and Fair Access to Insurance Requirements (FAIR) plans, as well as automobile assigned risk plans the results of which are not pooled with other carriers, which provide various insurance coverages to individuals or other entities that otherwise are unable to purchase that coverage in the voluntary market.

Assessments may include any charge mandated by statute or regulatory authority that is related directly or indirectly to underwriting activities. Examples of such mechanisms include, but are not limited to, the Florida Hurricane Catastrophe Fund, Florida Citizens Property Insurance Corporation, National Workers' Compensation Reinsurance Pool, various workers' compensation related funds (e.g., the Florida Special Disability Trust), North Carolina Beach Plan, Louisiana Citizens Property Insurance Corporation, and the Texas Windstorm Insurance Association. Amounts payable or paid as a result of arrangements that are in substance reinsurance, including certain involuntary pools where insurers are required to assume premiums and losses from those pools, are accounted for as reinsurance (e.g., National Workers' Compensation Reinsurance Pool, North Carolina Beach Plan). Amounts related to assessments from arrangements that are not reinsurance are reported as a component of "General and Administrative Expenses," such as the Florida Special Disability Trust. For additional information concerning assessments for guaranty funds and second-injury funds and other mandatory assigned risk and reinsurance agreements including state-funding mechanisms, see "Item 1A—Risk Factors."

Insurance Regulatory Information System (IRIS). The NAIC developed the IRIS to help state regulators identify companies that may require regulatory attention. Financial examiners review annual financial statements and the results of key financial ratios based on year-end data with the goal of identifying insurers that appear to require immediate regulatory attention. Each ratio has an established "usual range" of results. A ratio result falling outside the usual range, however, is not necessarily considered adverse; rather, unusual values are used as part of the regulatory early monitoring system. Furthermore, in some years, it may not be unusual for financially sound companies to have several ratios with results outside the usual ranges. Generally, an insurance company may become subject to regulatory scrutiny or, depending on the company's financial condition, regulatory action if certain of its key IRIS ratios fall outside the usual ranges and the insurer's financial condition is trending downward.

Based on preliminary 2018 IRIS ratios calculated by the Company for its lead domestic insurance subsidiaries, The Travelers Indemnity Company had results outside the normal range for one IRIS ratio due to the size of its investments in certain non-fixed maturity securities, while Travelers Casualty and Surety Company and The Standard Fire Insurance Company had results outside the normal range for one IRIS ratio due to the amount of dividends received from its subsidiaries. In 2017, The Travelers Indemnity Company and Travelers Casualty and Surety Company had results outside the normal range for these same ratios.
Management does not anticipate regulatory action as a result of the 2018 IRIS ratio results for the lead insurance subsidiaries or their insurance subsidiaries. In all instances in prior years, regulators have been satisfied upon follow-up that no regulatory action was required.
Risk-Based Capital (RBC) Requirements. The NAIC has an RBC requirement which sets forth minimum capital standards for most property and casualty insurance companies and is intended to raise the level of protection for policyholder obligations. The Company's U.S. insurance subsidiaries are subject to these NAIC RBC requirements based on laws that have been adopted by individual states. These requirements subject insurers having policyholders' surplus less than that required by the RBC calculation to varying degrees of regulatory action, depending on the level of capital inadequacy. Each of the Company's U.S. insurance subsidiaries had policyholders' surplus at December 31, 2018 significantly above the level at which any RBC regulatory action would occur.

While there is currently no group regulatory capital requirement in the United States, a comparison of an insurer's policyholders' surplus on a combined basis to the legal entity NAIC RBC requirements on a combined basis can

provide useful information regarding an insurance group's overall capital adequacy in the U.S. The amount of policyholders' surplus held by the Company's U.S. insurance subsidiaries at December 31, 2018, determined on a combined basis, significantly exceeded the level at which the subsidiaries would be subject to RBC regulatory action (company action level) on a combined basis at that date.

The formulas have not been designed to differentiate among adequately capitalized companies that operate with levels of capital above the RBC requirement. Therefore, it is inappropriate and ineffective to use the formulas to rate or to rank these companies.

Investment Regulation. Insurance company investments must comply with applicable laws and regulations which prescribe the kind, quality and concentration of investments. In general, these laws and regulations permit investments in federal, state and municipal obligations, corporate bonds, preferred and common equity securities, mortgage loans, real estate and certain other

investments, subject to specified limits and certain other qualifications. At December 31, 2018, the Company was in compliance with these laws and regulations.

International Regulation

TRV's insurance subsidiaries based in Canada, and the Canadian branch of one of the Company's U.S. insurance subsidiaries, are regulated for solvency purposes by the Office of the Superintendent of Financial Institutions (OSFI) under the provisions of the Insurance Companies Act (Canada). These Canadian subsidiaries and the Canadian branch are also subject to Canadian provincial and territorial insurance legislation which regulates market conduct, including pricing, underwriting, coverage and claim conduct, in varying degrees by province/territory and by product line.

TRV's insurance subsidiaries based in the United Kingdom (U.K.) are regulated by two regulatory bodies, The Prudential Regulation Authority (PRA) and The Financial Conduct Authority (FCA). The PRA's primary objective is to promote the safety and soundness of insurers for the protection of policyholders, while the FCA has three operational objectives: (i) to secure an appropriate degree of protection for consumers, (ii) to protect and enhance the integrity of the U.K. financial system, and (iii) to promote effective competition in the interests of consumers. TRV's insurance operations in the Republic of Ireland have been conducted through the Irish branch of Travelers Insurance Company Limited which is supervised by the Insurance Supervision Departments of the Central Bank of Ireland (as to conduct) and also by the PRA.

TRV's managing agency (Travelers Syndicate Management Limited) (TSML) of its Lloyd's syndicate (Syndicate 5000 at Lloyd's) is also regulated by the PRA and the FCA, which have delegated certain regulatory responsibilities to the Council of Lloyd's. Travelers Syndicate 5000 is able to write business in over 75 jurisdictions throughout the world by virtue of Lloyd's international licenses. In each such jurisdiction, the policies written by TSML, as part of Lloyd's, are subject to the laws and insurance regulations of that jurisdiction. Travelers Underwriting Agency Limited, which as an insurance intermediary is regulated by the FCA, produces insurance business for Travelers Syndicate 5000.

TRV's operations in the U.K. and the Republic of Ireland are also subject to regulation by the European Union (EU). Generally, EU requirements are adopted by the EU and then implemented by enabling legislation in the member countries. Significant areas of oversight and influence from the EU include capital and solvency requirements (Solvency II), competition law and antitrust regulation, intermediary and distribution regulation, gender discrimination and data security and privacy. The applicability to TRV's businesses of all of the EU requirements are likely to change in ways yet to be determined as a result of the U.K.'s exit from the EU, which is currently expected to be effective in March 2019.

Following the withdrawal of the U.K. from the EU, Travelers will conduct its insurance operations in the Republic of Ireland and across Europe through a newly established insurance subsidiary that is incorporated in the Republic of Ireland and authorized and regulated by the Central Bank of Ireland. Certain operations will be conducted in the U.K. through a U.K. branch of the Irish subsidiary, which will be supervised by the PRA and FCA as well as the Central Bank of Ireland. Lloyd's has established an insurance subsidiary in Brussels, Belgium which is authorized and regulated by the National Bank of Belgium. From January 1, 2019, TRV will use Lloyd's Brussels to cover its Lloyd's customers' risks in the EU.

A TRV subsidiary, Travelers Casualty and Surety Company, has a representative office in China. The representative office is regulated by the China Insurance Regulatory Commission. TRV's Brazilian operations are regulated by the Superintendencia de Seguros Privados (SUSEP).

Regulators in these jurisdictions require insurance companies to maintain certain levels of capital depending on, among other things, the type and amount of insurance policies in force. Each of the Company's foreign insurance subsidiaries had capital above their respective regulatory requirements at December 31, 2018.

Covered Agreements

The U.S. Department of the Treasury and the Office of the U.S. Trade Representative have signed covered agreements (the Covered Agreements) regarding prudential (solvency) insurance and reinsurance measures with each of the EU and the U.K. The Covered Agreements include three areas of prudential insurance supervision: reinsurance contracts, group supervision, and the exchange of information between U.S. and U.K. regulators and between U.S. and EU regulators on insurers and reinsurers that operate in the U.S., U.K. and EU markets. The Covered Agreement with the EU went into effect in April 2018, while the Covered Agreement with the U.K. will take full effect at the earlier of the satisfaction of certain conditions or the U.K.'s exit from the EU. The Covered Agreements are intended to promote cooperation between U.S. insurance regulators and EU and U.K. insurance regulators and to limit the ability of the EU and the U.K. to apply solvency and group capital requirements to the worldwide operations of any U.S. insurer operating in the EU or the U.K.

The Covered Agreements eliminate the collateral and local presence requirements for EU and U.K. reinsurers operating in the U.S., and for U.S. reinsurers operating in the EU and U.K., as a condition for credit for reinsurance in regulatory reporting and capital requirements. The prospective elimination of the collateral requirement is conditioned on the reinsurer meeting capital and solvency standards and maintaining a record of prompt payments to ceding insurers. The Covered Agreements include a five-year transition period to full compliance.

Insurance Holding Company Statutes

As a holding company, TRV is not regulated as an insurance company. However, since TRV owns capital stock in insurance subsidiaries, it is subject to state insurance holding company statutes, as well as certain other laws, of each of its insurance subsidiaries' states of domicile. All holding company statutes, as well as other laws, require disclosure and, in some instances, prior approval of material transactions between an insurance company and an affiliate. The holding company statutes and other laws also require, among other things, prior approval of an acquisition of control of a domestic insurer, some transactions between affiliates and the payment of extraordinary dividends or distributions.

Insurance Regulations Concerning Change of Control. Many state insurance regulatory laws contain provisions that require advance approval by state agencies of any change in control of an insurance company that is domiciled, or, in some cases, having substantial business that it is deemed to be commercially domiciled, in that state.

The laws of many states also contain provisions requiring pre-notification to state agencies prior to any change in control of a non-domestic insurance company admitted to transact business in that state. While these pre-notification statutes do not authorize the state agency to disapprove the change of control, they do authorize issuance of cease-and-desist orders with respect to the non-domestic insurer if it is determined that some conditions, such as undue market concentration, would result from the acquisition.

Any transactions that would constitute a change in control of any of TRV's insurance subsidiaries would generally require prior approval by the insurance departments of the states in which the insurance subsidiaries are domiciled or commercially domiciled. They may also require pre-acquisition notification in those states that have adopted pre-acquisition notification provisions and in which such insurance subsidiaries are admitted to transact business.

Two of TRV's insurance subsidiaries and its operations at Lloyd's are domiciled in the United Kingdom and one of its insurance subsidiaries is domiciled in the Republic of Ireland. Insurers in the United Kingdom and the Republic of Ireland are subject to change of control restrictions, including approval of the PRA and FCA and of the Central Bank of Ireland, respectively. TRV's insurance subsidiaries domiciled in, or authorized to conduct insurance business in, Canada are also subject to regulatory change of control restrictions, including approval of OSFI. TRV's Brazilian operations are subject to regulatory change of control and other share transfer restrictions, including approval of SUSEP.

These requirements may deter, delay or prevent transactions affecting the control of or the ownership of common stock, including transactions that could be advantageous to TRV's shareholders.

Regulatory Developments

For a discussion of domestic and international regulatory developments, see "Item 1A—Risk Factors" including "Changes in federal regulation could impose significant burdens on us and otherwise adversely impact our results" and "Regulatory changes outside of the United States, including in Canada, the U.K., the Republic of Ireland and the European Union, could adversely impact our results of operations and limit our growth."

ENTERPRISE RISK MANAGEMENT

As a large property and casualty insurance enterprise, the Company is exposed to many risks. These risks are a function of the environments within which the Company operates. Since certain risks can be correlated with other risks, an event or a series of events can impact multiple areas of the Company simultaneously and have a material effect on the Company's results of operations, financial position and/or liquidity. These exposures require an entity-wide view of risk and an understanding of the potential impact on all aspects of the Company's operations. It also requires the Company to manage its risk-taking to be within its risk appetite in a prudent and balanced effort to create and preserve value for all of the Company's stakeholders. This approach to Company-wide risk evaluation and management is commonly called Enterprise Risk Management (ERM). ERM activities involve both the identification and assessment of a broad range of risks and the execution of synchronized strategies to effectively manage such risks. Effective ERM also includes the determination of the Company's risk capital needs, which takes into account regulatory requirements and credit rating considerations, in addition to economic and other factors.

ERM at the Company is an integral part of its business operations. All corporate leaders and the Board of Directors are engaged in ERM. ERM involves risk-based analytics, as well as reporting and feedback throughout the enterprise in support of the Company's long-term financial strategies and objectives.

The Company uses various analyses and methods, including proprietary and third-party computer modeling processes, to make underwriting and reinsurance decisions designed to manage its exposure to catastrophic events. In addition to catastrophe modeling and analysis, the Company also models and analyzes its exposure to other extreme events. The Company also utilizes proprietary and third-party computer modeling processes to evaluate capital adequacy. These analytical techniques are an integral component of the Company's ERM process and further support the Company's long-term financial strategies and objectives.

In addition to the day-to-day ERM activities within the Company's operations, key internal risk management functions include, among others, the Management and Operating Committees (comprised of the Company's Chief Executive Officer and the other most senior members of management), the Enterprise and Business Risk Committees of management, the Credit Committee, Chief Legal Officer, General Counsel, the Chief Ethics and Compliance Officer, the Corporate Actuarial group, the Corporate Audit group, the Corporate Controller group, the Accounting Policy group and the Enterprise Underwriting group, among others. A senior executive team comprised of the Chief Risk Officer and the Chief Underwriting Officer oversees the ERM process. The mission of this team is to facilitate risk assessment and to collaborate in implementing effective risk management strategies throughout the Company. Another strategic ERM objective of this team includes working across the Company to enhance effective and realistic risk modeling capabilities as part of the Company's overall effort to understand and manage its portfolio of risks to be within its risk appetite. Board oversight of ERM is provided by the Risk Committee of the Board of Directors, which reviews the strategies, processes and controls pertaining to the Company's insurance operations and oversees the implementation, execution and performance of the Company's ERM program. The Risk Committee of the Board of Directors meets with senior management at least four times a year to discuss ERM activities and provides a report to the full Board of Directors after each such meeting.

The Company's ERM efforts build upon the foundation of an effective internal control environment. ERM expands the internal control objectives of effective and efficient operations, reliable financial reporting and compliance with applicable laws and regulations, to fostering, leading and supporting an integrated, risk-based culture within the Company that focuses on value creation and preservation. However, the Company can provide only reasonable, not absolute, assurance that these objectives will be met. Further, the design of any risk management or control system must reflect the fact that there are resource constraints, and the benefits must be considered relative to their costs. As a result, the possibility of material financial loss remains in spite of the Company's significant ERM efforts. An investor should carefully consider the risks and all of the other information set forth in this annual report, including the discussions included in "Item 1A—Risk Factors," "Item 7A—Quantitative and Qualitative Disclosures About Market Risk," and "Item 8—Financial Statements and Supplementary Data."

OTHER INFORMATION

Customer Concentration

In the opinion of the Company's management, no material part of the business of the Company and its subsidiaries is dependent upon a single customer or group of customers, the loss of any one of which would have a material adverse effect on the Company, and no one customer or group of affiliated customers accounts for 10% or more of the Company's consolidated revenues.

Employees

At December 31, 2018, the Company had approximately 30,400 employees. The Company believes that its employee relations are satisfactory. None of the Company's U.S. employees are subject to collective bargaining agreements.

Sources of Liquidity

For a discussion of the Company's sources of funds and maturities of the long-term debt of the Company, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources," and note 8 of notes to the consolidated financial statements.

Taxation

For a discussion of tax matters affecting the Company and its operations, see "Item 7— Management's Discussion and Analysis of Financial Condition and Results of Operations" and note 12 of notes to the consolidated financial statements.

Intellectual Property

The Company relies on a combination of contractual rights and copyright, trademark, patent and trade secret laws to establish and protect its intellectual property. With respect to trademarks specifically, the Company has registrations in many countries, including the United States, for its material trademarks, including the "Travelers" name and the Company's iconic umbrella logo. The Company has the right to retain its material trademark rights in perpetuity, so long as it satisfies the use and registration requirements of all applicable countries. The Company regards its trademarks as highly valuable assets in marketing its products and services and vigorously seeks to protect its trademarks against infringement. See "Item 1A—Risk Factors—Intellectual property is important to our business, and we may be unable to protect and enforce our own intellectual property or we may be subject to claims for infringing the intellectual property of others."

Company Website, Social Media and Availability of SEC Filings

The Company's internet website is www.travelers.com. Information on the Company's website is not incorporated by reference herein and is not a part of this Form 10-K. The Company makes available free of charge on its website or provides a link on its website to the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and any 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 those reports are electronically filed with, or furnished to, the SEC. To access these filings, go to the Company's website and under the "For Investors" heading, click on "Financial Information" then "SEC Filings."

The Company may use its website and/or social media outlets, such as Facebook and Twitter, as distribution channels of material company information. Financial and other important information regarding the Company is routinely posted on and accessible through the Company's website at http://investor.travelers.com, its Facebook page at https://www.facebook.com/travelers and its Twitter account (@Travelers) at https://www.twitter.com/Travelers. In addition, you may automatically receive email alerts and other information about the Company when you enroll your email address by visiting the "Email Notifications" section under the "For Investors" heading at http://investor.travelers.com.

Glossary of Selected Insurance Terms

Accident year	The annual calendar accounting period in which loss events occurred, regardless of when the losses are actually reported, booked or paid.
Adjusted unassigned surplus	Unassigned surplus as of the most recent statutory annual report reduced by twenty-five percent of that year's unrealized appreciation in value or revaluation of assets or unrealized profits on investments, as defined in that report.
Admitted insurer	A company licensed to transact insurance business within a state.
Agent	A licensed individual who sells and services insurance policies, receiving a commission from the insurer for selling the business and a fee for servicing it. An independent agent represents multiple insurance companies and searches the market for the best product for its client.
Annuity	A contract that pays a periodic benefit over the remaining life of a person (the annuitant), the lives of two or more persons or for a specified period of time.
Assigned risk pools	Reinsurance pools which cover risks for those unable to purchase insurance in the voluntary market. Possible reasons for this inability include the risk being too great or the profit being too small under the required insurance rate structure. The costs of the risks associated with these pools are charged

	back to insurance carriers in proportion to their direct writings.
Assumed reinsurance	Insurance risks acquired from a ceding company.

Book value per share	Total common shareholders' equity divided by the number of common shares outstanding.
Broker	One who negotiates contracts of insurance or reinsurance on behalf of an insured party, receiving a commission from the insurer or reinsurer for placement and other services rendered.
Capacity	The percentage of statutory capital and surplus, or the dollar amount of exposure, that an insurer or reinsurer is willing or able to place at risk. Capacity may apply to a single risk, a program, a line of business or an entire book of business. Capacity may be constrained by legal restrictions, corporate restrictions or indirect restrictions.
Captive	A closely-held insurance company whose primary purpose is to provide insurance coverage to the company's owners or their affiliates.
Case reserves	Claim department estimates of anticipated future payments to be made on each specific individual reported claim.
Casualty insurance	Insurance which is primarily concerned with the losses caused by injuries to third persons, i.e., not the insured, and the legal liability imposed on the insured resulting therefrom. It includes, but is not limited to, employers' liability, workers' compensation, public liability, automobile liability, personal liability and aviation liability insurance. It excludes certain types of losses that by law or custom are considered as being exclusively within the scope of other types of insurance, such as fire or marine.
Catastrophe	A severe loss designated a catastrophe by internationally recognized organizations that track and report on insured losses resulting from catastrophic events, such as Property Claim Services (PCS) for events in the United States and Canada. Catastrophes can be caused by various natural events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, wildfires, severe winter weather, floods, tsunamis, volcanic eruptions and other naturally-occurring events, such as solar flares. Catastrophes can also be man-made, such as terrorist attacks and other intentionally destructive acts including those involving nuclear, biological, chemical and radiological events, cyber events, explosions and destruction of infrastructure. Each catastrophe has unique characteristics and catastrophes are not predictable as to timing or amount. Their effects are included in net and core income and claims and claim adjustment expense reserves upon occurrence. A catastrophe may result in the payment of reinsurance reinstatement premiums and assessments from various pools. The Company's threshold for disclosing catastrophes is primarily determined at the reportable segment level. If a threshold for one segment or a combination thereof is exceeded and the other segments have losses from the same event, losses from the event are identified as catastrophe losses in the segment results and for the consolidated results of the Company. Additionally, an aggregate threshold is applied for International business across all reportable segments. The threshold for 2018 ranged from approximately $18 million to $30 million of losses before reinsurance and taxes.
Catastrophe loss	Loss and directly identified loss adjustment expenses from catastrophes, as well as related reinsurance reinstatement premiums and assessments from various pools.

Catastrophe reinsurance	A form of excess-of-loss reinsurance which, subject to a specified limit, indemnifies the ceding company for the amount of loss in excess of a specified retention with respect to an accumulation of losses and related reinsurance reinstatement premiums resulting from a catastrophic event. The actual reinsurance document is called a “catastrophe cover.” These reinsurance contracts are typically designed to cover property insurance losses but can be written to cover casualty insurance losses such as from workers’ compensation policies.
Cede; ceding company	When an insurer reinsures its liability with another insurer or a “cession,” it “cedes” business and is referred to as the “ceding company.”
Ceded reinsurance	Insurance risks transferred to another company as reinsurance. See “Reinsurance.”
Claim	Request by an insured for indemnification by an insurance company for loss incurred from an insured peril.
Claim adjustment expenses	See “Loss adjustment expenses (LAE).”
Claims and claim adjustment expenses	See “Loss” and “Loss adjustment expenses (LAE).”
Claims and claim adjustment expense reserves	See “Loss reserves.”
Cohort	A group of items or individuals that share a particular statistical or demographic characteristic. For example, all claims for a given product in a given market for a given accident year would represent a cohort of claims.
Combined ratio	For Statutory Accounting Practices (SAP), the combined ratio is the sum of the SAP loss and LAE ratio and the SAP underwriting expense ratio as defined in the statutory financial statements required by insurance regulators. The combined ratio as used in this report is the equivalent of, and is calculated in the same manner as, the SAP combined ratio except that the SAP underwriting expense ratio is based on net written premium and the underwriting expense ratio as used in this report is based on net earned premiums. The combined ratio is an indicator of the Company’s underwriting discipline, efficiency in acquiring and servicing its business and overall underwriting profitability. A combined ratio under 100% generally indicates an underwriting profit. A combined ratio over 100% generally indicates an underwriting loss. Other companies’ method of computing a similarly titled measure may not be comparable to the Company’s method of computing this ratio.
Commercial multi-peril policies	Refers to policies which cover both property and third-party liability exposures.
Commutation agreement	An agreement between a reinsurer and a ceding company whereby the reinsurer pays an agreed-upon amount in exchange for a complete discharge of all obligations, including future

obligations, between the parties for reinsurance losses incurred.

Core income (loss)	Consolidated net income (loss) excluding the after-tax impact of net realized investment gains (losses), discontinued operations, the effect of a change in tax laws and tax rates at enactment date, and cumulative effect of changes in accounting principles when applicable. Financial statement users consider core income when analyzing the results and trends of insurance companies.
Debt-to-total capital ratio	The ratio of debt to total capitalization.
Debt-to-total capital ratio excluding net unrealized gain (loss) on investments	The ratio of debt to total capitalization excluding the after-tax impact of net unrealized investment gains and losses included in shareholders' equity.
Deductible	The amount of loss that an insured retains.
Deferred acquisition costs (DAC)	Incremental direct costs of acquired and renewal insurance contracts, consisting of commissions (other than contingent commissions) and premium-related taxes that are deferred and amortized to achieve a matching of revenues and expenses when reported in financial statements prepared in accordance with U.S. Generally Accepted Accounting Principles (GAAP).
Deficiency	With regard to reserves for a given liability, a deficiency exists when it is estimated or determined that the reserves are insufficient to pay the ultimate settlement value of the related liabilities. Where the deficiency is the result of an estimate, the estimated amount of deficiency (or even the finding of whether or not a deficiency exists) may change as new information becomes available.
Demand surge	Significant short-term increases in building material and labor costs due to a sharp increase in demand for those materials and services, commonly as a result of a large catastrophe resulting in significant widespread property damage.
Direct written premiums	The amounts charged by an insurer to insureds in exchange for coverages provided in accordance with the terms of an insurance contract. The amounts exclude the impact of all reinsurance premiums, either assumed or ceded.
Earned premiums or premiums earned	That portion of property casualty premiums written that applies to the expired portion of the policy term. Earned premiums are recognized as revenues under both SAP and GAAP.
Excess and surplus lines insurance	Insurance for risks not covered by standard insurance due to the unique nature of the risk. Risks could be placed in excess and surplus lines markets due to any number of characteristics, such as loss experience, unique or unusual exposures, or insufficient experience in business. Excess and surplus lines are less regulated by the states, allowing greater flexibility to design specific insurance coverage and negotiate pricing based on the risks to be secured.
Excess liability	Additional casualty coverage above a layer of insurance exposures.

Excess-of-loss reinsurance	Reinsurance that indemnifies the reinsured against all or a specified portion of losses over a specified dollar amount or “retention.”
Exposure	The measure of risk used in the pricing of an insurance product. The change in exposure is the amount of change in premium on policies that renew attributable to the change in portfolio risk.

Facultative reinsurance	The reinsurance of all or a portion of the insurance provided by a single policy. Each policy reinsured is separately negotiated.
Fair Access to Insurance Requirements (FAIR) Plan	A residual market mechanism which provides property insurance to those unable to obtain such insurance through the regular (voluntary) market. FAIR plans are set up on a state-by-state basis to cover only those risks in that state. For more information, see “residual market (involuntary business).”
Fidelity and surety programs	Fidelity insurance coverage protects an insured for loss due to embezzlement or misappropriation of funds by an employee. Surety is a three-party agreement in which the insurer agrees to pay a third party or make complete an obligation in response to the default, acts or omissions of an insured.
Gross written premiums	The direct and assumed contractually determined amounts charged to the policyholders for the effective period of the contract based on the terms and conditions of the insurance contract.
Ground-up analysis	A method to estimate ultimate claim costs for a given cohort of claims such as an accident year/product line component. It involves analyzing the exposure and claim activity at an individual insured level and then through the use of deterministic or stochastic scenarios and/or simulations, estimating the ultimate losses for those insureds. The total losses for the cohort are then the sum of the losses for each individual insured. In practice, the method is sometimes simplified by performing the individual insured analysis only for the larger insureds, with the costs for the smaller insureds estimated via sampling approaches (extrapolated to the rest of the smaller insured population) or aggregate approaches (using assumptions consistent with the ground-up larger insured analysis).
Guaranteed-cost products	An insurance policy where the premiums charged will not be adjusted for actual loss experience during the covered period.
Guaranty fund	A state-regulated mechanism that is financed by assessing insurers doing business in those states. Should insolvencies occur, these funds are available to meet some or all of the insolvent insurer’s obligations to policyholders.
Holding company liquidity	Total cash, short-term invested assets and other readily marketable securities held by the holding company.
Incurred but not reported (IBNR) reserves	Reserves for estimated losses and LAE that have been incurred but not yet reported to the insurer. This includes amounts for unreported claims, development on known cases and re-opened claims.
Inland marine	A broad type of insurance generally covering articles that may be transported from one place to another, as well as bridges, tunnels and other instrumentalities of transportation. It includes goods in transit, generally other than transoceanic, and may include policies for movable objects such as personal effects, personal property, jewelry, furs, fine art and others.
Insurance Regulatory Information System	Financial ratios calculated by the NAIC to assist state insurance departments in monitoring the financial condition of insurance companies.

(IRIS) ratios	
Large deductible policy	An insurance policy where the customer assumes at least $25,000 or more of each loss. Typically, the insurer is responsible for paying the entire loss under those policies and then seeks reimbursement from the insured for the deductible amount.

Lloyd's	An insurance marketplace based in London, England, where brokers, representing clients with insurable risks, deal with Lloyd's underwriters, who represent investors. The investors are grouped together into syndicates that provide capital to insure the risks.
Loss	An occurrence that is the basis for submission and/or payment of a claim. Losses may be covered, limited or excluded from coverage, depending on the terms of the policy.
Loss adjustment expenses (LAE)	The expenses of settling claims, including legal and other fees and the portion of general expenses allocated to claim settlement costs.
Loss and LAE ratio	For SAP, the loss and LAE ratio is the ratio of incurred losses and loss adjustment expenses less certain administrative services fee income to net earned premiums as defined in the statutory financial statements required by insurance regulators. The loss and LAE ratio as used in this report is calculated in the same manner as the SAP ratio. The loss and LAE ratio is an indicator of the Company's underwriting discipline and underwriting profitability. Other companies' method of computing a similarly titled measure may not be comparable to the Company's method of computing this ratio.
Loss reserves	Liabilities established by insurers and reinsurers to reflect the estimated cost of claims incurred that the insurer or reinsurer will ultimately be required to pay in respect of insurance or reinsurance it has written. Reserves are established for losses and for LAE, and consist of case reserves and IBNR reserves. As the term is used in this document, "loss reserves" is meant to include reserves for both losses and LAE.
Loss reserve development	The increase or decrease in incurred claims and claim adjustment expenses as a result of the re-estimation of claims and claim adjustment expense reserves at successive valuation dates for a given group of claims. Loss reserve development may be related to prior year or current year development.
Losses incurred	The total losses sustained by an insurance company under a policy or policies, whether paid or unpaid. Incurred losses include a provision for IBNR.
National Association of Insurance Commissioners (NAIC)	An organization of the insurance commissioners or directors of all 50 states, the District of Columbia and the five U.S. territories organized to promote consistency of regulatory practice and statutory accounting standards throughout the United States.
Net written premiums	Direct written premiums plus assumed reinsurance premiums less premiums ceded to reinsurers.
New business volume	The amount of written premiums related to new policyholders and additional products sold to existing policyholders.
Pool	An organization of insurers or reinsurers through which particular types of risks are underwritten with premiums, losses and expenses being shared in agreed-upon percentages.
Premiums	

The amount charged during the year on policies and contracts issued, renewed or reinsured by an insurance company.

Probable maximum loss (PML)	The maximum amount of loss that the Company would be expected to incur on a policy if a loss were to occur, giving effect to collateral, reinsurance and other factors.
Property insurance	Insurance that provides coverage to a person or business with an insurable interest in tangible property for that person's or business's property loss, damage or loss of use.
Quota share reinsurance	Reinsurance wherein the insurer cedes an agreed-upon fixed percentage of liabilities, premiums and losses for each policy covered on a pro rata basis.
Rates	Amounts charged per unit of insurance.
Redundancy	With regard to reserves for a given liability, a redundancy exists when it is estimated or determined that the reserves are greater than what will be needed to pay the ultimate settlement value of the related liabilities. Where the redundancy is the result of an estimate, the estimated amount of redundancy (or even the finding of whether or not a redundancy exists) may change as new information becomes available.
Reinstatement premiums	Additional premiums payable to reinsurers to restore coverage limits that have been exhausted as a result of reinsured losses under certain excess-of-loss reinsurance treaties.
Reinsurance	The practice whereby one insurer, called the reinsurer, in consideration of a premium paid to that insurer, agrees to indemnify another insurer, called the ceding company, for part or all of the liability of the ceding company under one or more policies or contracts of insurance which it has issued.
Reinsurance agreement	A contract specifying the terms of a reinsurance transaction.
Renewal premium change	The estimated change in average premium on policies that renew, including rate and exposure changes. Such statistics are subject to change based on a number of factors, including changes in estimates.
Renewal rate change	The estimated change in average premium on policies that renew, excluding exposure changes. Such statistics are subject to change based on a number of factors, including changes in estimates.
Residual market (involuntary business)	Insurance market which provides coverage for risks for those unable to purchase insurance in the voluntary market. Possible reasons for this inability include the risks being too great or the profit potential too small under the required insurance rate structure. Residual markets are frequently created by state legislation either because of lack of available coverage such as: property coverage in a windstorm prone area or protection of the accident victim as in the case of workers' compensation. The costs of the residual market are usually charged back to the direct insurance carriers in proportion to the carriers' voluntary market shares for the type of coverage involved.
Retention	The amount of exposure a policyholder company retains on any one risk or group of risks. The term may apply to an insurance policy, where the policyholder is an individual, family or business, or a reinsurance policy, where the policyholder is an insurance company.

Retention rate	The percentage of prior period premiums (excluding renewal premium changes), accounts or policies available for renewal in the current period that were renewed. Such statistics are subject to change based on a number of factors, including changes in estimates.
Retrospective premiums	Premiums related to retrospectively rated policies.
Retrospective rating	A plan or method which permits adjustment of the final premium or commission on the basis of actual loss experience, subject to certain minimum and maximum limits.
Return on equity	The ratio of net income (loss) less preferred dividends to average shareholders' equity.
Risk-based capital (RBC)	A measure adopted by the NAIC and enacted by states for determining the minimum statutory policyholders' surplus requirements of insurers. Insurers having total adjusted capital less than that required by the RBC calculation will be subject to varying degrees of regulatory action depending on the level of capital inadequacy.
Risk retention group	An alternative form of insurance in which members of a similar profession or business band together to self insure their risks.
Runoff business	An operation which has been determined to be nonstrategic; includes non-renewals of in-force policies and a cessation of writing new business, where allowed by law.
Salvage	The amount of money an insurer recovers through the sale of property transferred to the insurer as a result of a loss payment.
Second-injury fund	The employer of an injured, impaired worker is responsible only for the workers' compensation benefit for the most recent injury; the second-injury fund would cover the cost of any additional benefits for aggravation of a prior condition. The cost is shared by the insurance industry and self-insureds, funded through assessments to insurance companies and self-insureds based on either premiums or losses.
Segment income (loss)	Determined in the same manner as core income (loss) on a segment basis. Management uses segment income (loss) to analyze each segment's performance and as a tool in making business decisions. Financial statement users also consider segment income when analyzing the results and trends of insurance companies.
Self-insured retentions	That portion of the risk retained by an insured for its own account.
Servicing carrier	An insurance company that provides, for a fee, various services including policy issuance, claims adjusting and customer service for insureds in a reinsurance pool.
Statutory accounting practices (SAP)	The practices and procedures prescribed or permitted by domiciliary state insurance regulatory authorities in the United States for recording transactions and preparing financial statements. SAP generally reflect a modified going concern basis of accounting.

35

Statutory capital and surplus	The excess of an insurance company's admitted assets over its liabilities, including loss reserves, as determined in accordance with SAP. Admitted assets are assets of an insurer prescribed or permitted by a state to be recognized on the statutory balance sheet. Statutory capital and surplus is also referred to as "statutory surplus" or "policyholders' surplus."
Statutory net income	As determined under SAP, total revenues less total expenses and income taxes.
Structured settlement	Periodic payments to an injured person or survivor for a determined number of years or for life, typically in settlement of a claim under a liability policy, usually funded through the purchase of an annuity.
Subrogation	A principle of law incorporated in insurance policies, which enables an insurance company, after paying a claim under a policy, to recover the amount of the loss from another person or entity who is legally liable for it.
Tenure impact	As new business volume increases and accounts for a greater percentage of earned premiums, the loss and LAE ratio generally worsens initially, as the loss and LAE ratio for new business is generally higher than the ratio for business that has been retained for longer periods. As poorer performing business leaves and pricing segmentation improves on renewal of the business that is retained, the loss and LAE ratio is expected to improve in future years.
Third-party liability	A liability owed to a claimant (third party) who is not one of the two parties to the insurance contract. Insured liability claims are referred to as third-party claims.
Total capitalization	The sum of total shareholders' equity and debt.
Treaty reinsurance	The reinsurance of a specified type or category of risks defined in a reinsurance agreement (a "treaty") between a primary insurer or other reinsured and a reinsurer. Typically, in treaty reinsurance, the primary insurer or reinsured is obligated to offer and the reinsurer is obligated to accept a specified portion of all that type or category of risks originally written by the primary insurer or reinsured.
Umbrella coverage	A form of insurance protection against losses in excess of amounts covered by other liability insurance policies or amounts not covered by the usual liability policies.
Unassigned surplus	The undistributed and unappropriated amount of statutory capital and surplus.
Underlying combined ratio	The underlying combined ratio is the sum of the underlying loss and LAE ratio and the underlying underwriting expense ratio. The underlying combined ratio is an indicator of the Company's underwriting discipline and underwriting profitability for the current accident year.
Underlying loss and LAE ratio	The underlying loss and LAE ratio is the loss and LAE ratio, adjusted to exclude the impact of catastrophes and prior year reserve development. The underlying loss and LAE ratio is an indicator of the Company's underwriting discipline and underwriting profitability for the current accident year.

Underlying underwriting expense ratio	The underlying underwriting expense ratio is the underwriting expense ratio adjusted to exclude the impact of catastrophes.

Underlying underwriting margin	Net earned premiums and fee income less claims and claim adjustment expenses (excluding catastrophe losses and prior year reserve development) and insurance-related expenses.
Underwriter	An employee of an insurance company who examines, accepts or rejects risks and classifies accepted risks in order to charge an appropriate premium for each accepted risk. The underwriter is expected to select business that will produce an average risk of loss no greater than that anticipated for the class of business.
Underwriting	The insurer's or reinsurer's process of reviewing applications for insurance coverage, and the decision as to whether to accept all or part of the coverage and determination of the applicable premiums; also refers to the acceptance of that coverage.
Underwriting expense ratio	For SAP, the underwriting expense ratio is the ratio of underwriting expenses incurred (including commissions paid), less certain administrative services fee income and billing and policy fees, to net written premiums as defined in the statutory financial statements required by insurance regulators. The underwriting expense ratio as used in this report is the ratio of underwriting expenses (including the amortization of deferred acquisition costs), less certain administrative services fee income, billing and policy fees and other, to net earned premiums. The underwriting expense ratio is an indicator of the Company's efficiency in acquiring and servicing its business. Other companies' method of computing a similarly titled measure may not be comparable to the Company's method of computing this ratio.
Underwriting gain or loss	Net earned premiums and fee income less claims and claim adjustment expenses and insurance-related expenses.
Unearned premium	The portion of premiums written that is allocable to the unexpired portion of the policy term.
Voluntary market	The market in which a person seeking insurance obtains coverage without the assistance of residual market mechanisms.
Wholesale broker	An independent or exclusive agent that represents both admitted and non-admitted insurers in market areas, which include standard, non-standard, specialty and excess and surplus lines of insurance. The wholesaler does not deal directly with the insurance consumer. The wholesaler deals with the retail agent or broker.
Workers' compensation	A system (established under state and federal laws) under which employers provide insurance for benefit payments to their employees for work-related injuries, deaths and diseases, regardless of fault.

Item 1A. RISK FACTORS

You should carefully consider the following risks and all of the other information set forth in this report, including without limitation our consolidated financial statements and the notes thereto and "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates."

Catastrophe losses could materially and adversely affect our results of operations, our financial position and/or liquidity, and could adversely impact our ratings, our ability to raise capital and the availability and cost of reinsurance. Our property and casualty insurance operations expose us to claims arising out of catastrophes.

Catastrophes can be caused by various natural events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, wildfires, severe winter weather, floods, tsunamis, volcanic eruptions and other naturally-occurring events, such as solar flares. Catastrophes can also be man-

made, such as terrorist attacks and other intentionally destructive acts including those involving nuclear, biological, chemical and radiological events, cyber events, explosions and destruction of infrastructure. The geographic distribution of our business subjects us to catastrophe exposures in the United States and Canada, which include, but are not limited to: hurricanes from Maine through Texas; tornadoes and hail storms throughout the Central, Mid-Atlantic and Southeastern regions of the United States; earthquakes in California, the New Madrid region and the Pacific Northwest region of North America; wildfires, particularly in western states and Canada; and terrorism in major cities in the United States. In addition to our operations in the United States and Canada, our international operations subject us to catastrophe exposures in the United Kingdom, the Republic of Ireland and Brazil as well as to a variety of worldwide catastrophe exposures through our Lloyd's operations.

The incidence and severity of catastrophes are inherently unpredictable, and it is possible that both the frequency and severity of natural and man-made catastrophic events could increase. Severe weather events over the last two decades have underscored the unpredictability of future climate trends, and potentially changing climate conditions could add to the frequency and severity of natural disasters and create additional uncertainty as to future trends and exposures. During that time period, the insurance industry experienced increased catastrophe losses due to a number of potential causal factors, including, in addition to weather/climate variability, more people living in high-risk areas, population growth in areas with weaker enforcement of building codes, urban expansion and an increase in the average size of a house. For example, hurricane activity has impacted areas further inland than previously experienced by us, and demographic changes have resulted in larger populations in coastal areas which historically have been subject to severe storms and related storm surge, thus expanding our potential for losses from hurricanes. Additionally, both the frequency and severity of tornado and hail storms in the United States have been more volatile during the last decade. The frequency and severity of wildfire losses have been elevated in more recent years. Demographic changes in areas prone to wildfires have expanded our potential for losses from wildfires. Moreover, we could experience more than one severe catastrophic event in any given period.

All of the catastrophe modeling tools that we use, or that we rely on from outside parties, to evaluate certain of our catastrophe exposures are based on assumptions and judgments that are subject to error and mis-estimation and may produce estimates that are materially different than actual results. In addition, compared to models for hurricanes, models for earthquakes are less reliable due to there being a more limited number of significant historical events to analyze, while models for tornadoes and hail storms are newer and may be even less reliable due to the highly random geographic nature and size of these events. As a result, models for earthquakes and tornado and hail storms may have even greater difficulty predicting risks and estimating losses. Further, changes in climate conditions could cause our underlying modeling data to be less predictive, thus limiting our ability to effectively evaluate and manage catastrophe risk. As compared to natural catastrophes, modeling for man-made catastrophes, such as terrorism and cyber events, is even more difficult and less reliable, and for some events (both natural and man-made), models are either in early stages of development and, therefore, not widely adopted, or are not available. See "We may be adversely affected if our pricing and capital models provide materially different indications than actual results" below as well as "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Catastrophe Modeling" and "—Changing Climate Conditions."

The extent of losses from a catastrophe is a function of the total amount of insured exposure affected by the event, the severity of the event and the coverage provided, which can be both property and casualty coverages. Increases in the value and geographic concentration of insured property, the number of policyholders exposed to certain events and the effects of inflation could increase the severity of claims from catastrophic events in the future. For example, the specific geographic location impacted by tornadoes is inherently random and unpredictable and the specific location impacted by a tornado may or may not be highly populated and may or may not have a high concentration of our insured exposures. Similarly, the potential for losses from a cyber event can be larger to the extent that the event impacts platforms, systems or vulnerabilities shared by a large number of policyholders.

States have from time to time passed legislation, and regulators have taken action, that have the effect of limiting the ability of insurers to manage catastrophe risk, such as legislation restricting insurers from reducing exposures or withdrawing from catastrophe-prone areas or mandating that insurers participate in residual markets. Participation in residual market mechanisms has resulted in, and may continue to result in, significant losses or assessments to insurers, including us, and, in certain states, those losses or assessments may not be commensurate with our direct catastrophe exposure in those states. If our competitors leave those states having residual market mechanisms, remaining insurers, including us, may be subject to significant increases in losses or assessments following a catastrophe. In addition, following catastrophes, there are sometimes legislative and administrative initiatives and court decisions that seek to expand insurance coverage for catastrophe claims beyond the original intent of the policies, seek to prevent the application of deductibles included in the policies or seek to limit the exercise of certain insurer rights available under the policies. Also, our ability to adjust terms, including deductible levels, or to increase pricing to the extent necessary to offset rising costs of catastrophes, particularly in the Personal Insurance segment, requires approval of regulatory authorities of certain states. Our ability or our willingness to manage our catastrophe exposure by raising prices, modifying underwriting terms or reducing exposure to certain geographies may be limited due to considerations of public policy, the evolving political environment and/or changes in the general economic climate. Furthermore, reduction or elimination of

the National Flood Insurance Program could result in an increase in our exposure to flood risk. We also may choose to write business in catastrophe-prone areas that we might not otherwise write for strategic purposes, such as improving our access to other underwriting opportunities.

There are also factors that impact the estimation of ultimate costs for catastrophes. For example, the estimation of claims and claim adjustment expense reserves related to hurricanes can be affected by the inability to access portions of the impacted areas, the complexity of factors contributing to the losses, the limited availability of the necessary labor and supplies, the legal and regulatory uncertainties and the nature of the information available to establish the claims and claim adjustment expense reserves. Complex factors include, but are not limited to: determining whether damage was caused by flooding versus wind; evaluating general liability and pollution exposures; estimating additional living expenses; the impact of demand surge; infrastructure disruption; fraud; the effect of mold damage; business interruption costs; late reported claims; litigation; and reinsurance collectability. The timing of a catastrophe's occurrence, such as at or near the end of a reporting period, can also affect the information available to us in estimating claims and claim adjustment expense reserves for that reporting period. The estimates related to catastrophes are adjusted in subsequent periods as actual claims emerge and additional information becomes available.

Exposure to catastrophe losses or actual losses resulting from a catastrophe could adversely affect our financial strength and claims-paying ratings and could impair our ability to raise capital on acceptable terms or at all. Also, as a result of our exposure to catastrophe losses or actual losses following a catastrophe, rating agencies may further increase capital requirements, which may require us to raise capital to maintain our ratings. A ratings downgrade could hurt our ability to compete effectively or attract new business. In addition, catastrophic events could cause us to exhaust our available reinsurance limits and could adversely impact the cost and availability of reinsurance on a going-forward basis. Such events can also impact the credit of our reinsurers. For a discussion of our catastrophe reinsurance coverage, see "Item 1—Business—Reinsurance—Catastrophe Reinsurance." Catastrophic events could also adversely impact the credit of the issuers of securities, such as states or municipalities, in which we have invested.

In addition, coverage in our reinsurance program for terrorism is limited. Although the Terrorism Risk Insurance Program provides benefits in the event of certain acts of terrorism, those benefits are subject to a deductible and other limitations and the program is scheduled to expire on December 31, 2020. Under current provisions of this program, once our losses exceed 20% of our commercial property and casualty insurance premium for the preceding calendar year, the federal government will reimburse us for 81% of our losses attributable to certain acts of terrorism which exceed this deductible up to a total industry program cap of $100 billion. Our estimated deductible under the program is $2.52 billion for 2019. The federal government reimbursement percentage will fall from 81% to 80% in 2020. In addition, because the interpretation of this law is untested, there is substantial uncertainty as to how it will be applied to specific circumstances. For example, application of the law to a specific event will depend upon whether the government has designated such event as a covered event. It is also possible that future legislation could change or eliminate the program, which could adversely affect our business by increasing our exposure to terrorism losses, or by lowering our business volume through efforts to avoid that exposure. For a further description of the Terrorism Risk Insurance Program, see note 5 of notes to the consolidated financial statements.

Because of the risks set forth above, catastrophes such as those caused by various natural or man-made events, such as a terrorist attack or other intentionally destructive acts, including those involving nuclear, biological, chemical or radiological events or cyber events, could materially and adversely affect our results of operations, financial position and/or liquidity. Further, we may not have sufficient resources to respond to claims arising from a high frequency of high-severity natural catastrophes and/or of man-made catastrophic events involving conventional means. In addition, while we seek to manage our exposure to man-made catastrophic events involving conventional means, we may not have sufficient resources to respond to claims arising out of one or more man-made catastrophic events involving "unconventional" means, such as nuclear, biological, chemical or radiological events.

If actual claims exceed our claims and claim adjustment expense reserves, or if changes in the estimated level of claims and claim adjustment expense reserves are necessary, including as a result of, among other things, changes in the legal, regulatory and economic environments in which the Company operates, our financial results could be materially and adversely affected. Claims and claim adjustment expense reserves do not represent an exact calculation of liability, but instead represent management estimates of what the ultimate settlement and administration of claims will cost, generally utilizing actuarial expertise and projection techniques, at a given accounting date.

The process of estimating claims and claim adjustment expense reserves involves a high degree of judgment and is subject to a number of variables. These variables can be affected by both internal and external events, such as: changes in claims handling procedures; adverse changes in loss cost trends, including inflationary pressures and technology changes which may impact medical, auto and home repair costs; economic conditions, including general and wage inflation; legal trends, including social inflation (increased litigation, expanded theories of liability and higher jury awards); and legislative changes, among others. The

impact of many of these items on ultimate costs for claims and claim adjustment expenses is difficult to estimate and could be material. Claims and claim adjustment expense reserve estimation difficulties also differ significantly by product line due to differences in claim complexity, the volume of claims, the potential severity of individual claims, the determination of occurrence date for a claim and reporting lags (the time between the occurrence of the policyholder event and when it is actually reported to the insurer).

It is possible that, among other things, past or future steps taken by the federal government and the Federal Reserve to stimulate the U.S. economy, including actions to manage interest rates, tax reform, the imposition of tariffs and other changes in international trade regulation, could lead to higher inflation than we had anticipated, which could in turn lead to an increase in our loss costs. The impact of inflation on loss costs could be more pronounced for those lines of business that are considered “long tail,” such as general liability, as they require a relatively long period of time to finalize and settle claims for a given accident year. In addition, a significant portion of claims costs, including those in “long tail” lines of business, consists of medical costs. Changes in healthcare legislation could significantly impact the availability, cost and allocation of payments for medical services, and it is possible that, as a result, inflationary pressures in medical costs may increase or claim frequency and/or severity may otherwise be adversely impacted. The estimation of claims and claim adjustment expense reserves may also be more difficult during times of adverse or uncertain economic conditions due to unexpected changes in behavior of claimants and policyholders, including an increase in fraudulent reporting of exposures and/or losses, reduced maintenance of insured properties, increased frequency of small claims or delays in the reporting of claims. In addition, the estimation of claims and claim adjustment expense reserves may be influenced by other external factors, including increased attorney involvement in insurance claims.

We continually refine our claims and claim adjustment expense reserve estimates in a regular, ongoing process as historical loss experience develops, additional claims are reported and settled, and the legal, regulatory and economic environment evolves. Business judgment is applied throughout the process, including the application of various individual experiences and expertise to multiple sets of data and analyses. Different experts may choose different assumptions when faced with material uncertainty, based on their individual backgrounds, professional experiences and areas of focus. Hence, such experts may at times produce estimates materially different from each other. This risk may be exacerbated in the context of an acquisition. Experts providing input to the various estimates and underlying assumptions include actuaries, underwriters, claim personnel and lawyers, as well as other members of management. Therefore, management may have to consider varying individual viewpoints as part of its estimation of claims and claim adjustment expense reserves.

We attempt to consider all significant facts and circumstances known at the time claims and claim adjustment expense reserves are established or reviewed. Due to the inherent uncertainty underlying claims and claim adjustment expense reserve estimates, the final resolution of the estimated liability for claims and claim adjustment expenses will likely be higher or lower than the related claims and claim adjustment expense reserves at the reporting date. Therefore, actual paid losses in the future may yield a materially different amount than is currently reserved.

Because of the uncertainties set forth above, additional liabilities resulting from one insured event, or an accumulation of insured events, may exceed the current related reserves. In addition, our estimate of claims and claim adjustment expenses may change. These additional liabilities or increases in estimates, or a range of either, could vary significantly from period to period, cannot now be reasonably estimated and could materially and adversely affect our results of operations and/or our financial position.

For a discussion of claims and claim adjustment expense reserves by product line, including examples of common factors that can affect required reserves, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates—Claims and Claim Adjustment Expense Reserves."

During or following a period of financial market disruption or an economic downturn, our business could be materially and adversely affected. Worldwide financial markets and economic conditions have, from time to time, experienced significant disruption or deterioration and likely will experience periods of disruption or deterioration in the future. If financial markets experience significant disruption or if economic conditions deteriorate, our results of operations, financial position and/or liquidity likely would be adversely impacted. For example, financial market disruptions and economic downturns in the past have resulted in, among other things, reduced business volume, as well as heightened credit risk and reduced valuations for certain of our investments. An inflationary environment, as a result of government efforts to stabilize the economy after a disruption or otherwise, may also, as we discuss in risk factors above and below, adversely impact our loss costs and the valuation of our investment portfolio.

Financial market disruption or an economic downturn could be exacerbated by actual or potential economic and geopolitical instability in many regions of the world. This can impact our business even if we do not conduct business in the region subject to the instability. For example, due to globalization, instability in one region can spread to other regions where we do business.

The United Kingdom's withdrawal from the European Union could have a negative impact on economic conditions in the United Kingdom and could result in unintended consequences in other countries as well. In the United States, actions or inactions of the United States government may also impact economic conditions. For example, actions that may be taken with respect to fiscal stimulus programs, a government shutdown, the debt ceiling, the Federal budget, international trade and tariffs, interest rates, the Affordable Care Act, tax laws and regulation generally, among other things, may contribute, positively or negatively, to economic conditions generally and create economic and fiscal uncertainty.

Several of the risk factors discussed above and below identify risks that could result from, or be exacerbated by, financial market disruption, an economic slowdown or economic uncertainty. These include risks discussed above related to our estimates of claims and claim adjustment expense reserves, and those discussed below related to our investment portfolio, the competitive environment, emerging claim and coverage issues, reinsurance arrangements, other credit exposures, regulatory developments and the impact of rating agency actions. You should also refer to "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations," particularly the "Outlook" section, for additional information about these risks and the potential impact on our business.

Our investment portfolio is subject to credit and interest rate risk, and may suffer reduced or low returns or material realized or unrealized losses. Investment returns are an important part of our overall profitability. Fixed maturity and short-term investments comprised approximately 93% of the carrying value of our investment portfolio as of December 31, 2018. Changes in interest rates caused by inflation or other factors (inclusive of credit spreads) affect the carrying value of our fixed maturity investments and returns on our fixed maturity and short-term investments. A decline in interest rates reduces the returns available on short-term investments and new fixed maturity investments (including those purchased to re-invest maturities from the existing portfolio), thereby negatively impacting our net investment income, while rising interest rates reduce the market value of existing fixed maturity investments, thereby negatively impacting our book value. At December 31, 2018, the net pre-tax unrealized loss in our fixed income portfolio was $137 million, compared to a pre-tax unrealized gain of $1.38 billion at December 31, 2017, as interest rates increased. Any future increases in interest rates (inclusive of credit spreads) would result in an increase in that unrealized loss position, thereby adversely impacting our book value. Despite the increase in interest rates in 2018, rates remain at very low levels relative to historical experience, and it is possible that rates may remain at low levels for a prolonged period. The value of our fixed maturity and short-term investments is also subject to the risk that certain investments may default or become impaired due to a deterioration in the financial condition of one or more issuers of the securities held in our portfolio, or due to a deterioration in the financial condition of an insurer that guarantees an issuer's payments of such investments. Such defaults and impairments could reduce our net investment income and result in realized investment losses. During an economic downturn, fixed maturity and short-term investments could be subject to a higher risk of default, and our non-fixed income investments could be negatively impacted as well. Rapid changes in commodity prices, such as a significant decline in oil prices, could also subject certain of our investments to a higher risk of default.
Our fixed maturity investment portfolio is invested, in substantial part, in obligations of states, municipalities and political subdivisions (collectively referred to as the municipal bond portfolio). Notwithstanding the relatively low historical rates of default on many of these obligations and notwithstanding that we typically seek to invest in high-credit-quality securities (including those with structural protections such as being secured by dedicated or pledged sources of revenue), our municipal bond portfolio could be subject to default or impairment. In particular:

- In recent years, many state and local governments have been operating under deficits or projected deficits. The severity and duration of these deficits could have an adverse impact on the collectability and valuation of our municipal bond portfolio. These deficits may be exacerbated by the impact of unfunded pension plan obligations and other postretirement obligations or by declining municipal tax bases and revenues in times of financial stress. The recent tax reform also could lead state and local governments to decrease taxes, which could result in a deterioration of the credit quality of these state and local governments.

- Some municipal bond issuers may be unwilling to increase tax rates, particularly in light of the recent tax reform, or to reduce spending, to fund interest or principal payments on their municipal bonds, or may be unable to access the municipal bond market to fund such payments. The risk of widespread defaults may increase if some issuers voluntarily choose to default, instead of implementing difficult fiscal measures, and the actual or perceived consequences (such as reduced access to capital markets) are less severe than expected.
- The risk of widespread defaults may also increase if there are changes in legislation that permit states, municipalities and political subdivisions to file for bankruptcy protection where they were not permitted before. In addition, the collectability and valuation of municipal bonds may be adversely affected if there are judicial interpretations in a bankruptcy or other proceeding that lessen the value of structural protections. For example, debtors may challenge the effectiveness of structural protections thought to be provided by municipal securities backed by a dedicated source of

revenue. The collectability and valuation may also be adversely affected if there are judicial interpretations in a bankruptcy or other proceeding that question the payment priority of municipal bonds.
Approximately 30% of the fixed maturity portfolio is expected to mature over the next three years (this includes the early redemption of bonds, assuming interest rates (including credit spreads) do not rise significantly by applicable call dates). As a result, even if our investment strategy does not significantly change over the next few years, the overall yield on and composition of our portfolio could be meaningfully impacted by the types of investments available for reinvestment with the proceeds of matured bonds. For example, if yields decrease when we reinvest such proceeds, our future net investment income would be adversely affected. In addition, depending on the specific bonds available for purchase at the time of re-investment, the mix of specific issuers in our fixed-income and municipal bond portfolio will change.

Our portfolio has benefited from tax exemptions (such as those related to interest from municipal bonds) and certain other tax laws, including, but not limited to, those governing dividends-received deductions and tax credits. Changes in these laws could adversely impact the value of our investment portfolio. See “Changes in U.S. tax laws or in the tax laws of other jurisdictions in which we operate could adversely impact us” below.

Our investment portfolio includes: residential mortgage-backed securities; collateralized mortgage obligations; pass-through securities and asset-backed securities collateralized by sub-prime mortgages; commercial mortgage-backed securities; and wholly-owned real estate and real estate partnerships, all of which could be adversely impacted by declines in real estate valuations and/or financial market disruption.

We also invest a portion of our assets in equity securities, private equity limited partnerships, hedge funds and real estate partnerships. From time to time, we may also invest in other types of non-fixed maturity investments, including investments with exposure to commodity price risk, such as oil. All of these asset classes are subject to greater volatility in their investment returns than fixed maturity investments. General economic conditions, changes in applicable tax laws and many other factors beyond our control can adversely affect the value of our non-fixed maturity investments and the realization of net investment income, and/or result in realized investment losses. As a result of these factors, we may realize reduced returns on these investments, incur losses on sales of these investments and be required to write down the value of these investments, which could reduce our net investment income and result in realized investment losses. From time to time, the Company enters into short positions in U.S. Treasury futures contracts to manage the duration of its fixed maturity portfolio, which can result in realized investment losses.

Our investment portfolio is also subject to increased valuation uncertainties when investment markets are illiquid. The valuation of investments is more subjective when markets are illiquid, thereby increasing the risk that the estimated fair value (i.e., the carrying amount) of the portion of the investment portfolio that is carried at fair value as reflected in our financial statements is not reflective of prices at which actual transactions could occur.

We may, depending on circumstances in the future, including as a result of changes in economic and market conditions, make changes to the mix of investments in our investment portfolio as part of our ongoing efforts to seek appropriate risk-adjusted returns. These changes may impact the duration, volatility and risk of our investment portfolio. For example, the percentage of our investment portfolio consisting of tax-exempt municipal bonds has decreased from 42% to 39% in the past year due, in part, to the impact of the Tax Cuts and Jobs Act of 2017 on the municipal bond market.

Because of the risks set forth above, the value of our investment portfolio could decrease, we could experience reduced net investment income and we could experience realized and/or unrealized investment losses, which could materially and adversely affect our results of operations, financial position and/or liquidity.

Our business could be harmed because of our potential exposure to asbestos and environmental claims and related litigation. With regard to asbestos claims, we have received and continue to receive a significant number of asbestos claims. Factors underlying these claim filings include continued intensive advertising by lawyers seeking asbestos claimants and the continued focus by plaintiffs on defendants who were not traditionally primary targets of asbestos litigation. The focus on these defendants is primarily the result of the number of traditional asbestos defendants who have sought bankruptcy protection in previous years. The bankruptcy of many traditional defendants has also caused increased settlement demands against those policyholders who are not in bankruptcy but remain in the tort system. Currently, in many jurisdictions, those who allege very serious injury and who can present credible medical evidence of their injuries are receiving priority trial settings in the courts, while those who have not shown any credible disease manifestation are having their hearing dates delayed or placed on an inactive docket. This trend of prioritizing claims involving credible evidence of injuries, along with the focus on defendants who were

not traditionally primary targets of asbestos litigation, has contributed to the claims and claim adjustment expense payments we experienced.

We also continue to be involved in coverage litigation concerning a number of policyholders, some of whom have filed for bankruptcy, who in some instances have asserted that all or a portion of their asbestos-related claims are not subject to aggregate limits on coverage. In these instances, policyholders also may assert that each individual bodily injury claim should be treated as a separate occurrence under the policy. It is difficult to predict whether these policyholders will be successful on both issues. To the extent both issues are resolved in a policyholder's favor and our other defenses are not successful, our coverage obligations under the policies at issue would be materially increased and bounded only by the applicable per-occurrence limits and the number of asbestos bodily injury claims against the policyholders. Although we have seen a moderation in the overall risk associated with these lawsuits, it remains difficult to predict the ultimate cost of these claims.

Further, in addition to claims against policyholders, proceedings have been launched directly against insurers, including us, by individuals challenging insurers' conduct with respect to the handling of past asbestos claims and by individuals seeking damages arising from alleged asbestos-related bodily injuries. It is possible that the filing of other direct actions against insurers, including us, could be made in the future. It is difficult to predict the outcome of these proceedings, including whether the plaintiffs will be able to sustain these actions against insurers based on novel legal theories of liability.

With regard to environmental claims, we have received and continue to receive claims from policyholders who allege that they are liable for injury or damage arising out of their alleged disposition of toxic substances. Mostly, these claims arise under various legislative as well as regulatory efforts aimed at environmental remediation. For instance, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), enacted in 1980 and later modified, enables private parties as well as federal and state governments to take action with respect to releases and threatened releases of hazardous substances. This federal statute permits the recovery of response costs from some liable parties and may require liable parties to undertake their own remedial action. Liability under CERCLA and similar state laws may be imposed on certain parties even if they did not cause the release or threatened release of hazardous substances and may be joint and several with other responsible parties.

The Company has been, and continues to be, involved in litigation involving insurance coverage issues pertaining to asbestos and environmental claims. The Company believes that some court decisions have interpreted the insurance coverage to be broader than the original intent of the insurers and policyholders. These decisions continue to be inconsistent and vary from jurisdiction to jurisdiction.

Uncertainties surrounding the final resolution of these asbestos and environmental claims continue, and it is difficult to estimate our ultimate liability for such claims and related litigation. As a result, these reserves are subject to revision as new information becomes available and as claims develop. The continuing uncertainties include, without limitation:

- the risks and lack of predictability inherent in complex litigation;
- a further increase in the cost to resolve, and/or the number of, asbestos and environmental claims beyond that which is anticipated;
- the emergence of a greater number of asbestos claims than anticipated as a result of extended life expectancies resulting from medical advances and lifestyle improvements;
- the role of any umbrella or excess policies we have issued;
- the resolution or adjudication of disputes concerning coverage for asbestos and environmental claims in a manner inconsistent with our previous assessment of these disputes;
- the number and outcome of direct actions against us;

- future developments pertaining to our ability to recover reinsurance for asbestos and environmental claims;
- any impact on asbestos defendants we insure due to the bankruptcy of other asbestos defendants;
- the unavailability of other insurance sources potentially available to policyholders, whether through exhaustion of policy limits or through the insolvency of other participating insurers; and
- uncertainties arising from the insolvency or bankruptcy of policyholders.

It is also not possible to predict changes in the legal, regulatory and legislative environment and their impact on the future development of asbestos and environmental claims. This environment could be affected by changes in applicable legislation and future court and regulatory decisions and interpretations, including the outcome of legal challenges to legislative and/or judicial reforms establishing medical criteria for the pursuit of asbestos claims. It is also difficult to predict the ultimate outcome of complex coverage disputes until settlement negotiations near completion and significant legal questions are resolved or, failing settlement, until the dispute is adjudicated. This is particularly the case with policyholders in bankruptcy where negotiations often involve a large number of claimants and other parties and require court approval to be effective.

While the ongoing evaluation of asbestos and environmental claims and associated liabilities considers the inconsistencies of court decisions as to coverage, plaintiffs' expanded theories of liability and the risks inherent in complex litigation and other uncertainties, it is possible that the outcome of the continued uncertainties regarding these claims could result in liability in future periods that differs from current reserves by an amount that could materially and adversely affect our results of operations. See the "Asbestos Claims and Litigation" and "Environmental Claims and Litigation" sections of "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations." Also see "Item 3—Legal Proceedings."

The intense competition that we face, and the impact of innovation, technological change and changing customer preferences on the insurance industry and the markets in which we operate, could harm our ability to maintain or increase our business volumes and our profitability. The property and casualty insurance industry is highly competitive, and we believe that it will remain highly competitive for the foreseeable future. We compete with both domestic and foreign insurers, including an increasing number of start-ups, which may offer products at prices and on terms that are not consistent with our economic standards in an effort to maintain or increase their business. The competitive environment in which we operate could also be impacted by current general economic conditions, which could reduce the volume of business available to us as well as to our competitors. In recent years, pension and hedge funds and other entities with substantial available capital and potentially lower return objectives have increasingly sought to participate in the property and casualty insurance and reinsurance businesses. Well-capitalized new entrants to the property and casualty insurance and reinsurance industries, existing competitors that receive substantial infusions of capital, as well as competitors that can take advantage of more favorable tax domiciles than the United States, may conduct business in ways that adversely impact our business volumes and profitability. Further, an expanded supply of reinsurance capital may lower costs for insurers that rely significantly on reinsurance and, as a consequence, those insurers may be able to price their products more competitively. In addition, the competitive environment could be impacted by changes in customer preferences, including customer demand for direct distribution channels and/or greater choice, not only in personal lines (where we currently and may increasingly compete against direct writers), but also in commercial lines (where direct writers may become a more significant source of competition in the future, particularly in the small commercial market). Similarly, customer behavior could evolve in the future towards buying insurance in point-of-sale distribution channels where we do not currently have a meaningful presence. Consolidation within the insurance industry also could alter the competitive environment in which we operate, which may impact our business volumes and/or the rates or terms of our products.

In Personal Insurance, the use of comparative rating technologies has impacted, and may continue to impact, our business as well as the industry as a whole. A substantial amount of the Company's Personal Insurance new business is written after an agent compares quotes using comparative rating technologies, a cost-efficient means of obtaining quotes from multiple companies. Because the use of this technology, whether by agents or directly by customers, facilitates the process of generating multiple quotes, the technology has increased price comparison on new business and, increasingly, on renewal business. It also has resulted in an increase in the level of quote activity and a lower percentage of quotes that result in new business from customers, and these trends may continue or accelerate. If we are not able to operate with a competitive cost structure or accurately estimate and price for claims and claim adjustment expenses, our business volume and underwriting margins could be adversely affected over time. Additionally, similar technology is starting to be used to access comparative rates for small commercial business and that trend is likely to continue and may accelerate. In recent years, there have been new entrants into the small commercial insurance business and this trend may continue.

Technology companies or other third parties have created, and may in the future create, digitally-enabled business models, platforms or alternate distribution channels for personal or commercial business that may adversely impact our competitive position. These technology companies or other third parties may compete with us directly by providing, or arranging to provide, insurance coverage themselves. See also "Disruptions to our relationships with our

independent agents and brokers could adversely affect us" below.

Other technological changes also present competitive risks. For example, innovations, such as telematics and other usage-based methods of determining premiums, can impact product design and pricing and may become an increasingly important competitive factor. In addition, our competitive position could be impacted if we are unable to deploy, in a cost effective manner, technology that collects and analyzes a wide variety of data points (so-called "big data" analysis) to make underwriting or other decisions, or if our competitors collect and use data which we do not have the ability to access or use, or are able to use such data more efficiently and/or effectively than we are able to. See also "Our business success and profitability depend, in part, on effective information technology systems and on continuing to develop and implement improvements in technology, particularly as our business processes become more digital" below.

Competitive dynamics may impact the success of efforts to improve our underwriting margins on our insurance products. These efforts could include seeking improved rates, as well as improved terms and conditions, and could also include other initiatives, such as reducing operating expenses and acquisition costs. These efforts may not be successful and/or may result in lower retention

and new business levels and therefore lower business volumes. In addition, if our underwriting is not effective, further efforts to increase rates could also lead to “adverse selection”, whereby accounts retained have higher losses, and are less profitable, than accounts lost. For more detail, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Outlook."

Similar to other industries, the insurance industry is undergoing rapid and significant technological and other change. Traditional insurance industry participants, technology companies, “InsurTech” start-up companies, the number of which has increased significantly in recent years and some of which are supported by traditional insurance industry participants, and others are focused on using technology and innovation to simplify and improve the customer experience, increase efficiencies, redesign products, alter business models and effect other potentially disruptive changes in the insurance industry. If we do not anticipate, keep pace with and adapt to technological and other changes impacting the insurance industry, it will harm our ability to compete, decrease the value of our products to customers, and materially and adversely affect our business. Furthermore, innovation, technological change and changing customer preferences in the markets in which we operate also pose risks to our business. For example, technologies such as driverless vehicles, assisted-driving or accident prevention technologies, technologies that facilitate ride or home sharing, smart homes or automation could reduce the number of vehicles in use and/or the demand for, or profitability of, certain of our products, create coverage issues or impact the frequency or severity of losses, and we may not be able to respond effectively.

Overall, our competitive position in our various businesses is based on many factors, including but not limited to our:

- ability to profitably price our business, retain existing customers and obtain new business;
- premiums charged, contract terms and conditions, products and services offered (including the ability to design customized programs);
- agent, broker and policyholder relationships;
- ability to keep pace relative to our competitors with changes in technology and information systems;
- effectiveness of our claims process, including the speed of payment;
- ability to avoid and mitigate fraudulent claims;
- ability to provide our products and services in a cost effective manner;
- ability to provide new products and services to meet changing customer needs;
- ability to adapt to changes in business models, technology, customer preferences or regulation impacting the markets in which we operate;
- ability to provide access to the distribution channels preferred by customers and prospective customers;
- perceived overall financial strength and corresponding ratings assigned by independent rating agencies;
- reputation, experience and qualifications of employees;
- geographic scope of business; and
- local presence.

We may have difficulty in continuing to compete successfully on any of these bases in the future. If competition or technological or other changes to the markets in which we operate limit our ability to retain existing business or write new business at adequate rates or on appropriate terms, our results of operations could be materially and adversely affected. See "Competition" sections of the discussion on business segments in "Item 1—Business."

Disruptions to our relationships with our independent agents and brokers or our inability to manage effectively a changing distribution landscape could adversely affect us. We market our insurance products primarily through independent agents and brokers. An important part of our business is written through less than a dozen such intermediaries, as well as other insurance carriers such as GEICO with which we have had a marketing arrangement for homeowners' business since 1995. Further, there has been a trend of increased consolidation by agents and brokers, which could impact our relationships with, and fees paid to, some agents and brokers, and/or otherwise

negatively impact the pricing or distribution of our products. Agents and brokers may increasingly compete with us to the extent that markets increasingly provide them with direct access to providers of capital seeking exposure to insurance risk or if they become affiliated with carriers that compete with us. See also “The intense competition that we face could harm our ability to maintain or increase our business volumes and our profitability.” In all of the foregoing situations, loss of all or a substantial portion of the business provided through such agents and brokers could materially and adversely affect our future business volume and results of operations.

We may also seek to develop new products or distribution channels, which could disrupt our relationships with our agents and brokers. In addition, agents and brokers may create alternate distribution channels for commercial business that may adversely impact product differentiation and pricing. Access to greater levels of data and increased utilization of technology by agents and brokers may also impact our relationship with them and our competitive position. Our efforts or their efforts with respect to new

products or alternate distribution channels, as well as changes in the way agents and brokers utilize data and technology, could adversely impact our business relationship with independent agents and brokers who currently market our products, resulting in a lower volume and/or profitability of business generated from these sources.

In certain markets, brokers increasingly have been packaging portfolios of risks together and offering them to fewer carriers as well as, in some cases, requesting a commitment to participate in such portfolios in advance. In these and other situations, agents and brokers have an increased influence over policy language and compensation structure which, if we participate on that basis, could adversely impact our ability to profitably manage underwriting risk. It could also lead to commoditization of products, which could increase the focus on price and cost management and decrease our ability to differentiate our products in the marketplace with customers based on other factors.

We rely on internet applications for the marketing and sale of certain of our products, and we may increasingly rely on internet applications and toll-free numbers for distribution. In some instances, our agents and brokers are required to access separate business platforms to execute the sale of our personal insurance or commercial insurance products. Should internet disruptions occur, or frustration with our business platforms or distribution initiatives develop among our independent agents and brokers, any resulting loss of business could materially and adversely affect our future business volume and results of operations. See “If we experience difficulties with technology, data and network security (including as a result of cyber attacks), outsourcing relationships or cloud-based technology, our ability to conduct our business could be negatively impacted” below.

Customers in the past have brought claims against us for the actions of our agents. Even with proper controls in place, actual or alleged errors or inaccuracies by our agents could result in our involvement in disputes, litigation or regulatory actions related to actions taken or not taken by our agents.

We are exposed to, and may face adverse developments involving, mass tort claims such as those relating to exposure to potentially harmful products or substances. In addition to asbestos and environmental claims, we face potential exposure to other types of mass tort claims, including claims related to exposure to potentially harmful products or substances, such as lead paint, silica, talc and opioids. Establishing claims and claim adjustment expense reserves for mass tort claims is subject to uncertainties because of many factors, including expanded theories of liability, disputes concerning medical causation with respect to certain diseases, geographical concentration of the lawsuits asserting the claims and the potential for a large rise in the total number of claims without underlying epidemiological developments suggesting an increase in disease rates. Moreover, evolving judicial interpretations regarding the application of various tort theories and defenses, including application of various theories of joint and several liabilities, as well as the application of insurance coverage to these claims, make it difficult to estimate our ultimate liability for such claims.

Because of the uncertainties set forth above, additional liabilities may arise for amounts in excess of the current related reserves. In addition, our estimate of claims and claim adjustment expenses may change, and such change could be material. These additional liabilities or increases in estimates, or a range of either, cannot now be reasonably estimated and could materially and adversely affect our results of operations.

The effects of emerging claim and coverage issues on our business are uncertain. As industry practices and legal, judicial, social and other environmental conditions change, unexpected and unintended issues related to claim and coverage may emerge. These issues may adversely affect our business, including by extending coverage beyond our underwriting intent, by increasing the number, size or types of claims or by mandating changes to our underwriting practices. Examples of such claims and coverage issues include, but are not limited to:

•judicial expansion of policy coverage and the impact of new or expanded theories of liability;
•

plaintiffs targeting property and casualty insurers, including us, in purported class action litigation relating to claims-handling and other practices;

- claims relating to construction defects, which often present complex coverage and damage valuation questions;
- claims under directors' & officers' and/or errors and omissions insurance policies relating to losses from involvement in financial market activities; failed financial institutions; fraud; improper sales practices; anti-trust allegations; possible accounting irregularities; and corporate governance issues;
- claims related to data and network security breaches, information system failures or cyber events, particularly as the "internet of things" becomes more prevalent, including cases where coverage was not intended to be provided;
- the assertion of "public nuisance" or similar theories of liability, pursuant to which plaintiffs seek to recover monies spent to administer public health care programs, abate hazards to public health and safety and/or recover damages purportedly attributable to a "public nuisance";
- claims related to liability or workers' compensation arising out of the spread of infectious disease or pandemic;

- claims relating to abuse by an employee or a volunteer of an insured;
- claims that link health issues to particular causes (for example, cumulative traumatic head injury from sports or other causes), resulting in liability or workers' compensation claims;
- claims alleging that one or more of our underwriting criteria have a disparate impact on persons belonging to a protected class in violation of the law, including the Fair Housing Act;
- claims arising out of modern techniques and practices used in connection with the extraction of natural resources, such as hydraulic fracturing or wastewater injection;
- claims arising out of the use of personal cars, homes or other property in commercial transactions, such as ride or home sharing;
- claims relating to unanticipated consequences of current or new technologies or business models or processes, including as a result of related behavioral changes; and
- claims relating to potentially changing climate conditions, including higher frequency and severity of weather- related events.

In some instances, these emerging issues may not become apparent for some time after we have issued the affected insurance policies. As a result, the full extent of liability under our insurance policies may not be known for many years after the policies are issued.

In addition, the passage of new legislation designed to expand the right to sue, to remove limitations on recovery, to deem by statute the existence of a covered occurrence, to extend the statutes of limitations or otherwise to repeal or weaken tort reforms could have an adverse impact on our business. For example, the enactment by states of "reviver statutes," including the Child Victims Act which the governor of New York is expected to sign into law in the near future, would allow civil claims to be brought in court that otherwise would have been barred by prior applicable statutes of limitations. Other states are also considering similar legislative changes.

The effects of these and other unforeseen emerging claim and coverage issues are extremely hard to predict and could harm our business and materially and adversely affect our results of operations.

We may not be able to collect all amounts due to us from reinsurers, reinsurance coverage may not be available to us in the future at commercially reasonable rates or at all and we are exposed to credit risk related to our structured settlements. Although the reinsurer is liable to us to the extent of the ceded reinsurance, we remain liable as the direct insurer on all risks reinsured. As a result, ceded reinsurance arrangements do not eliminate our obligation to pay claims. Accordingly, we are subject to credit risk with respect to our ability to recover amounts due from reinsurers.

In the past, certain reinsurers have ceased writing business and entered into runoff. Some of our reinsurance claims may be disputed by the reinsurers, and we may ultimately receive partial or no payment. This is a particular risk in the case of claims that relate to insurance policies written many years ago, including those relating to asbestos and environmental claims. In addition, in a number of jurisdictions, particularly the European Union and the United Kingdom as well as a small number of U.S. states, a reinsurer is permitted to transfer a reinsurance arrangement to another reinsurer, which may be less creditworthy, without a counterparty's consent, provided that the transfer has been approved by the applicable regulatory and/or court authority.

Included in reinsurance recoverables are amounts related to certain structured settlements. Structured settlements are annuities purchased from various life insurance companies to settle certain personal physical injury claims, of which workers' compensation claims comprise a significant portion. In cases where we did not receive a release from the claimant, the structured settlement is included in reinsurance recoverables and the related claim cost is included in the liability for claims and claim adjustment expense reserves, as we retain the contingent liability to the claimant. Some of the life insurance companies from which we have purchased structured settlements have been downgraded to below investment grade credit ratings subsequent to the time of the purchase. If it is expected that the life insurance company

is not able to pay, we would recognize an impairment of the related reinsurance recoverable if, and to the extent, the purchased annuities are not covered by state guaranty associations. In the event that the life insurance company fails to make the required annuity payments, we would be required to make such payments. For a discussion of our top reinsurance groups by reinsurance recoverable and the top five groups by amount of structured settlements provided, see "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Reinsurance Recoverables."

The availability and cost of reinsurance are subject to prevailing market conditions, both in terms of price and available capacity. The availability of reinsurance capacity can be impacted by general economic conditions and conditions in the reinsurance market, such as the occurrence of significant reinsured events. The availability and cost of reinsurance could affect our business volume and profitability. In addition, the Covered Agreements between the U.S. and each of the EU and U.K. eliminate the requirement

for European and U.K. reinsurers operating in the U.S. to provide collateral in connection with reinsurance agreements, which could make it more difficult for U.S. companies, including us, to obtain sufficient collateral, if any, in such reinsurance arrangements.

Because of the risks set forth above, we may not be able to collect all amounts due to us from reinsurers, and reinsurance coverage may not be available to us in the future at commercially reasonable rates or at all, and/or life insurance companies may fail to make required annuity payments, and thus our results of operations could be materially and adversely affected.

We are also exposed to credit risk in certain of our insurance operations and with respect to certain guarantee or indemnification arrangements that we have with third parties. In addition to exposure to credit risk related to our investment portfolio and reinsurance recoverables (discussed above), we are exposed to credit risk in several other areas of our business operations, including credit risk relating to policyholders, independent agents and brokers.

We are exposed to credit risk in our surety insurance operations, where we guarantee to a third party that our customer will satisfy certain performance obligations (e.g., a construction contract) or certain financial obligations, including exposure to large customers who may have obligations to multiple third parties. If our customer defaults, we may suffer losses and not be reimbursed by that customer, even though we are entitled to indemnification from such customer. In addition, it is customary practice in the surety business for multiple insurers to participate as co-sureties on large surety bonds. Under these arrangements, the co-surety obligations are typically joint and several, in which case we are also exposed to credit risk with respect to our co-sureties.

In addition, a portion of our business is written with large deductible insurance policies. Under casualty insurance contracts with deductible features, we are obligated to pay the claimant the full amount of the settled claim. We are subsequently reimbursed by the contractholder for the deductible amount, and, as a result, we are exposed to credit risk to the policyholder. Moreover, certain policyholders purchase retrospectively rated workers' compensation and/or general liability policies (i.e., policies in which premiums are adjusted after the policy period based on the actual loss experience of the policyholder during the policy period). Retrospectively rated policies expose us to additional credit risk to the extent that the adjusted premium is greater than the original premium.

Our efforts to mitigate the credit risk that we have to our insureds may not be successful. To reduce such credit risk, we require certain insureds to post collateral for some or all of these obligations, often in the form of pledged securities such as money market funds or letters of credit provided by banks, surety bonds or cash. In cases where we receive pledged securities and the insureds are unable to honor their obligations, we may be exposed to credit risk on the securities pledged and/or the risk that our access to that collateral may be stayed during an insured's bankruptcy. In cases where we receive letters of credit from banks and the insureds are unable to honor their obligations, we are exposed to the credit risk of the banks that issued the letters of credit.

In accordance with industry practice, when policyholders purchase insurance policies from us through independent agents and brokers, the premiums relating to those policies are often paid to the agents and brokers for payment to us. In most jurisdictions, the premiums will be deemed to have been paid to us whether or not they are actually received by us. Consequently, we assume a degree of credit risk associated with amounts due from independent agents and brokers.

To a large degree, the credit risk we face is a function of the economy; accordingly, we face an increased credit risk in an economic downturn. While we attempt to manage the risks discussed above through underwriting guidelines, collateral requirements and other oversight mechanisms, our efforts may not be successful. For example, collateral obtained may subsequently have little or no value. Further, the amount of collateral protection we have been able to obtain on the business we write in certain markets has decreased, and may continue to decrease, as a result of

competition. We are also exposed to credit risk related to certain guarantee or indemnification arrangements that we have with third parties. See note 16 of notes to the consolidated financial statements. As a result, our exposure to the above credit risks could materially and adversely affect our results of operations.

Within the United States, our businesses are heavily regulated by the states in which we conduct business, including licensing, market conduct and financial supervision, and changes in regulation may reduce our profitability and limit our growth. These regulatory systems are generally designed to protect the interests of policyholders, and not necessarily the interests of insurers, their shareholders and other investors. For example, to protect policyholders whose insurance company becomes financially insolvent, guaranty funds have been established in all 50 states to pay the covered claims of policyholders in the event of an insolvency of an insurer, subject to applicable state limits. The funding of guaranty funds is provided through assessments levied against remaining insurers in the marketplace. As a result, the insolvency of one or more insurance companies or an increase in amounts paid by guaranty funds could result in additional assessments levied against us. In addition, many states restrict the timing and/or the ability of an insurer to discontinue writing a line of business or to cancel or non-renew certain policies.

These regulatory systems also address authorization for lines of business, statutory capital and surplus requirements, limitations on the types and amounts of certain investments, underwriting limitations, transactions with affiliates, dividend limitations, changes in control, premium rates and a variety of other financial and non-financial components of an insurer's business including, recently, cyber-security.

The state insurance regulatory framework has been under continuing scrutiny, and some state legislatures have considered or enacted laws that may alter or increase state authority to regulate insurance companies and insurance holding companies. Further, the NAIC and state insurance regulators continually re-examine existing laws and regulations, specifically focusing on modifications to holding company regulations, interpretations of existing laws and the development of new laws and regulations.

As part of these changes, insurance holding company regulations were amended to require insurers who are part of a holding company system to file an enterprise risk report to provide the lead insurance regulator with a summary of the company's Enterprise Risk Management (ERM) framework, including the material risks within the insurance holding company system that could pose risk to the insurance entities within the holding company system. Insurers having premium volume above certain thresholds, including the Company, are also required to perform at least annually a self-assessment of their current and future risks, including their likely future solvency position (known as an own risk and solvency assessment or ORSA) and file a confidential report with the insurer's lead insurance regulator. The requirement for an insurer to conduct an ORSA is intended to foster an effective level of ERM at all insurers within a holding company system, and to provide a group-wide perspective on risk and capital as a supplement to the legal entity view. ORSA is now included in the International Association of Insurance Supervisors (IAIS) standards and is in various stages of implementation in the United States, Europe, Canada, and other jurisdictions. It is possible that, as a result of ORSA and the manner in which it may be used by insurance regulators, our states of domicile or other regulatory bodies may require changes in our ERM process (e.g., prescribe the use of specific models or the application of certain assumptions in the Company's models) that have the effect of limiting our ability to write certain risks, limit our risk appetite to write additional business or reduce our capital management flexibility. See "Enterprise Risk Management" for further discussion of the Company's ERM.

The NAIC and state insurance regulators, as well as the Federal Reserve and Federal Insurance Office, are currently working with the IAIS to develop a global common framework (ComFrame) for the supervision of internationally active insurance groups (IAIGs). If adopted, ComFrame would require the designation of a group-wide supervisor (regulator) for each IAIG and would impose a group capital requirement that would be applied to an IAIG in addition to the current legal entity capital requirements imposed by state insurance laws and regulations. In response to ComFrame, the NAIC developed a model law that allows state insurance regulators in the U.S. to be designated as group-wide supervisors for U.S.-based IAIGs. Additionally, the NAIC is developing a group capital analytical tool that would be applied to U.S.-based insurance groups in addition to the risk-based capital (RBC) requirement that is applied on a legal entity basis. These regulatory developments could increase the amount of capital that the Company is required to have and could result in the Company being subject to increased regulatory requirements.

States may choose to adopt more restrictive insurance laws and regulations that could, among other things, restrict the ability of insurance subsidiaries to distribute funds to their parent companies or they could reject rate increases due to the economic environment. The state insurance regulators may also increase the statutory capital and surplus requirements for our insurance subsidiaries. In addition, state tax laws that specifically impact the insurance industry, such as premium taxes or other taxes, could be enacted or changed by states to raise revenues.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (TCJA) was signed into law. This is the first major revision of the U.S. tax code since 1986 and its ultimate impact is uncertain. For example, some elected federal and state officials and regulators have criticized the new law and may attempt to take legal, legislative, or regulatory actions designed to change the TCJA's impact. The Treasury Department is in the process of finalizing regulations

regarding the TCJA and we expect several important areas of regulation to be finalized in 2019.

Other state legislative actions could impact our business as well. For example, changes to state law regarding workers' compensation insurance could impact the demand for our products, and the legalization of cannabis in certain states could potentially increase loss costs. State laws or regulations that are adopted or amended may be more restrictive than current laws or regulations and may result in lower revenues and/or higher costs of compliance and, as a result, could materially and adversely affect our results of operations.

A downgrade in our claims-paying and financial strength ratings could adversely impact our business volumes, adversely impact our ability to access the capital markets and increase our borrowing costs. Claims-paying and financial strength ratings are important to an insurer’s competitive position. Rating agencies periodically review insurers’ ratings and change their ratings criteria; therefore, our current ratings may not be maintained in the future. A downgrade in one or more of our ratings could

negatively impact our business volumes because demand for certain of our products may be reduced, particularly because many customers may require that we maintain minimum ratings to enter into, maintain or renew business with us. Additionally, we may find it more difficult to access the capital markets and we may incur higher borrowing costs. If significant losses, including, but not limited to, those resulting from one or more major catastrophes, or significant reserve additions or significant investment losses were to cause our capital position to deteriorate significantly, or if one or more rating agencies substantially increase their capital requirements, we may need to raise equity capital in the future (which we may not be able to do at a reasonable cost or at all, especially at a time of financial market disruption) in order to maintain our ratings or limit the extent of a downgrade. A continued trend of more frequent and severe weather-related or other catastrophes or a prolonged financial market disruption or economic downturn may lead rating agencies to substantially increase their capital requirements. See also "During or following a period of financial market disruption or economic downturn, our business could be materially and adversely affected." For further discussion about our ratings, see "Item 1—Business—Ratings."

The inability of our insurance subsidiaries to pay dividends to our holding company in sufficient amounts would harm our ability to meet our obligations, pay future shareholder dividends and/or make future share repurchases. Our holding company relies on dividends from our U.S. insurance subsidiaries to meet our obligations for payment of interest and principal on outstanding debt, to pay dividends to shareholders, to make contributions to our qualified domestic pension plan, to pay other corporate expenses and to make share repurchases. The ability of our insurance subsidiaries to pay dividends to our holding company in the future will depend on their statutory capital and surplus, earnings and regulatory restrictions.

We are subject to state insurance regulation as an insurance holding company system. Our U.S. insurance subsidiaries are subject to various regulatory restrictions that limit the maximum amount of dividends available to be paid to their parent without prior approval of insurance regulatory authorities. In a time of prolonged economic downturn or otherwise, insurance regulators may choose to further restrict the ability of insurance subsidiaries to make payments to their parent companies. The ability of our insurance subsidiaries to pay dividends to our holding company is also restricted by regulations that set standards of solvency that must be met and maintained.

The inability of our insurance subsidiaries to pay dividends to our holding company in an amount sufficient to meet our debt service obligations and other cash requirements could harm our ability to meet our obligations, to pay future shareholder dividends and to make share repurchases.

Our efforts to develop new products, expand in targeted markets or improve business processes and workflows may not be successful and may create enhanced risks. From time to time, to protect and grow market share and/or improve our efficiency, we invest in strategic initiatives to:

- Develop products that insure risks we have not previously insured, contain new coverages or change coverage terms;
- Change commission terms;
- Change our underwriting processes;
- Improve business processes and workflow to increase efficiencies and productivity and to enhance the experience of our customers and distributors;
- Expand distribution channels; and
- Enter geographic markets within or outside of the United States where we have had relatively little or no market share.

We may not be successful in these efforts, and even if we are successful, they may create the following risks, among others:

- Demand for new products or expansion into new markets may not meet our expectations;

- New products and expansion into new markets may change our risk exposures, and the data and models we use to manage such exposures may not be as effective as those we use in existing markets or with existing products;
- Models underlying automated underwriting and pricing decisions may not be effective;
- Efforts to develop new products or markets and to change commission terms may create or increase distribution channel conflict, such as described above under "—Disruptions to our relationships with our independent agents and brokers could adversely affect us;"
- In connection with the conversion of existing policyholders to a new product, some policyholders' pricing may increase while the pricing for other policyholders may decrease, the net impact of which could negatively impact retention and profit margins; and
- Changes to our business processes or workflow, including the use of new technologies, may give rise to execution risk.

These efforts may require us to make substantial expenditures, which may negatively impact results in the near term, and if not successful, could materially and adversely affect our results of operations.

We may be adversely affected if our pricing and capital models provide materially different indications than actual results. The profitability of our property and casualty business substantially depends on the extent to which our actual claims experience is consistent with the assumptions we use in pricing our policies. We utilize proprietary and third party models to help us price business in a manner that is intended to be consistent, over time, with actual results and return objectives. We incorporate the Company's historical loss experience, external industry and other data, and economic indices into our modeling processes, and we use various methods, including predictive modeling, forecasting and sophisticated simulation modeling techniques, to analyze loss trends and the risks associated with our assets and liabilities. We also use these modeling processes, analyses and methods in making underwriting, pricing and reinsurance decisions as part of managing our exposure to catastrophes and other extreme adverse events. These modeling processes incorporate numerous assumptions and forecasts about the future level and variability of the frequency and severity of losses, inflation, interest rates and capital requirements, among others, that are difficult to make and may differ materially from actual results.

Whether we use a proprietary or third-party model, future experience may be materially different from past and current experience incorporated in a model's forecasts or simulations. This includes the likelihood of events occurring or continuing or the correlation among events. Third-party models may provide substantially different indications than what our proprietary modeling processes provide. As a result, third-party model estimates of losses can be, and often have been, materially different for similar events in comparison to our proprietary estimates. The differences between third-party model estimates and our proprietary estimates are driven by the use of different data sets as well as different assumptions and forecasts regarding the frequency and severity of events and claims arising from the events. In addition, as the number of third-party models increases, it becomes more difficult to validate and manage such models as they evolve over time, and the risk associated with assimilating the output from such models into our decisions increases.

If we fail to appropriately price the risks we insure or fail to change our pricing models to appropriately reflect our experience, or if our claims experience is more frequent or severe than our underlying risk assumptions, for example due to changes in behavior such as distracted driving, our profit margins may be negatively affected. If we underestimate the frequency and/or severity of extreme adverse events occurring, our financial condition may be adversely affected. If we overestimate the risks we are exposed to, we may overprice our products, and new business growth and retention of our existing business may be adversely affected. See "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Catastrophe Modeling."

Our business success and profitability depend, in part, on effective information technology systems and on continuing to develop and implement improvements in technology, particularly as our business processes become more digital. We depend in large part on our technology systems for conducting business and processing claims, as well as for providing the data and analytics we utilize to manage our business. As a result, our business success is dependent on maintaining the effectiveness of existing technology systems and on continuing to develop and enhance technology systems that support our business processes and strategic initiatives in a cost and resource efficient manner, particularly as our business processes become more digital. Some system development projects are long-term in nature, may negatively impact our expense ratios as we invest in the projects and may cost more than we expect to complete. In addition, system development projects may not deliver the benefits or perform as expected, or may be replaced or become obsolete more quickly than expected, which could result in operational difficulties, additional costs or accelerated recognition of expenses. If we do not effectively and efficiently manage and upgrade our technology portfolio, or if the costs of doing so are higher than we expect, our ability to provide competitive services to, and conduct business with, new and existing customers in a cost effective manner and our ability to implement our strategic initiatives could be adversely impacted.

If we experience difficulties with technology, data and network security (including as a result of cyber attacks), outsourcing relationships or cloud-based technology, our ability to conduct our business could be negatively impacted. While technology can streamline many business processes and ultimately reduce the cost of operations, technology initiatives present significant risks. Our business is highly dependent upon our employees' ability to perform, in an efficient and uninterrupted fashion, necessary business functions. A shut-down of, or inability to access, one or more of our facilities (including our primary data processing facility); a power outage; or a failure of one or more of our information technology, telecommunications or other systems could significantly impair our ability to perform such functions on a timely basis, particularly if such an interruption lasts for an extended period of time. In the event of a computer virus or disaster such as a natural catastrophe, terrorist or other attack or industrial accident, our systems could be inaccessible for an extended period of time. In addition, because our information technology and telecommunications systems increasingly interface with and depend on third-party systems, including cloud-based, we could experience service denials or failures of controls if demand for our service exceeds capacity or a third-party system fails or experiences an interruption. Business interruptions and failures of controls could also result if our internal systems do not interface with each other as intended or if changes to such systems are not effectively implemented. Business continuity can also be disrupted by an event, such as a pandemic, that renders large numbers of a workforce unable to work as needed, particularly at

critical locations; for example, our largest location employs about 20% of our employees. If our business continuity plans did not sufficiently address a business interruption, system failure or service denial, this could result in a deterioration of our ability to write and process new and renewal business, provide customer service, pay claims in a timely manner or perform other necessary business functions.

Our operations rely on the reliable and secure processing, storage and transmission of confidential and other information in our computer systems and networks. Computer viruses, hackers (including individuals, organizations or rogue states) and employee or vendor misconduct, and other external hazards, could expose our data systems to security breaches, cyber-attacks or other disruptions. Increased use of data supplied by third parties in our business increases our exposure to this risk. In addition, we routinely transmit and receive personal, confidential and proprietary information by e-mail and other electronic means. While we attempt to develop secure transmission capabilities with third-party vendors and others with whom we do business, we may be unable to put in place secure capabilities with all of such vendors and third parties and, in addition, these third parties may not have appropriate controls in place to protect the confidentiality of the information.

Like other global companies, our computer systems are regularly subject to and will continue to be the target of computer viruses, malware or other malicious codes (including ransomware), unauthorized access, cyber-attacks or other computer-related penetrations. While we have experienced threats to our data and systems, to date, we are not aware that we have experienced a material cyber-security breach. However, over time, the sophistication of these threats continues to increase. Our administrative and technical controls as well as other preventative actions we take to reduce the risk of cyber incidents and protect our information may be insufficient to detect or prevent unauthorized access, other physical and electronic break-ins, cyber-attacks or other security breaches to our computer systems or those of third parties with whom we do business. In addition, new technology that could result in greater operational efficiency may further expose our computer systems to the risk of cyber-attacks. Our increased use of open source software, cloud technology and software as a service can make it more difficult to identify and remedy such situations due to the disparate location of code utilized in our operations.

We have outsourced certain technology and business process functions to third parties and may increasingly do so in the future. If we do not effectively develop, implement and monitor our outsourcing relationships, if third party providers do not perform as anticipated, if we experience technological or other problems with a transition, or if outsourcing relationships relevant to our business process functions are terminated, we may not realize expected productivity improvements or cost efficiencies and may experience operational difficulties, increased costs and a loss of business. Our outsourcing of certain technology and business process functions to third parties may expose us to increased risk related to data security, service disruptions or the effectiveness of our control system, which could result in monetary and reputational damages or harm to our competitive position. These risks could increase as vendors increasingly offer cloud-based software services rather than software services which can be run within our data centers or as we choose to move additional functions to the cloud. See also “We could be adversely affected if our controls designed to ensure compliance with guidelines, policies and legal and regulatory standards are not effective.” In addition to risks caused by third party providers, our ability to receive services from third-party providers outside of the United States might be impacted by cultural differences, political instability, unanticipated regulatory requirements or public policy inside or outside of the United States.

The increased risks identified above could expose us to data loss or manipulation, disruption of service, monetary and reputational damages, competitive disadvantage and significant increases in compliance costs and costs to improve the security and resiliency of our computer systems. The compromise of personal, confidential or proprietary information could also subject us to legal liability or regulatory action under evolving cyber-security, data protection and privacy laws and regulations enacted by the U.S. federal and state governments, Canada, the European Union or other jurisdictions or by various regulatory organizations or exchanges. As an example, the European General Data Protection Regulation became applicable in all European Union member states beginning May 25, 2018. This

regulation adds a broad array of requirements for handling personal data and could impose a fine of up to 4% of global annual revenue for violations. It and similar regulations could result in increased compliance costs and potential fines for non-compliance being imposed on us or our insureds. As a result, our ability to conduct our business and our results of operations might be materially and adversely affected.

We are also subject to a number of additional risks associated with our business outside the United States. We conduct business outside the United States primarily in Canada, the United Kingdom and the Republic of Ireland. In addition, we conduct business in Brazil, primarily through a joint venture, and we have an indirect interest in a joint venture in Colombia. We may also explore opportunities in other countries, including other Latin American countries and other emerging markets such as India.

In conducting business outside of the United States, we are also subject to a number of additional risks, particularly in emerging economies. These risks include restrictions such as price controls, capital controls, currency exchange limits, ownership limits and other restrictive or anti-competitive governmental actions or requirements, which could have an adverse effect on our business

and our reputation. A portion of our premiums from outside of the United States is generated in Canada, a substantial portion of which consists of automobile premiums from the province of Ontario, which is a highly regulated market that can result in rate inadequacy. Our business activities outside the United States may also subject us to currency risk and, in some markets, it may be difficult to effectively hedge that risk, or we may choose not to hedge that risk. In addition, in some markets, we may invest as part of a joint venture with a local counterparty. Because our governance rights may be limited, we may not have control over the ability of the joint venture to make certain decisions and/or mitigate risks it faces, and significant disagreements with a joint venture counterparty may adversely impact our investment and/or reputation. Our business activities outside the United States could subject us to increased volatility in earnings resulting from the need to recognize and subsequently revise a valuation allowance associated with income taxes if we became unable to fully utilize any deferred tax assets, including loss carry-forwards from those foreign operations. Also, political instability, particularly in emerging economies, and changing market conditions around the globe, could result in financial market disruption or an economic downturn in such regions. The U.K.'s withdrawal from the European Union, for example, could have economic impacts such as inflation and decreased GDP in the U.K. and in regions that trade with the U.K.

Our business activities outside the United States also subject us to additional domestic and foreign laws and regulations, including the Foreign Corrupt Practices Act and similar laws in other countries that prohibit the making of improper payments to foreign officials. Although we have policies and controls in place that are designed to ensure compliance with these laws, if those controls are ineffective and/or an employee or intermediary fails to comply with applicable laws and regulations, we could suffer civil and criminal penalties and our business and our reputation could be adversely affected. Some countries, particularly emerging economies, have laws and regulations that lack clarity and, even with local expertise and effective controls, it can be difficult to determine the exact requirements of, and potential liability under, the local laws. In some jurisdictions, including Brazil, parties to a joint venture may, in some circumstances, have liability for some obligations of the venture, and that liability may extend beyond the capital invested. Failure to comply with local laws in a particular market may result in substantial liability and could have a significant and negative effect not only on our business in that market but also on our reputation generally.

In addition, competition for skilled employees in developing markets and other non-U.S. locations may be intense. If we are not able to hire, integrate, motivate and retain a sufficient number of employees with the knowledge and background necessary for our global businesses, those businesses and our results of operations may be adversely affected.

Regulatory changes outside of the United States, including in Canada, the U.K., the Republic of Ireland and the European Union, could adversely impact our results of operations and limit our growth. Insurance laws or regulations that are adopted or amended in jurisdictions outside the U.S. may be more restrictive than current laws or regulations and may result in lower revenues and/or higher costs of compliance and thus could materially and adversely affect our results of operations and limit our growth.

In particular, the European Union’s executive body, the European Commission, implemented new capital adequacy and risk management regulations called Solvency II on January 1, 2016 that apply to the Company’s businesses across the European Union. Under Solvency II, it is possible that the U.S. parent of a European Union subsidiary could be subject to certain Solvency II requirements if the regulator determines that the subsidiary’s capital position is dependent on the parent company and the U.S. parent is not already subject to regulations deemed “equivalent” to Solvency II. In addition, regulators in countries where the Company has operations are working with the International Association of Insurance Supervisors (IAIS) (and with the NAIC, the Federal Reserve and FIO in the U.S.) to consider changes to insurance company supervision, including group supervision and group capital requirements.

The IAIS has developed a methodology for identifying “global systemically important insurers” (G-SIIs) and high level policy measures that will apply to the G-SIIs. The methodology and measures were endorsed by the Financial

Stability Board (FSB) created by the G-20. Using the IAIS methodology, the FSB, working with national authorities and the IAIS, identified nine insurers in November 2016 that they designated as G-SIIs. The IAIS is working on the policy measures which include higher capital requirements and enhanced supervision. The Company has not been designated as a G-SII by the FSB; however, the FSB updates the list annually, and it is possible that the methodologies could be amended or interpreted differently in the future and the Company could be named as a G-SII.

The IAIS is also in the process of developing the Common Framework for the Supervision of Internationally Active Insurance Groups (ComFrame). As the current draft of ComFrame is completed, it likely will lead to similar policy measures as those being developed for G-SIIs being made applicable to internationally active insurance groups (or "IAIGs"), including group supervision, group capital requirements, and resolution planning, i.e., a written plan developed by a financial group detailing how it would be wound down in the event of an insolvency. The IAIS is currently in the process of field testing the group capital requirements. The Company would be considered an Internationally Active Insurance Group under the current Consultation Draft. It is possible

that ComFrame, if adopted, could lead to enhanced supervision and higher capital standards on a global basis if the IAIS, the NAIC and the individual states adopt the proposed or similar provisions.

The U.S. Department of the Treasury and the Office of the U.S. Trade Representative have signed covered agreements (the Covered Agreements) regarding prudential (solvency) insurance and reinsurance measures with each of the EU and the U.K. The Covered Agreements include three areas of prudential insurance supervision: reinsurance contracts, group supervision, and the exchange of information between U.S. and U.K. regulators and between U.S. and EU regulators on insurers and reinsurers that operate in the U.S., U.K. and EU markets. The Covered Agreement with the EU went into effect in April 2018, while the Covered Agreement with the U.K. will take full effect at the earlier of the satisfaction of certain conditions or the U.K.'s exit from the EU. The Covered Agreements are intended to promote cooperation between U.S. insurance regulators and EU and U.K. insurance regulators and to limit the ability of the EU and the U.K. to apply solvency and group capital requirements to the worldwide operations of any U.S. insurer operating in the EU or U.K. It is possible that individual members of the EU could differ in how they adopt or implement the Covered Agreement, resulting in greater regulation and higher capital standards as well as inconsistent regulatory requirements among the jurisdictions that the Company does business.

While it is not yet known how or if these actions will impact us, such regulation could result in increased costs of compliance, increased disclosure and less flexibility in our capital management, and could adversely impact our results of operations and limit our growth.

Loss of or significant restrictions on the use of particular types of underwriting criteria, such as credit scoring, or other data or methodologies, in the pricing and underwriting of our products could reduce our future profitability. Our underwriting profitability depends in large part on our ability to competitively price our products at a level that will adequately compensate us for the risks assumed. As a result, risk selection and pricing through the application of actuarially sound and segmented underwriting criteria is critical. However, laws or regulations, or judicial or administrative findings, could significantly curtail the use of particular types of underwriting criteria. For example, we may use credit scoring as a factor in pricing decisions where allowed by state law. Some consumer groups and/or regulators have alleged that the use of credit scoring violates the law by discriminating against persons belonging to a protected class and are calling for the prohibition or restrictions on the use of credit scoring in underwriting and pricing. A variety of other underwriting criteria and other data or methodologies used in personal and commercial insurance have been and continue to be criticized by regulators, government agencies, consumer groups or individuals on similar or other grounds. Resulting regulatory actions or litigation could result in negative publicity and/or generate adverse rules or findings, such as curtailing the use of important underwriting criteria, or other data or methodologies, each of which could adversely affect our future profitability.

Acquisitions and integration of acquired businesses may result in operating difficulties and other unintended consequences. From time to time we may pursue acquisition opportunities if we believe that such opportunities are consistent with our long-term objectives and that the potential rewards of an acquisition justify the risks. The process of integrating an acquired company or business can be complex and costly, however, and may create unforeseen operating difficulties and expenditures. For example, acquisitions may present significant risks, including:

- the potential disruption of our ongoing business;
- the ineffective integration of, or other difficulties with, underwriting, risk management, claims handling, information technology and actuarial practices;
- uncertainties related to an acquiree’s reserve estimates and its design and operation of internal controls over financial reporting;
- the diversion of management time and resources to acquisition integration challenges;
- the loss of key employees;
- unforeseen liabilities;

- difficulties in achieving the strategic objectives of an acquisition, including the business, financial, technological or distribution objectives;
- the cultural challenges associated with integrating employees; and
- the impact on our financial position and/or credit ratings.

The expected benefits of acquired businesses may not be realized, any cost savings and other synergies anticipated from the acquisition may not be achieved and costs associated with the integration may be greater than anticipated. Acquired businesses may not be successfully integrated, resulting in substantial costs or delays and adversely affecting our ability to compete. Accordingly, our results of operations might be materially and adversely affected.

We could be adversely affected if our controls designed to ensure compliance with guidelines, policies and legal and regulatory standards are not effective. Our business is highly dependent on our ability to engage on a daily basis in a large number of insurance underwriting, claim processing and investment activities, many of which are highly complex. These activities often are subject to internal guidelines and policies, as well as legal and regulatory standards. A control system, no matter how well designed and operated, can provide only reasonable assurance that the control system's objectives will be met. If our controls are not effective, it could lead to financial loss, unanticipated risk exposure (including underwriting, credit and investment risk), errors in financial reporting or damage to our reputation. See also "If we experience difficulties with technology, data and network security (including as a result of cyber attacks), outsourcing relationships, or cloud-based technology, our ability to conduct our business could be negatively impacted."

In addition, ineffective controls, including with respect to any joint ventures or recently acquired businesses, could lead to litigation or regulatory action. The volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against various types of financial institutions have increased over time. Substantial legal liability or significant regulatory action against us could have a material adverse financial impact. See note 16 of notes to our consolidated financial statements for a discussion of certain legal proceedings in which we are involved.

Our businesses may be adversely affected if we are unable to hire and retain qualified employees. There is significant competition from within the property and casualty insurance industry and from businesses outside the industry for qualified employees, especially those in key positions and those possessing highly specialized knowledge in areas such as underwriting, data and analytics, technology and e-commerce. Our performance is largely dependent on the talents, efforts and proper conduct of highly-skilled individuals, including our senior executives (many of whom have decades of experience in the insurance industry), and the Board of Directors regularly engages in succession discussions. See "Item 10-Directors, Executive Officers and Corporate Governance" for more information relating to our executive officers, including our senior leaders. For many of our senior positions, we compete for talent not just with insurance or financial service companies, but with other large companies and other businesses. Our continued ability to compete effectively in our businesses and to expand into new business areas depends on our ability to attract new employees and to retain and motivate our existing employees. If we are not able to successfully attract, retain and motivate our employees, our business, financial results and reputation could be materially and adversely affected.

Intellectual property is important to our business, and we may be unable to protect and enforce our own intellectual property or we may be subject to claims for infringing the intellectual property of others. Our success depends in part upon our ability to protect our proprietary trademarks, technology and other intellectual property. See "Item 1—Other Information—Intellectual Property." We may not, however, be able to protect our intellectual property from unauthorized use and disclosure by others. Further, the intellectual property laws may not prevent our competitors from independently developing trademarks, products and services that are similar to ours. Moreover, the agreements we execute to protect our intellectual property rights may be breached, and we may not have adequate remedies in response. Our attempts to patent or register our intellectual property rights in the U.S. and worldwide may not succeed initially or may later be challenged by third parties. Further, the laws of certain countries outside the United States may not adequately protect our intellectual property rights. We may incur significant costs in our efforts to protect and enforce our intellectual property, including the initiation of expensive and protracted litigation, and we may not prevail. Any inability to enforce our intellectual property rights could have a material adverse effect on our business and our ability to compete.

We may be subject to claims by third parties from time to time that our products, services and technologies infringe on their intellectual property rights. In recent years, certain entities have acquired patents in order to allege claims of infringement against companies, including in some cases, us. Any intellectual property infringement claims brought against us could cause us to spend significant time and money to defend ourselves, regardless of the merits of the claims. If we are found to infringe any third-party intellectual property rights, it could result in reputational harm,

payment of significant monetary damages, payment of license fees (if licenses are even available to us, on reasonable terms or otherwise) and/or substantial time and expense to redesign our products, services or technologies to avoid the infringement. In addition, we use third party software in some of our products, services and technologies. If any of our software vendors or licensors are faced with infringement claims, we may lose our ability to use such software until the dispute is resolved. If we cannot successfully redesign an infringing product, service or technology (or procure a substitute version), this could have a material adverse effect on our business and our ability to compete.

Changes in federal regulation could impose significant burdens on us and otherwise adversely impact our results. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the Dodd-Frank Act) established a Federal Insurance Office (FIO) within the U.S. Department of the Treasury. The FIO has limited regulatory authority and is empowered to gather data and information regarding the insurance industry and insurers, but it has in the past recommended an expanded federal role in some circumstances. The Dodd-Frank Act also gives the Federal Reserve supervisory authority over a number of nonbank financial services holding companies, including insurance companies, if they are designated by a two-thirds vote of a Financial Stability Oversight Council (the FSOC) as “systemically important financial institutions” (SIFI) or own a bank or thrift. The

Company, based upon the FSOC's rules and interpretive guidance, has not been designated as a SIFI and is not subject to regulation by the Federal Reserve. In addition, the Federal Reserve is moving away from SIFI designations and we do not expect any new designations in the near future. Nonetheless, it is possible that FSOC may change its rules or interpretations in the future and conclude that we are a SIFI. If we were designated as a SIFI, the Federal Reserve's supervisory authority could include the ability to impose heightened financial regulation and could impact requirements regarding our capital, liquidity and leverage as well as our business and investment conduct. The Dodd-Frank Act also authorizes assessments to pay for the resolution of SIFI's that have become insolvent. We (as a financial company with more than $50 billion in assets) could be assessed, and although any such assessment is required to be risk weighted (i.e., riskier firms pay more), such costs could be material to us and are not currently estimable. As a result of the foregoing, the Dodd-Frank Act, including any changes thereto as a result of its current re-evaluation or otherwise, or other additional federal regulation that is adopted in the future, could impose additional burdens on us, including impacting the ways in which we conduct our business, increasing compliance costs and duplicating state regulation, and could result in a competitive disadvantage, particularly relative to other competitors that may not be subject to the same level of regulation.

Even if we are not subject to additional regulation by the federal government, significant financial sector regulatory reform could have a significant impact on us. For example, regulatory reform could have an unexpected impact on our rights as a creditor or on our competitive position. The current administration is reviewing rules and regulations across the entire federal regulatory spectrum, including Treasury, the SEC, the Department of Transportation, the Department of Labor and other agencies, as well as treaty relationships with parties to the North American Free Trade Agreement. The U.S. entered into an agreement with Canada and Mexico to replace the North American Free Trade Agreement with the United States Mexico Canada Agreement (USMCA). The USMCA must be approved by the legislatures of all three countries in 2019. We expect executive action on regulatory changes to continue in 2019 and beyond.

Other potential changes in U.S. federal legislation, regulation and/or administrative policies, including the potential repeal of the McCarran-Ferguson Act (which exempts insurance from most federal regulation), could also significantly harm the insurance industry, including us.

Changes in U.S. tax laws or in the tax laws of other jurisdictions in which we operate could adversely impact us. Tax laws may change in ways that adversely impact us, including increasing the statutory U.S. federal corporate income tax rate. Alternatively, federal tax legislation could be enacted to further reduce the existing statutory U.S. federal corporate income tax rate from 21%, which would, accordingly, reduce any U.S. net deferred tax asset. The amount of any net deferred tax asset is volatile and significantly impacted by changes in unrealized investment gains and losses. The effect of a reduction in a tax rate on net deferred tax assets is required to be recognized, in full, as a reduction of income from continuing operations in the period when enacted and, along with other changes in the tax rules that may increase the Company's actual tax expense, could materially and adversely affect our results of operations. In addition, a reduction in the existing statutory U.S. federal corporate income tax rate could increase the after-tax effect of future significant loss events and our after-tax borrowing costs. Additional uncertainties exist with respect to potential technical corrections, final regulations and other clarifications to the Tax Cuts and Jobs Act of 2017.

Our investment portfolio has benefited from certain tax exemptions and certain other tax laws and regulations, including, but not limited to, those governing dividends-received deductions and tax credits. Federal and/or state tax legislation could be enacted in connection with deficit reduction or various types of fundamental tax reform that would lessen or eliminate some or all of the tax advantages currently benefiting us and therefore could materially and adversely impact our results of operations. In addition, such legislation could adversely affect the value of our investment portfolio, particularly changes to the taxation of interest from municipal bonds (which comprise 39% of our investment portfolio as of December 31, 2018), which could materially and adversely impact the value of those bonds.

Other tax law changes could materially and adversely impact our results of operations. For example, budget constraints faced by many states and localities increase the likelihood that state and local governments will raise revenue by enacting legislation increasing the taxes paid by individuals and corporations.

Item 1B. UNRESOLVED STAFF COMMENTS

NONE.

Item 2. PROPERTIES

The Company leases its principal executive offices in New York, New York, as well as approximately 220 field and claim offices totaling approximately 4.2 million square feet throughout the United States under leases or subleases with third parties. The Company also leases offices in Canada, the United Kingdom, the Republic of Ireland, Brazil, India and China that house operations (primarily for Business Insurance) in those locations. The Company owns six buildings in Hartford, Connecticut, consisting of approximately 1.8 million square feet of office space. The Company also owns buildings located in other areas of Connecticut; Norcross, Georgia; St. Paul, Minnesota; and Omaha, Nebraska. The Company owns a building in London, England, which houses a portion of Business Insurance's operations in the United Kingdom.

In the opinion of the Company's management, the Company's properties are adequate and suitable for its business as presently conducted and are adequately maintained.

Item 3. LEGAL PROCEEDINGS

The information required with respect to this item can be found under "Contingencies" in note 16 of notes to the consolidated financial statements in this annual report and is incorporated by reference into this Item 3.

Item 4. MINE SAFETY DISCLOSURES

NONE.

EXECUTIVE OFFICERS OF THE REGISTRANT

Information about the Company's executive officers is incorporated by reference from Part III—Item 10 of this annual report.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

The Company's common stock is traded on the New York Stock Exchange under the symbol "TRV." The number of holders of record of the Company's common stock was 40,079 as of February 8, 2019. This is not the actual number of beneficial owners of the Company's common stock as some shares are held in "street name" by brokers and others on behalf of individual owners.

SHAREHOLDER RETURN PERFORMANCE GRAPH

The following graph shows a five-year comparison of the cumulative total return to shareholders for the Company's common stock and the common stock of companies included in the S&P 500 Index and the S&P 500 Property & Casualty Insurance Index, which the Company believes is the most appropriate comparative index.

	As of December 31,					
	2013	2014	2015	2016	2017	2018
The Travelers Companies, Inc.	$100.00	$119.60	$130.48	$144.77	$164.13	$148.30
S&P 500 Index	100.00	113.69	115.26	129.05	157.22	150.33
S&P 500 Property & Casualty Insurance Index	100.00	117.26	123.58	143.96	178.28	165.31

(1) The cumulative total return to shareholders is a concept used to compare the performance of a company's stock over time. Cumulative total return to shareholders is calculated as the net stock price change for the specified time period plus the cumulative amount of dividends (assuming dividend reinvestment on the respective dividend payment dates) divided by the stock price at the beginning of the time period.

(2) Assumes $100 invested in common shares of The Travelers Companies, Inc. on December 31, 2013.

(3) Companies in the S&P 500 Property & Casualty Insurance Index as of December 31, 2018 were the following: The Travelers Companies, Inc., Chubb Limited, Cincinnati Financial Corporation, The Progressive Corporation and The Allstate Corporation. Returns of each of the companies included in this index have been weighted according to their respective market capitalizations.

A long-term perspective is particularly important in the property and casualty insurance industry, where the periodic occurrences of significant catastrophes have historically produced results that can vary significantly year-to-year. Accordingly, the Company manages with a long-term perspective.

ISSUER PURCHASES OF EQUITY SECURITIES

The table below sets forth information regarding repurchases by the Company of its common stock during the periods indicated.

Period Beginning	Period Ending	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Approximate dollar value of shares that may yet be purchased under the plans or programs (in millions)
Oct. 1, 2018	Oct. 31, 2018	830,633	$123.33	830,000	$ 3,353
Nov. 1, 2018	Nov. 30, 2018	525,786	127.87	524,800	3,286
Dec. 1, 2018	Dec. 31, 2018	4,362	118.81	—	3,286
Total		1,360,781	125.07	1,354,800	3,286

The Company’s Board of Directors has approved common share repurchase authorizations under which repurchases may be made from time to time in the open market, pursuant to pre-set trading plans meeting the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, in private transactions or otherwise. The authorizations do not have a stated expiration date. The most recent authorization was approved by the Board of Directors in April 2017 and added $5.0 billion of repurchase capacity to the $709 million capacity remaining at that date. The timing and actual number of shares to be repurchased in the future will depend on a variety of factors, including the Company’s financial position, earnings, share price, catastrophe losses, maintaining capital levels commensurate with the Company’s desired ratings from independent rating agencies, funding of the Company’s qualified pension plan, capital requirements of the Company’s operating subsidiaries, legal requirements, regulatory constraints, other investment opportunities (including mergers and acquisitions and related financings), market conditions and other factors.

The Company acquired 5,981 shares for a total cost of approximately $0.7 million during the three months ended December 31, 2018 that were not part of the publicly announced share repurchase authorization. These shares consisted of shares retained to cover payroll withholding taxes in connection with the vesting of restricted stock unit awards and performance share awards, and shares used by employees to cover the price of certain stock options that were exercised.

For additional information regarding the Company's share repurchases, see "Item 7 — Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources."

Information relating to compensation plans under which the Company's equity securities are authorized for issuance is set forth in Part III—Item 12 of this Report.

Item 6. SELECTED FINANCIAL DATA

	At and for the year ended December 31,				
(in millions, except per share amounts)	2018	2017	2016	2015	2014
Total revenues	$30,282	$28,902	$27,625	$26,815	$27,174
Net income	$2,523	$2,056	$3,014	$3,439	$3,692
Total investments	$72,278	$72,502	$70,488	$70,470	$73,261
Total assets	104,233	103,483	100,245	100,184	103,078
Claims and claim adjustment expense reserves	50,668	49,650	47,949	48,295	49,850
Total long-term debt	5,964	5,971	5,887	5,844	5,849
Total liabilities	81,339	79,752	77,024	76,586	78,242
Total shareholders' equity	22,894	23,731	23,221	23,598	24,836
Net income per share					
Basic	$9.37	$7.39	$10.39	$10.99	$10.82
Diluted	$9.28	$7.33	$10.28	$10.88	$10.70
Year-end common shares outstanding	263.6	271.4	279.6	295.9	322.2
Per common share amounts					
Cash dividends	$3.03	$2.83	$2.62	$2.38	$2.15
Book value	$86.84	$87.46	$83.05	$79.75	$77.08

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is a discussion and analysis of the Company's financial condition and results of operations.

FINANCIAL HIGHLIGHTS

2018 Consolidated Results of Operations

- Net income of $2.52 billion, or $9.37 per share basic and $9.28 per share diluted
- Net earned premiums of $27.06 billion
- Catastrophe losses of $1.72 billion ($1.36 billion after-tax)
- Net favorable prior year reserve development of $517 million ($409 million after-tax)
- Combined ratio of 96.9%
- Net investment income of $2.47 billion ($2.10 billion after-tax)
- Operating cash flows of $4.38 billion

2018 Consolidated Financial Condition

- Total investments of $72.28 billion; fixed maturities and short-term securities comprise 93% of total investments
- Total assets of $104.23 billion
- Total debt of $6.56 billion, resulting in a debt-to-total capital ratio of 22.3% (22.2% excluding net unrealized investment losses, net of tax, included in shareholders' equity)
- Repurchased 10.0 million common shares for total cost of $1.32 billion and paid $814 million of dividends to shareholders
- Shareholders' equity of $22.89 billion
- Net unrealized investment losses of $137 million ($113 million after-tax)
- Book value per common share of $86.84
- Holding company liquidity of $1.42 billion

CONSOLIDATED OVERVIEW

Consolidated Results of Operations

(for the year ended December 31, in millions except per share amounts)	2018	2017	2016
Revenues			
Premiums	$27,059	$25,683	$24,534
Net investment income	2,474	2,397	2,302
Fee income	432	447	458
Net realized investment gains	114	216	68
Other revenues	203	159	263
Total revenues	30,282	28,902	27,625
Claims and expenses			
Claims and claim adjustment expenses	18,291	17,467	15,070
Amortization of deferred acquisition costs	4,381	4,166	3,985
General and administrative expenses	4,297	4,170	4,154
Interest expense	352	369	363
Total claims and expenses	27,321	26,172	23,572
Income before income taxes	2,961	2,730	4,053
Income tax expense	438	674	1,039
Net income	$2,523	$2,056	$3,014
Net income per share			
Basic	$9.37	$7.39	$10.39
Diluted	$9.28	$7.33	$10.28
Combined ratio			
Loss and loss adjustment expense ratio	66.8 %	67.2 %	60.5 %
Underwriting expense ratio	30.1	30.7	31.5
Combined ratio	96.9 %	97.9 %	92.0 %

The following discussions of the Company’s net income and segment income are presented on an after-tax basis. Discussions of the components of net income and segment income are presented on a pre-tax basis, unless otherwise noted. Discussions of earnings per common share are presented on a diluted basis.

Overview

Diluted net income per share of $9.28 in 2018 increased by 27% over diluted net income per share of $7.33 in 2017. Net income of $2.52 billion in 2018 increased by 23% over net income of $2.06 billion in 2017. The higher rate of increase in diluted net income per share reflected the impact of share repurchases in recent periods. The increase in income before income taxes primarily reflected the pre-tax impacts of (i) lower catastrophe losses, (ii) higher underwriting margins excluding catastrophe losses and prior year reserve development ("underlying underwriting margins") and (iii) higher net investment income, partially offset by (iv) lower net realized investment gains and (v) lower net favorable prior year reserve development. Catastrophe losses in 2018 and 2017 were $1.72 billion and $1.95 billion, respectively. Net favorable prior year reserve development in 2018 and 2017 was $517 million and $592 million, respectively. The higher underlying underwriting margins primarily resulted from the impacts of (i) earned pricing that exceeded loss cost trends in Personal Insurance, (ii) a lower level of international surety losses in Bond & Specialty Insurance and (iii) higher business volumes, partially offset by (iv) higher loss estimates in the commercial automobile product line for bodily injury liability coverages in Business Insurance and (v) higher non-catastrophe weather-related losses and non-weather related losses in Personal Insurance. Income tax expense in 2018 was lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the Tax Cuts and Jobs Act of 2017 (TCJA) and (ii) a net charge of $129 million in 2017 to reflect the change in tax laws and tax rates enacted in the U.S. on December 22, 2017 as part of the TCJA resulting primarily from revaluing the Company's deferred tax assets and liabilities and the tax imposed on accumulated foreign earnings, partially offset by (iii) the increase in income before income taxes and (iv) the $39 million reduction in income tax expense in 2017 as a result of the resolution of prior year tax matters.

Diluted net income per share of $7.33 in 2017 decreased by 29% from diluted net income per share of $10.28 in 2016. Net income of $2.06 billion in 2017 decreased by 32% from net income of $3.01 billion in 2016. The lower rate of decrease in diluted net income per share reflected the impact of share repurchases in recent periods. The decrease in income before income taxes primarily reflected the pre-tax impacts of (i) significantly higher catastrophe losses, (ii) lower net favorable prior year reserve development, (iii) lower underlying underwriting margins and (iv) lower other income in 2017 due to a favorable settlement of a reinsurance dispute in 2016, partially offset by (v) higher net realized investment gains and (vi) higher net investment income. Catastrophe losses in 2017 and 2016 were $1.95 billion and $877 million, respectively. Net favorable prior year reserve development in 2017 and 2016 was $592 million and $771 million, respectively. The lower underlying underwriting margins primarily resulted from the impacts of (i) loss cost trends that modestly exceeded earned pricing in Business Insurance, (ii) higher non-catastrophe fire-related losses in Business Insurance and (iii) higher non-catastrophe weather-related losses in Personal Insurance, partially offset by (iv) increased business volumes. Income tax expense in 2017 was lower than in 2016, primarily reflecting the impacts of (i) the decrease in income before income taxes, partially offset by (ii) the net charge of $129 million in 2017 related to the impact of the TCJA described above. In addition, income tax expense in 2017 was reduced by $39 million as a result of the resolution of prior year tax matters.

The Company has insurance operations in Canada, the United Kingdom, the Republic of Ireland and throughout other parts of the world as a corporate member of Lloyd's, as well as in Brazil and Colombia, primarily through joint ventures. Because these operations are conducted in local currencies other than the U.S. dollar, the Company is subject to changes in foreign currency exchange rates. For the years ended December 31, 2018, 2017 and 2016, changes in foreign currency exchange rates impacted reported line items in the statement of income by insignificant amounts. The impact of these changes was not material to the Company's net income or segment income for the periods reported.

Revenues

Earned Premiums

Earned premiums in 2018 were $27.06 billion, $1.38 billion or 5% higher than in 2017. In Business Insurance, earned premiums in 2018 increased by 4% over 2017. In Bond & Specialty Insurance, earned premiums in 2018 increased by 5% over 2017. In Personal Insurance, earned premiums in 2018 increased by 7% over 2017. Earned premiums in 2017 were $25.68 billion, $1.15 billion or 5% higher than in 2016. In Business Insurance, earned premiums in 2017 increased by 2% over 2016. In Bond & Specialty Insurance, earned premiums in 2017 increased by 2% over 2016. In Personal Insurance, earned premiums in 2017 increased by 10% over 2016. Factors contributing to the increases in earned premiums in each segment in 2018 and 2017 compared with the respective prior year are discussed in more detail in the segment discussions that follow.

Net Investment Income

The following table sets forth information regarding the Company's investments.

(for the year ended December 31, in millions)	2018	2017	2016
Average investments [1]	$73,031	$71,867	$70,246
Pre-tax net investment income	2,474	2,397	2,302
After-tax net investment income	2,102	1,872	1,846
Average pre-tax yield [2]	3.4 %	3.3 %	3.3 %
Average after-tax yield [2]	2.9 %	2.6 %	2.6 %

(1) Excludes net unrealized investment gains and losses and reflects cash, receivables for investment sales, payables on investment purchases and accrued investment income.

(2) Excludes net realized and net unrealized investment gains and losses.

Net investment income in 2018 was $2.47 billion, $77 million or 3% higher than in 2017. Net investment income from fixed maturity investments in 2018 was $1.98 billion, $85 million higher than in 2017, primarily resulting from a higher average level of fixed maturity investments and higher long-term reinvestment rates available in the market. Net investment income from short-term securities in 2018 was $92 million, $30 million higher than in 2017, primarily resulting from higher short-term interest rates. Net investment income generated by the Company's remaining investment portfolios in 2018 was $441 million, $37 million lower

than in 2017, primarily reflecting lower returns from private equity limited partnerships and lower dividend income due to a lower level of investments in equity securities, partially offset by higher returns from real estate partnerships.

Net investment income in 2017 was $2.40 billion, $95 million or 4% higher than in 2016. Net investment income from fixed maturity investments in 2017 was $1.89 billion, $86 million lower than in 2016, primarily resulting from lower long-term reinvestment rates available in the market, partially offset by the impact of a slightly higher level of fixed maturity investments. Net investment income from short-term securities in 2017 was $62 million, $33 million higher than in 2016, primarily due to higher short-term interest rates and a higher average level of short-term investments. Net investment income generated by the Company's remaining investment portfolios in 2017 was $478 million, $148 million higher than in 2016, primarily due to higher returns from private equity limited partnerships.

Fee Income

The National Accounts market in Business Insurance is the primary source of the Company’s fee-based business. Fee income is described in more detail in the Business Insurance discussion that follows.

Net Realized Investment Gains

The following table sets forth information regarding the Company’s net pre-tax realized investment gains.

(for the year ended December 31, in millions)	2018	2017	2016
Other-than-temporary impairment losses	$(1)	$(14)	$(29)
Net realized investment losses on equity securities still held	(29)	—	—
Other net realized investment gains, including from sales	144	230	97
Total	$114	$216	$68

Other Net Realized Investment Gains

Other net realized investment gains in 2018 included $92 million of net realized investment gains related to other investments, primarily resulting from the sale of a private equity limited partnership, $33 million of net realized gains related to fixed maturity investments, $23 million of net realized investment gains from real estate sales and $4 million of net realized investment losses related to equity securities sold.

Other net realized investment gains in 2017 included $236 million of net realized investment gains related to equity securities, $10 million of net realized investment gains from real estate sales, $4 million of net realized gains related to fixed maturity investments and $20 million of net realized investment losses related to other investments.

Other net realized investment gains in 2016 included $59 million of net realized gains related to fixed maturity investments, $14 million of net realized investment gains related to equity securities, $7 million of net realized investment gains from real estate sales and $17 million of net realized investment gains related to other investments.

Other Revenues

Other revenues in all years presented included installment premium charges. Other revenues in 2018 and 2017 also included revenues from Simply Business, which was acquired in August 2017. Other revenues in 2017 and 2016 also included gains related to the settlement of reinsurance disputes (discussed in more detail in note 16 of notes to the consolidated financial statements). Other revenues in 2016 also included proceeds from the favorable settlement of a claims-related legal matter.

Claims and Expenses

Claims and Claim Adjustment Expenses

Claims and claim adjustment expenses in 2018 were $18.29 billion, $824 million or 5% higher than in 2017, primarily reflecting the impacts of (i) higher business volumes, (ii) loss cost trends, (iii) higher loss estimates in the commercial automobile product line for bodily injury liability coverages in Business Insurance, (iv) lower net favorable prior year reserve development and (v) higher non-catastrophe weather-related losses and non-weather related losses in Personal

Insurance, partially offset by (vi) lower catastrophe losses and (vii) a lower level of international surety losses in Bond & Specialty Insurance. Catastrophes in 2018

primarily resulted from wildfires in California, Hurricanes Florence and Michael, wind and hail storms in several regions of the United States and winter storms in the eastern United States.

Claims and claim adjustment expenses in 2017 were $17.47 billion, $2.40 billion or 16% higher than in 2016, primarily reflecting the impacts of (i) significantly higher catastrophe losses, (ii) higher business volumes, (iii) loss cost trends, (iv) lower net favorable prior year reserve development, (v) higher non-catastrophe fire-related losses in Business Insurance and (vi) higher non-catastrophe weather-related losses in Personal Insurance. Catastrophe losses in 2017 primarily resulted from wildfires in California, Hurricanes Harvey, Irma and Maria, and several winter, wind and hail storms throughout the United States. Catastrophe losses in 2016 primarily resulted from Hurricane Matthew, wind and hail storms in several regions of the United States, flooding in the Southeast region of the United States, wildfires in Canada and Tennessee, and winter storms in the eastern United States.

Factors contributing to net favorable prior year reserve development during the years ended December 31, 2018, 2017 and 2016 are discussed in more detail in note 7 of notes to the consolidated financial statements.

Significant Catastrophe Losses

The Company defines a “catastrophe” as an event that:

- is designated a catastrophe by internationally recognized organizations that track and report on insured losses resulting from catastrophic events, such as Property Claim Services (PCS) for events in the United States and Canada; and
- the Company’s estimates of its ultimate losses before reinsurance and taxes exceed a pre-established dollar threshold.

The Company’s threshold for disclosing catastrophes is primarily determined at the reportable segment level. If a threshold for one segment or a combination thereof is exceeded and the other segments have losses from the same event, losses from the event are identified as catastrophe losses in the segment results and for the consolidated results of the Company. Additionally, an aggregate threshold is applied for International business across all reportable segments. The threshold for 2018 ranged from approximately $18 million to $30 million of losses before reinsurance and taxes.

The following table presents the amount of losses recorded by the Company for significant catastrophes that occurred in 2018, 2017 and 2016, the amount of net unfavorable (favorable) prior year reserve development recognized in 2018 and 2017 for catastrophes that occurred in 2017 and 2016, and the estimate of ultimate losses for those catastrophes at December 31, 2018, 2017 and 2016. For purposes of the table, a significant catastrophe is an event for which the Company estimates its ultimate losses will be $100 million or more after reinsurance and before taxes.

	Losses Incurred / Unfavorable (Favorable) Prior Year Reserve Development for the Year Ended December 31,			Estimated Ultimate Losses at December 31,		
(in millions, pre-tax and net of reinsurance)	2018	2017	2016	2018	2017	2016
2016						
PCS Serial Number:						
21 — Severe wind and hail storms	$ (2)	$ (2)	$ 150	$ 146	$ 148	$ 150
25 — Severe wind and hail storms	(7)	10	168	171	178	168
2017						
PCS Serial Number:						
22 — Severe wind and hail storms	(2)	111	n/a	109	111	n/a
32 — Severe wind and hail storms	19	210	n/a	229	210	n/a
43 — Hurricane Harvey	(24)	254	n/a	230	254	n/a
44 — Hurricane Irma	(28)	187	n/a	159	187	n/a
48 — California wildfire—Tubbs fire	1	507	n/a	508	507	n/a
2018						
PCS Serial Number:						
15 — Winter storm	144	n/a	n/a	144	n/a	n/a
17 — Severe wind and hail storms	111	n/a	n/a	111	n/a	n/a
33 — Severe wind and hail storms	117	n/a	n/a	117	n/a	n/a
52 — Hurricane Florence	106	n/a	n/a	106	n/a	n/a
57 — Hurricane Michael	158	n/a	n/a	158	n/a	n/a
59 — California wildfire - Camp fire	334	n/a	n/a	334	n/a	n/a
60 — California wildfire - Woosley fire	119	n/a	n/a	119	n/a	n/a

n/a: not applicable.

Amortization of Deferred Acquisition Costs

Amortization of deferred acquisition costs in 2018 was $4.38 billion, $215 million or 5% higher than in 2017. Amortization of deferred acquisition costs in 2017 was $4.17 billion, $181 million or 5% higher than in 2016. Amortization of deferred acquisition costs is discussed in more detail in the segment discussions that follow.

General and Administrative Expenses

General and administrative expenses in 2018 were $4.30 billion, $127 million or 3% higher than in 2017, primarily reflecting the impacts of (i) the acquisition of Simply Business in August 2017 and (ii) variable costs associated with higher business volumes. General and administrative expenses in 2017 were $4.17 billion, comparable with 2016. General and administrative expenses are discussed in more detail in the segment discussions that follow.

Interest Expense

Interest expense in 2018, 2017 and 2016 was $352 million, $369 million and $363 million, respectively.

Income Tax Expense

Income tax expense in 2018 was $438 million, $236 million or 35% lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the TCJA and (ii) the net charge of $129 million in 2017 as part of the TCJA described above, partially offset by (iii) the $231 million increase in income before income taxes in 2018 and (iv) the $39 million reduction in income tax expense in 2017 as a result of the resolution of prior year tax matters. Income tax expense in 2017 was $674 million, $365 million or 35% lower than in 2016, primarily reflecting the impacts of (i) the $1.32 billion decrease in income before income taxes in 2017 and (ii) the $39 million reduction in income tax expense resulting from the resolution of prior year tax matters, partially offset by (iii) the net charge of $129 million as part of the TCJA described above.

The Company’s effective tax rate was 15%, 25% and 26% in 2018, 2017 and 2016, respectively. The effective tax rates in all years were lower than the respective statutory rate of 21% in 2018 and 35% in both 2017 and 2016, primarily due to the impact of tax-exempt investment income on the calculation of the Company’s income tax provision. The effective tax rate in 2018 also included the impact of the reduction in income tax expense resulting from the Company's $200 million voluntary contribution to its qualified domestic pension plan in 2018, which provided a 35% tax benefit rather than a 21% tax benefit. In addition, the effective tax rate in 2017 reflected the net charge related to TCJA and the impact of the resolution of prior year tax matters, both discussed above.

Combined Ratio

The combined ratio of 96.9% in 2018 was 1.0 points lower than the combined ratio of 97.9% in 2017. The loss and loss adjustment expense ratio of 66.8% in 2018 was 0.4 points lower than the loss and loss adjustment expense ratio of 67.2% in 2017. The underwriting expense ratio of 30.1% in 2018 was 0.6 points lower than the underwriting expense ratio of 30.7% in 2017.

Catastrophe losses in 2018 and 2017 accounted for 6.3 points and 7.6 points, respectively, of the combined ratio. Net favorable prior year reserve development in 2018 and 2017 provided 1.9 points and 2.3 points of benefit, respectively, to the combined ratio. The combined ratio excluding prior year reserve development and catastrophe losses ("underlying combined ratio") in 2018 was 0.1 points lower than the 2017 ratio on the same basis.

The combined ratio of 97.9% in 2017 was 5.9 points higher than the combined ratio of 92.0% in 2016. The loss and loss adjustment expense ratio of 67.2% in 2017 was 6.7 points higher than the loss and loss adjustment expense ratio of 60.5% in 2016. The underwriting expense ratio of 30.7% in 2017 was 0.8 points lower than the underwriting expense ratio of 31.5% in 2016.

Catastrophe losses in 2017 and 2016 accounted for 7.6 points and 3.6 points, respectively, of the combined ratio. Net favorable prior year reserve development in 2017 and 2016 provided 2.3 points and 3.2 points of benefit, respectively, to the combined ratio. The underlying combined ratio in 2017 was 1.0 points higher than the 2016 ratio on the same basis, primarily reflecting (i) loss cost trends that modestly exceeded earned pricing in Business Insurance, (ii) higher non-catastrophe fire-related losses in Business Insurance and (iii) higher non-catastrophe weather-related losses in Personal Insurance.

Written Premiums

Consolidated gross and net written premiums were as follows:

	Gross Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Business Insurance	$16,255	$15,473	$15,232
Bond & Specialty Insurance	2,665	2,480	2,372
Personal Insurance	10,332	9,695	8,891
Total	$29,252	$27,648	$26,495
	Net Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Business Insurance	$14,956	$14,270	$13,900
Bond & Specialty Insurance	2,528	2,359	2,271
Personal Insurance	10,224	9,590	8,787
Total	$27,708	$26,219	$24,958

Gross and net written premiums in 2018 both increased by 6% over 2017. Gross and net written premiums in 2017 increased by 4% and 5%, respectively, over 2016. Factors contributing to the changes in gross and net written premiums in each segment in 2018 and 2017 as compared with the respective prior year are discussed in more detail

in the segment discussions that follow.

RESULTS OF OPERATIONS BY SEGMENT

Business Insurance

Results of Business Insurance were as follows:

(for the year ended December 31, in millions)	2018	2017	2016
Revenues			
Earned premiums	$14,722	$14,146	$13,855
Net investment income	1,833	1,786	1,701
Fee income	412	430	442
Other revenues	112	69	168
Total revenues	17,079	16,431	16,166
Total claims and expenses	15,182	14,370	13,528
Segment income before income taxes	1,897	2,061	2,638
Income tax expense	259	448	656
Segment income	$1,638	$1,613	$1,982
Loss and loss adjustment expense ratio	67.8 %	65.9 %	61.7 %
Underwriting expense ratio	31.3	31.9	32.4
Combined ratio	99.1 %	97.8 %	94.1 %

Overview

Segment income in 2018 was $1.64 billion, $25 million or 2% higher than segment income of $1.61 billion in 2017. The decrease in segment income before income taxes primarily reflected the pre-tax impacts of (i) lower net favorable prior year reserve development and (ii) lower underlying underwriting margins, partially offset by (iii) lower catastrophe losses and (iv) higher net investment income. Catastrophe losses in 2018 and 2017 were $639 million and $858 million, respectively. Net favorable prior year reserve development in 2018 and 2017 was $142 million and $439 million, respectively. The lower underlying underwriting margins primarily reflected higher loss estimates in the domestic commercial automobile product line for bodily injury liability coverages. Income tax expense in 2018 was lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the TCJA and (ii) the decrease in segment income before income taxes, partially offset by (iii) the $15 million reduction in income taxes as a result of the resolution of prior year tax matters in 2017.

Segment income in 2017 was $1.61 billion, $369 million or 19% lower than segment income of $1.98 billion in 2016. The decrease in segment income before income taxes primarily reflected the pre-tax impacts of (i) significantly higher catastrophe losses, (ii) lower other income due to a favorable settlement of a reinsurance dispute in 2016 and (iii) lower underlying underwriting margins, partially offset by (iv) higher net investment income. Catastrophe losses in 2017 and 2016 were $858 million and $463 million, respectively. Net favorable prior year reserve development in 2017 and 2016 was $439 million and $424 million, respectively. The lower underlying underwriting margins primarily resulted from the impacts of (i) loss cost trends that modestly exceeded earned pricing and (ii) higher non-catastrophe fire-related losses. Income tax expense in 2017 was lower than in 2016, primarily reflecting the impacts of (i) the decrease in segment income before income taxes and (ii) the $15 million reduction in income taxes as a result of the resolution of prior year tax matters in 2017.

Revenues

Earned Premiums

Earned premiums of $14.72 billion in 2018 were $576 million or 4% higher than in 2017. Earned premiums of $14.15 billion in 2017 were $291 million or 2% higher than in 2016. The increase in earned premiums in both 2018 and 2017 reflected increases in net written premiums over the preceding twelve months.

Net Investment Income

Net investment income in 2018 was $1.83 billion, $47 million or 3% higher than in 2017. Net investment income in 2017 was $1.79 billion, $85 million or 5% higher than in 2016. Refer to the “Net Investment Income” section of the “Consolidated Results of Operations” discussion for a description of the factors contributing to the increases in the Company’s consolidated net investment income in 2018 and 2017 compared with the respective prior years. In addition, refer to note 2 of notes to the consolidated financial statements for a discussion of the Company’s net investment income allocation methodology.

Fee Income

National Accounts is the primary source of fee income due to revenue from its large deductible policies and service businesses, which include risk management, claims administration, loss control and risk management information services provided to large companies that choose to self-insure a portion of their insurance risks, as well as claims and policy management services to workers’ compensation residual market pools. Fee income in 2018 was $412 million, $18 million or 4% lower than in 2017, primarily reflecting lower claim volume in the large deductible business and lower serviced premium volume in the workers' compensation residual market pools. Fee income in 2017 was $430 million, $12 million or 3% lower than in 2016, primarily reflecting lower serviced premium volume in the workers’ compensation residual market pools.

Other Revenues

Other revenues in all years presented included installment premium charges and other policyholder service charges. Other revenues in 2018 and 2017 included revenues from Simply Business, which was acquired in August 2017. Other revenues in 2017 and 2016 also included gains related to the settlement of reinsurance disputes. Additionally, other revenues in 2016 included proceeds from the favorable settlement of a claims-related legal matter.

Claims and Expenses

Claims and Claim Adjustment Expenses

Claims and claim adjustment expenses in 2018 were $10.17 billion, $650 million or 7% higher than in 2017, primarily reflecting the impacts of (i) higher business volumes, (ii) lower net favorable prior year reserve development, (iii) loss cost trends and (iv) higher loss estimates in the domestic commercial automobile product line for bodily injury liability coverages, partially offset by (v) lower catastrophe losses. Claims and claim adjustment expenses in 2017 were $9.52 billion, $768 million or 9% higher than in 2016, primarily reflecting the impacts of (i) significantly higher catastrophe losses, (ii) loss cost trends, (iii) higher business volumes and (iv) higher non-catastrophe fire-related losses.

Factors contributing to net favorable prior year reserve development during the years ended December 31, 2018, 2017 and 2016 are discussed in more detail in note 7 of notes to the consolidated financial statements.

Amortization of Deferred Acquisition Costs

Amortization of deferred acquisition costs in 2018 was $2.39 billion, $102 million or 4% higher than in 2017. Amortization of deferred acquisition costs in 2017 was $2.29 billion, $65 million or 3% higher than in 2016. The increases in both 2018 and 2017 were generally consistent with the increases in earned premiums.

General and Administrative Expenses

General and administrative expenses in 2018 were $2.62 billion, $60 million or 2% higher than in 2017, primarily reflecting the impact of the acquisition of Simply Business in August 2017. General and administrative expenses in 2017 of $2.56 billion were comparable with 2016.

Income Tax Expense

Income tax expense in 2018 was $259 million, $189 million or 42% lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the TCJA and (ii) the $164 million decrease in income before income taxes in 2018, partially offset by (iii) the $15 million reduction in income tax expense in 2017 resulting from the resolution of prior year tax matters. Income tax expense in 2017 was $448 million, $208 million or 32% lower than in 2016, primarily reflecting the impact of the $577 million decrease in income before income taxes in 2017 and the $15 million reduction in income tax expense resulting from the resolution of prior year tax matters.

Combined Ratio

The combined ratio of 99.1% in 2018 was 1.3 points higher than the combined ratio of 97.8% in 2017. The loss and loss adjustment expense ratio of 67.8% in 2018 was 1.9 points higher than the loss and loss adjustment expense ratio of 65.9% in 2017. The underwriting expense ratio of 31.3% in 2018 was 0.6 points lower than the underwriting expense ratio of 31.9% in 2017.

Catastrophe losses in 2018 and 2017 accounted for 4.4 points and 6.0 points, respectively, of the combined ratio. Net favorable prior year reserve development in 2018 and 2017 provided 1.0 points and 3.1 points of benefit, respectively, to the combined ratio. The underlying combined ratio in 2018 was 0.8 points higher than the 2017 ratio on the same basis, primarily reflecting higher loss estimates in the domestic commercial automobile product line for bodily injury liability coverages.

The combined ratio of 97.8% in 2017 was 3.7 points higher than the combined ratio of 94.1% in 2016. The loss and loss adjustment expense ratio of 65.9% in 2017 was 4.2 points higher than the loss and loss adjustment expense ratio of 61.7% in 2016. The underwriting expense ratio of 31.9% in 2017 was 0.5 points lower than the underwriting expense ratio of 32.4% in 2016.

Catastrophe losses in 2017 and 2016 accounted for 6.0 points and 3.4 points of the combined ratio, respectively. Net favorable prior year reserve development provided 3.1 points of benefit to the combined ratio in both 2017 and 2016. The underlying combined ratio in 2017 was 1.1 points higher than the 2016 ratio on the same basis, primarily reflecting the impacts of (i) loss cost trends that modestly exceeded earned pricing and (ii) higher non-catastrophe fire-related losses.

Written Premiums

Business Insurance's gross and net written premiums by market were as follows:

	Gross Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Select Accounts	$2,841	$2,817	$2,792
Middle Market	8,537	8,051	7,691
National Accounts	1,601	1,556	1,683
National Property and Other	2,036	1,902	1,989
Total Domestic	15,015	14,326	14,155
International	1,240	1,147	1,077
Total Business Insurance	$16,255	$15,473	$15,232

	Net Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Select Accounts	$2,828	$2,800	$2,729
Middle Market	8,214	7,756	7,379
National Accounts	1,025	1,010	1,058
National Property and Other	1,805	1,691	1,779
Total Domestic	13,872	13,257	12,945
International	1,084	1,013	955
Total Business Insurance	$14,956	$14,270	$13,900

Gross written premiums in 2018 and 2017 increased by 5% and 2%, respectively, over the respective prior year periods. Net written premiums in 2018 and 2017 increased by 5% and 3%, respectively, over the respective prior year amounts.

Select Accounts. Net written premiums of $2.83 billion in 2018 increased by 1% over 2017. Business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive and were higher than in 2017. New business premiums in 2018 increased over 2017. Net written premiums of $2.80 billion in 2017 increased by 3% over 2016. Business retention rates remained strong in 2017. Renewal premium changes in 2017 remained positive but were lower than in 2016. New business premiums in 2017 increased over 2016.

Middle Market. Net written premiums of $8.21 billion in 2018 increased by 6% over 2017. Business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive and were higher than in 2017. New business premiums in 2018 were lower than in 2017. Net written premiums of $7.76 billion in 2017 increased by 5% over 2016. Business retention rates remained strong in 2017. Renewal premium changes in 2017 remained positive and were higher than in 2016. New business premiums in 2017 increased slightly over 2016.

National Accounts. Net written premiums of $1.03 billion in 2018 increased by 1% over 2017. Business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive and were higher than in 2017. New business premiums in 2018 decreased from 2017. Net written premiums of $1.01 billion in 2017 decreased by 5% from 2016. Business retention rates remained strong in 2017. Renewal premium changes in 2017 remained slightly positive but were lower than in 2016. New business premiums in 2017 decreased from 2016.

National Property and Other. Net written premiums of $1.81 billion in 2018 increased by 7% over 2017. Business retention rates were strong in 2018 and increased over 2017. Renewal premium changes in 2018 remained positive and were higher than in 2017. New business premiums in 2018 increased over 2017. Net written premiums of $1.69 billion in 2017 decreased by 5% from 2016. Business retention rates in 2017 declined from 2016. Renewal premium changes in 2017 remained positive and were higher than in 2016. New business premiums in 2017 decreased from 2016.

International. Net written premiums of $1.08 billion in 2018 increased by 7% over 2017, primarily driven by increases in Canada and in the Company's operations at Lloyd's. Net written premiums of $1.01 billion in 2017 increased by 6% over 2016, primarily driven by increases in the Company’s European operations, including Lloyd’s, as well as in Canada.

Bond & Specialty Insurance

Results of Bond & Specialty Insurance were as follows:

(for the year ended December 31, in millions)	2018	2017	2016
Revenues			
Earned premiums	$2,420	$2,307	$2,260
Net investment income	233	228	239
Other revenues	23	24	21
Total revenues	2,676	2,559	2,520
Total claims and expenses	1,685	1,795	1,499
Segment income before income taxes	991	764	1,021
Income tax expense	198	208	309
Segment income	$793	$556	$712
Loss and loss adjustment expense ratio	31.5 %	38.6 %	27.4 %
Underwriting expense ratio	37.5	38.8	38.3
Combined ratio	69.0 %	77.4 %	65.7 %

Overview

Segment income in 2018 was $793 million, $237 million or 43% higher than segment income of $556 million in 2017. The increase in segment income before income taxes primarily reflected the pre-tax impacts of (i) higher net favorable prior year reserve development and (ii) higher underlying underwriting margins. Net favorable prior year reserve development in 2018 and 2017 was $266 million and $140 million, respectively. Catastrophe losses in 2018 and 2017 were $16 million and $6 million, respectively. The higher underlying underwriting margins primarily resulted from the impacts of (i) a lower level of international

surety losses and (ii) higher business volumes. Income tax expense in 2018 was lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the TCJA, partially offset by (ii) the increase in segment income before income taxes and (iii) the $17 million reduction in income tax expense in 2017 as a result of the resolution of prior year tax matters.

Segment income in 2017 was $556 million, $156 million or 22% lower than segment income of $712 million in 2016. The decrease in segment income before income taxes primarily reflected the pre-tax impacts of (i) lower net favorable prior year reserve development and (ii) lower underlying underwriting margins. Net favorable prior year reserve development in 2017 and 2016 was $140 million and $350 million, respectively. Catastrophe losses in both 2017 and 2016 were $6 million. The lower underlying underwriting margins primarily reflected a higher level of international surety losses. Income tax expense in 2017 was lower than in 2016, primarily reflecting the impacts of (i) the decrease in segment income before income taxes and (ii) the $17 million reduction in income tax expense in 2017 as a result of the resolution of prior year tax matters.

Revenues

Earned Premiums

Earned premiums in 2018 were $2.42 billion, $113 million or 5% higher than in 2017. Earned premiums in 2017 were $2.31 billion, $47 million or 2% higher than in 2016. The increase in earned premiums in both 2018 and 2017 reflected increases in net written premiums over the preceding twelve months.

Net Investment Income

Net investment income in 2018 was $233 million, $5 million or 2% higher than in 2017. Net investment income in 2017 was $228 million, $11 million or 5% lower than in 2016. Included in Bond & Specialty Insurance are certain legal entities whose invested assets and related net investment income are reported exclusively in this segment and not allocated among all business segments. As a result, reported net investment income in Bond & Specialty Insurance reflects a significantly smaller proportion of allocated net investment income, including net investment income from the Company’s non-fixed maturity investments that experienced a decrease in investment income in 2018 and an increase in investment income in 2017. Refer to the “Net Investment Income” section of the “Consolidated Results of Operations” discussion for a description of the factors contributing to the increases in the Company’s consolidated net investment income in 2018 and 2017 compared with the respective prior years. In addition, refer to note 2 of notes to the consolidated financial statements for a discussion of the Company’s net investment income allocation methodology.

Claims and Expenses

Claims and Claim Adjustment Expenses

Claims and claim adjustment expenses in 2018 were $772 million, $127 million or 14% lower than in 2017, primarily reflecting the impacts of (i) higher net favorable prior year reserve development and (ii) a lower level of international surety losses, partially offset by (iii) higher business volumes. Claims and claim adjustment expenses in 2017 were $899 million, $266 million or 42% higher than in 2016, primarily reflecting (i) lower net favorable prior year reserve development and (ii) a higher level of international surety losses.

Factors contributing to net favorable prior year reserve development during the years ended December 31, 2018, 2017 and 2016 are discussed in more detail in note 7 of notes to the consolidated financial statements.

Amortization of Deferred Acquisition Costs

Amortization of deferred acquisition costs in 2018 was $454 million, $22 million or 5% higher than in 2017. Amortization of deferred acquisition costs in 2017 was $432 million, $11 million or 3% higher than in 2016. The increases in both years were generally consistent with the increases in earned premiums.

General and Administrative Expenses

General and administrative expenses in 2018 were $459 million, $5 million or 1% lower than in 2017. General and administrative expenses in 2017 were $464 million, $19 million or 4% higher than in 2016, primarily reflecting higher employee and technology related expenses.

Income Tax Expense

Income tax expense in 2018 was $198 million, $10 million or 5% lower than in 2017, primarily reflecting the impacts of (i) the lower U.S. corporate income tax rate resulting from the TCJA, partially offset by (ii) the $227 million increase in income before income taxes in 2018 and (iii) the $17 million reduction in income tax expense in 2017 resulting from the resolution of prior year tax matters. Income tax expense in 2017 was $208 million, $101 million or 33% lower than in 2016, primarily reflecting the impact of the $257 million decrease in income before income taxes in 2017 and the $17 million reduction in income tax expense resulting from the resolution of prior year tax matters.

Combined Ratio

The combined ratio of 69.0% in 2018 was 8.4 points lower than the combined ratio of 77.4% in 2017. The loss and loss adjustment expense ratio of 31.5% in 2018 was 7.1 points lower than the loss and loss adjustment expense ratio of 38.6% in 2017. The underwriting expense ratio of 37.5% in 2018 was 1.3 points lower than the underwriting expense ratio of 38.8% in 2017.

Net favorable prior year reserve development in 2018 and 2017 provided 11.0 points and 6.1 points of benefit, respectively, to the combined ratio. Catastrophe losses in 2018 and 2017 accounted for 0.6 points and 0.3 points, respectively, of the combined ratio. The underlying combined ratio in 2018 was 3.8 points lower than the 2017 ratio on the same basis, primarily reflecting the impacts of (i) a lower level of international surety losses and (ii) higher levels of earned premiums.

The combined ratio of 77.4% in 2017 was 11.7 points higher than the combined ratio of 65.7% in 2016. The loss and loss adjustment expense ratio of 38.6% in 2017 was 11.2 points higher than the loss and loss adjustment expense ratio of 27.4% in 2016. The underwriting expense ratio of 38.8% in 2017 was 0.5 points higher than the underwriting expense ratio of 38.3% in 2016.

Net favorable prior year reserve development in 2017 and 2016 provided 6.1 points and 15.5 points of benefit, respectively, to the combined ratio. Catastrophe losses in 2017 and 2016 accounted for 0.3 points of the combined ratio in each year. The underlying combined ratio in 2017 was 2.3 points higher than the 2016 ratio on the same basis, primarily reflecting the impact of a higher level of international surety losses.

Written Premiums

Bond & Specialty Insurance's gross and net written premiums were as follows:

	Gross Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Management Liability	$1,523	$1,422	$1,387
Surety	887	844	796
Total Domestic	2,410	2,266	2,183
International	255	214	189
Total Bond & Specialty Insurance	$2,665	$2,480	$2,372

	Net Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Management Liability	$1,455	$1,367	$1,342
Surety	835	793	757
Total Domestic	2,290	2,160	2,099
International	238	199	172
Total Bond & Specialty Insurance	$2,528	$2,359	$2,271

Gross and net written premiums in 2018 both increased by 7% over 2017. Gross and net written premiums in 2017 increased by 5% and 4%, respectively, over 2016.

Domestic. Net written premiums in 2018 were $2.29 billion, $130 million or 6% higher than in 2017. Excluding the surety line of business, for which the following are not relevant measures, business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive but were lower than in 2017. New business premiums in 2018 increased over 2017. Net written premiums of $2.16 billion in 2017 increased by 3% over 2016. Excluding the surety line of business, for which the following are not relevant measures, business retention rates remained strong in 2017. Renewal premium changes in 2017 remained positive and were comparable with 2016. New business premiums in 2017 increased over 2016.

International. Net written premiums in 2018 were $238 million, $39 million or 20% higher than in 2017, primarily driven by increases in the United Kingdom. Net written premiums of $199 million in 2017 increased by 16% over 2016, driven by increases in the United Kingdom and Canada.

Personal Insurance

Results of Personal Insurance were as follows:

(for the year ended December 31, in millions)	2018	2017	2016
Revenues			
Earned premiums	$9,917	$9,230	$8,419
Net investment income	408	383	362
Fee income	20	17	16
Other revenues	66	60	63
Total revenues	10,411	9,690	8,860
Total claims and expenses	10,072	9,606	8,151
Segment income before income taxes	339	84	709
Income tax expense (benefit)	42	(44)	192
Segment income	$297	$128	$517
Loss and loss adjustment expense ratio	74.1 %	76.3 %	67.5 %
Underwriting expense ratio	26.5	26.8	28.3
Combined ratio	100.6 %	103.1 %	95.8 %

Overview

Segment income in 2018 was $297 million, $169 million or 132% higher than segment income of $128 million in 2017. The increase in segment income before income taxes primarily reflected the pre-tax impacts of (i) higher underlying underwriting margins, (ii) higher net favorable prior year reserve development, (iii) higher net investment income and (iv) lower catastrophe losses. Net favorable prior year reserve development in 2018 and 2017 was $109 million and $13 million, respectively. Catastrophe losses in 2018 and 2017 were $1.06 billion and $1.09 billion, respectively. The higher underlying underwriting margins primarily resulted from the impacts of (i) earned pricing that exceeded loss cost trends in Agency Automobile, partially offset by (ii) higher non-catastrophe weather-related losses and non-weather related losses in Agency Homeowners and Other. Income tax expense in 2018 was higher than in 2017, primarily reflecting the impacts of (i) the increase in segment income before income taxes and (ii) the $7 million reduction in income tax expense in 2017 as a result of the resolution of prior year tax matters, partially offset by (iii) the lower U.S. corporate income tax rate resulting from the TCJA.

Segment income in 2017 was $128 million, $389 million or 75% lower than segment income of $517 million in 2016. The decrease in segment income before income taxes primarily reflected the pre-tax impacts of (i) significantly higher catastrophe losses, partially offset by (ii) higher net investment income, (iii) higher underlying underwriting margins and (iv) net favorable prior year reserve development as compared to net unfavorable prior year reserve development in 2016. Catastrophe losses in 2017 and 2016 were $1.09 billion and $408 million, respectively. Net favorable prior

year reserve development in 2017 was $13 million, compared with net unfavorable prior year reserve development of $3 million in 2016. The higher underlying underwriting margins primarily resulted from the impacts of (i) increased business volumes and (ii) earned pricing that modestly exceeded loss cost trends, partially offset by (iii) higher non-catastrophe weather-related losses. Income tax expense in 2017 was lower than in 2016, primarily reflecting the impacts of (i) the decrease in segment income before income taxes and (ii) the $7 million reduction in income tax expense as a result of the resolution of prior year tax matters.

Revenues

Earned Premiums

Earned premiums in 2018 were $9.92 billion, $687 million or 7% higher than in 2017. Earned premiums in 2017 were $9.23 billion, $811 million or 10% higher than in 2016. The increase in earned premiums in both 2018 and 2017 reflected increases in net written premiums over the preceding twelve months.

Net Investment Income

Net investment income in 2018 was $408 million, $25 million or 7% higher than in 2017. Net investment income in 2017 was $383 million, $21 million or 6% higher than in 2016. Refer to the “Net Investment Income” section of “Consolidated Results of Operations” for a discussion of the increases in the Company’s net investment income in 2018 and 2017 as compared with the respective prior year. In addition, refer to note 2 of notes to the consolidated financial statements for a discussion of the Company’s net investment income allocation methodology.

Other Revenues

Other revenues in all years presented included installment premium charges.

Claims and Expenses

Claims and Claim Adjustment Expenses

Claims and claim adjustment expenses in 2018 were $7.35 billion, $301 million or 4% higher than in 2017, primarily reflecting the impacts of (i) higher business volumes, (ii) loss cost trends and (iii) higher non-catastrophe weather-related losses and non-weather related losses in Agency Homeowners and Other, partially offset by (iv) higher net favorable prior year reserve development and (v) lower catastrophe losses. Claims and claim adjustment expenses in 2017 were $7.05 billion, $1.36 billion or 24% higher than in 2016, primarily reflecting the impacts of (i) significantly higher catastrophe losses, (ii) higher business volumes, (iii) loss cost trends and (iv) higher non-catastrophe weather-related losses, partially offset by (v) net favorable prior year reserve development as compared with net unfavorable prior year reserve development in 2016.

Factors contributing to prior year reserve development during the year ended December 31, 2018 are discussed in more detail in note 7 of notes to the consolidated financial statements. Net prior year reserve development in 2017 and 2016 was not significant.

Amortization of Deferred Acquisition Costs

Amortization of deferred acquisition costs in 2018 was $1.54 billion, $91 million or 6% higher than in 2017. Amortization of deferred acquisition costs in 2017 was $1.45 billion, $105 million or 8% higher than in 2016. The increases in both 2018 and 2017 were generally consistent with the increases in earned premiums.

General and Administrative Expenses

General and administrative expenses in 2018 were $1.19 billion, $74 million or 7% higher than in 2017, primarily reflecting the impact of variable costs associated with higher business volumes. General and administrative expenses in 2017 were $1.11 billion, $13 million or 1% lower than in 2016.

Income Tax Expense (Benefit)

Income tax expense in 2018 was $42 million, compared with an income tax benefit of $(44) million in 2017, primarily reflecting the impacts of (i) the $255 million increase in income before income taxes in 2018 and (ii) the $7 million reduction in income tax expense in 2017 resulting from the resolution of prior year tax matters, partially offset by (iii) the lower U.S. corporate income tax rate resulting from the TCJA. The income tax benefit in 2017 was $(44) million, compared with income tax expense of $192 million in 2016, primarily reflecting the impacts of (i) the $625 million decrease in income before income taxes in 2017 and (ii) the $7 million reduction in income tax expense resulting from the resolution of prior year tax matters. The level of income tax expense (benefit) in all years reflected the impact of

tax-exempt investment income on the calculation of the Company's tax provision.

Combined Ratio

The combined ratio of 100.6% in 2018 was 2.5 points lower than the combined ratio of 103.1% in 2017. The loss and loss adjustment expense ratio of 74.1% in 2018 was 2.2 points lower than the loss and loss adjustment expense ratio of 76.3% in 2017. The underwriting expense ratio of 26.5% in 2018 was 0.3 points lower than the underwriting expense ratio of 26.8% in 2017.

Catastrophe losses accounted for 10.7 points and 11.7 points of the combined ratio in 2018 and 2017, respectively. Net favorable prior year reserve development in 2018 and 2017 provided 1.1 and 0.1 points of benefit, respectively, to the combined ratio. The underlying combined ratio in 2018 was 0.5 points lower than the 2017 ratio on the same basis, primarily reflecting the impacts of (i) earned pricing that exceeded loss cost trends in Agency Automobile and (ii) the benefit of higher levels of earned premiums on the underwriting expense ratio, partially offset by (iii) higher non-catastrophe weather-related losses and non-weather related losses in Agency Homeowners and Other.

The combined ratio of 103.1% in 2017 was 7.3 points higher than the combined ratio of 95.8% in 2016. The loss and loss adjustment expense ratio of 76.3% in 2017 was 8.8 points higher than the loss and loss adjustment expense ratio of 67.5% in 2016. The underwriting expense ratio of 26.8% in 2017 was 1.5 points lower than the underwriting expense ratio of 28.3% in 2016.

Catastrophe losses accounted for 11.7 points and 4.9 points of the combined ratio in 2017 and 2016, respectively. Net favorable prior year reserve development in 2017 provided 0.1 points of benefit to the loss and loss adjustment expense ratio. Net unfavorable prior year reserve development in 2016 had no impact on the loss and loss adjustment expense ratio. The underlying combined ratio in 2017 was 0.6 points higher than the 2016 ratio on the same basis, primarily reflecting the impacts of (i) higher non-catastrophe weather-related losses, (ii) the tenure impact of higher levels of new business in recent years in the Automobile product line and (iii) a higher level of automobile business relative to homeowners and other business, partially offset by (iv) the benefit of higher levels of earned premiums on the underwriting expense ratio and (v) earned pricing that modestly exceeded loss cost trends.

Written Premiums

Personal Insurance's gross and net written premiums were as follows:

	Gross Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Agency:			
Automobile	$4,998	$4,671	$4,123
Homeowners and Other	4,213	4,000	3,843
Total Agency	9,211	8,671	7,966
Direct-to-Consumer	398	362	310
Total Domestic	9,609	9,033	8,276
International	723	662	615
Total Personal Insurance	$10,332	$9,695	$8,891

	Net Written Premiums		
(for the year ended December 31, in millions)	2018	2017	2016
Domestic:			
Agency:			
Automobile	$4,972	$4,646	$4,103
Homeowners and Other	4,148	3,933	3,772
Total Agency	9,120	8,579	7,875
Direct-to-Consumer	396	361	309
Total Domestic	9,516	8,940	8,184

International	708	650	603
Total Personal Insurance	$10,224	$9,590	$8,787

Domestic Agency Written Premiums
Personal Insurance's domestic Agency business comprises business written through agents, brokers and other intermediaries.

Domestic Agency gross and net written premiums in 2018 were both 6% higher than in 2017.

Domestic Agency Automobile net written premiums of $4.97 billion in 2018 were 7% higher than in 2017. Business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive but were lower than in 2017. New business premiums in 2018 decreased from 2017.

Domestic Agency Homeowners and Other net written premiums of $4.15 billion in 2018 were 5% higher than in 2017. Business retention rates remained strong in 2018. Renewal premium changes in 2018 remained positive and were higher than in 2017. New business premiums in 2018 increased over 2017.

Domestic Agency gross and net written premiums in 2017 were both 9% higher than in 2016.

Domestic Agency Automobile net written premiums of $4.65 billion in 2017 were 13% higher than in 2016. Business retention rates remained strong in 2017. Renewal premium changes in 2017 remained positive and were higher than in 2016. New business premiums in 2017 decreased from 2016.

Domestic Agency Homeowners and Other net written premiums of $3.93 billion in 2017 were 4% higher than in 2016. Business retention rates remained strong in 2017. Renewal premium changes in 2017 remained positive but were lower than in 2016. New business premiums in 2017 increased over 2016.

For its domestic Agency business, Personal Insurance had approximately 7.2 million and 6.9 million active policies at December 31, 2018 and 2017, respectively.

Direct-to-Consumer and International Written Premiums
Direct-to-Consumer net written premiums in 2018 were 10% higher than in 2017. Direct-to-Consumer net written premiums in 2017 were 17% higher than in 2016. The increase in 2018 was primarily driven by growth in both automobile and homeowners net written premiums. The increase in 2017 was primarily driven by growth in automobile net written premiums.

International net written premiums in 2018 were 9% higher than in 2017, primarily driven by growth in automobile net written premiums. International net written premiums in 2017 were 8% higher than in 2016, primarily driven by growth in automobile net written premiums and the impact of changes in foreign currency exchange rates.

For its International and Direct-to-Consumer business, Personal Insurance had approximately 900,000 and 878,000 active policies at December 31, 2018 and 2017, respectively.

Interest Expense and Other

(for the year ended December 31, in millions)	2018	2017	2016
Income (loss)	$(298)	$(254)	$(244)

The Income (loss) for Interest Expense and Other in 2018 was $44 million higher than in 2017. The Income (loss) for Interest Expense and Other in 2017 was $10 million higher than in 2016. Pre-tax interest expense in 2018, 2017 and 2016 was $352 million, $369 million and $363 million, respectively. After-tax interest expense in 2018, 2017 and 2016 was $278 million, $240 million and $236 million, respectively. The increase in after-tax interest expense in 2018 compared with 2017 primarily reflected the impact of the lower U.S. corporate income tax rate in 2018 resulting from the TCJA.

ASBESTOS CLAIMS AND LITIGATION

The Company believes that the property and casualty insurance industry has suffered from court decisions and other trends that have expanded insurance coverage for asbestos claims far beyond the original intent of insurers and policyholders. The Company has received and continues to receive a significant number of asbestos claims. Factors underlying these claim filings include continued intensive advertising by lawyers seeking asbestos claimants and the focus by plaintiffs on defendants who were not

traditionally primary targets of asbestos litigation. The focus on these defendants is primarily the result of the number of traditional asbestos defendants who have sought bankruptcy protection in previous years. The bankruptcy of many traditional defendants has also caused increased settlement demands against those policyholders who are not in bankruptcy but remain in the tort system. Currently, in many jurisdictions, those who allege very serious injury and who can present credible medical evidence of their injuries are receiving priority trial settings in the courts, while those who have not shown any credible disease manifestation are having their hearing dates delayed or placed on an inactive docket. Prioritizing claims involving credible evidence of injuries, along with the focus on defendants who were not traditionally primary targets of asbestos litigation, contributes to the claims and claim adjustment expense payment patterns experienced by the Company. The Company's asbestos-related claims and claim adjustment expense experience also has been impacted by the unavailability of other insurance sources potentially available to policyholders, whether through exhaustion of policy limits or through the insolvency of other participating insurers.

The Company continues to be involved in disputes, including litigation, with a number of policyholders, some of whom are in bankruptcy over coverage for asbestos-related claims. Many coverage disputes with policyholders are only resolved through settlement agreements. Because many policyholders make exaggerated demands, it is difficult to predict the outcome of settlement negotiations. Settlements involving bankrupt policyholders may include extensive releases which are favorable to the Company, but which could result in settlements for larger amounts than originally anticipated. Although the Company has seen a reduction in the overall risk associated with these disputes, it remains difficult to predict the ultimate cost of these claims. As in the past, the Company will continue to pursue settlement opportunities.

In addition to claims against policyholders, proceedings have been launched directly against insurers, including the Company, by individuals challenging insurers' conduct with respect to the handling of past asbestos claims and by individuals seeking damages arising from alleged asbestos-related bodily injuries. It is possible that the filing of other direct actions against insurers, including the Company, could be made in the future. It is difficult to predict the outcome of these proceedings, including whether the plaintiffs would be able to sustain these actions against insurers based on novel legal theories of liability. The Company believes it has meritorious defenses to any such claims and has received favorable rulings in certain jurisdictions.

On January 29, 2009, the Company and PPG Industries, Inc. (PPG), along with approximately 30 other insurers of PPG, agreed in principle to settle asbestos-related coverage litigation under insurance policies issued to PPG (the "Agreement"). The Agreement was incorporated into the Modified Third Amended Plan of Reorganization ("Amended Plan") proposed as part of the Pittsburgh Corning Corp. (PCC, which is 50% owned by PPG) bankruptcy proceeding. On April 27, 2016, the Amended Plan became effective and all the remaining conditions to the Agreement were satisfied. The Company fully satisfied its obligation under the Agreement by making a discounted payment in the second quarter of 2016. The Company's payment totaled $524 million, of which $518 million was related to asbestos reserves.

Because each policyholder presents different liability and coverage issues, the Company generally reviews the exposure presented by each policyholder at least annually. Among the factors which the Company may consider in the course of this review are: available insurance coverage, including the role of any umbrella or excess insurance the Company has issued to the policyholder; limits and deductibles; an analysis of the policyholder's potential liability; the jurisdictions involved; past and anticipated future claim activity and loss development on pending claims; past settlement values of similar claims; allocated claim adjustment expense; the potential role of other insurance; the role, if any, of non-asbestos claims or potential non-asbestos claims in any resolution process; and applicable coverage defenses or determinations, if any, including the determination as to whether or not an asbestos claim is a products/completed operation claim subject to an aggregate limit and the available coverage, if any, for that claim.

The Company categorizes its asbestos reserves as follows:

	Number of Policyholders		Total Net Paid		Net Asbestos Reserves	
(at and for the year ended December 31, $ in millions)	2018	2017	2018	2017	2018	2017
Policyholders with settlement agreements	11	10	$ 20	$ 12	$53	$32
Home office and field office policyholders	1,466	1,558	188	218	1,089	1,097
Assumed reinsurance and other	—	—	17	41	139	152
Total	1,477	1,568	$ 225	$ 271	$1,281	$1,281

The policyholders with settlement agreements category includes certain policyholders with whom the Company has entered into permanent settlement agreements. Reserves in this category are based on the expected payout for each policyholder under the applicable agreement. The home office and field office category relates to all other policyholders and also includes IBNR reserves and reserves for the costs of defending asbestos-related coverage litigation. IBNR reserves in this category include amounts for

new claims and adverse development on existing policyholders in this category, as well as reserves for claims from policyholders reporting asbestos claims for the first time and for policyholders for which there is, or may be, litigation. Policyholders are identified for the annual home office review based upon, among other factors: a combination of past payments and current case reserves in excess of a specified threshold (currently $100,000), perceived level of exposure, number of reported claims, products/completed operations and potential “non-product” exposures, size of policyholder and geographic distribution of products or services sold by the policyholder. The assumed reinsurance and other category primarily consists of reinsurance of excess coverage, including various pool participations.

In the third quarter of 2018, the Company completed its annual in-depth asbestos claim review, including a review of active policyholders and litigation cases for potential product and “non-product” liability, and noted the continuation of the following trends:

- a high level of litigation activity in certain jurisdictions involving individuals alleging serious asbestos-related illness, primarily involving mesothelioma claims;
- while overall payment patterns have been generally stable, there has been an increase in severity for certain policyholders due to the high level of litigation activity; and
- a moderate level of asbestos-related bankruptcy activity.

In the home office and field office category, which accounts for the vast majority of policyholders with active asbestos-related claims, the number of policyholders tendering asbestos claims for the first time, the number of policyholders with open asbestos claims and net asbestos-related payments declined slightly when compared to 2017. Payments on behalf of policyholders in this category continue to be influenced by a high level of litigation activity in a limited number of jurisdictions where individuals alleging serious asbestos-related injury, primarily mesothelioma, continue to target defendants who were not traditionally primary targets of asbestos litigation.

The Company’s quarterly asbestos reserve reviews include an analysis of exposure and claim payment patterns by policyholder category, as well as recent settlements, policyholder bankruptcies, judicial rulings and legislative actions. The Company also analyzes developing payment patterns among policyholders in the home office and field office category and the assumed reinsurance and other category as well as projected reinsurance billings and recoveries. In addition, the Company reviews its historical gross and net loss and expense paid experience, year-by-year, to assess any emerging trends, fluctuations, or characteristics suggested by the aggregate paid activity. Conventional actuarial methods are not utilized to establish asbestos reserves and the Company’s evaluations have not resulted in a reliable method to determine a meaningful average asbestos defense or indemnity payment.

The completion of these reviews and analyses in 2018, 2017 and 2016 resulted in $225 million increases in each year to the Company’s net asbestos reserves. In each year, the reserve increases were primarily driven by increases in the Company’s estimate of projected settlement and defense costs related to a broad number of policyholders in the home office and field office category. The increase in the estimate of projected settlement and defense costs resulted from payment trends that continue to be higher than previously anticipated due to the impact of the current litigation environment surrounding mesothelioma claims discussed above. Over the past decade, the property and casualty insurance industry, including the Company, has experienced net unfavorable prior year reserve development with regard to asbestos reserves, but the Company believes that over that period there has been a reduction in the volatility associated with the Company’s overall asbestos exposure as the overall asbestos environment has evolved from one dominated by exposure to significant litigation risks, particularly coverage disputes relating to policyholders in bankruptcy who were asserting that their claims were not subject to the aggregate limits contained in their policies, to an environment primarily driven by a frequency of litigation related to individuals with mesothelioma. The Company’s overall view of the current underlying asbestos environment is essentially unchanged from recent periods and there remains a high degree of uncertainty with respect to future exposure to asbestos claims.

Net asbestos paid loss and loss expenses in 2018, 2017 and 2016 were $225 million, $271 million and $708 million, respectively. Net payments in 2016 included the $458 million payment related to the PPG settlement, as described

above. Approximately 9%, 4% and 69% of total net paid losses in 2018, 2017 and 2016, respectively, related to policyholders with whom the Company had entered into settlement agreements limiting the Company's liability. The following table displays activity for asbestos losses and loss expenses and reserves:

(at and for the year ended December 31, in millions)	2018	2017	2016
Beginning reserves:			
Gross	$1,538	$1,512	$1,989
Ceded	(257)	(186)	(179)
Net	1,281	1,326	1,810
Incurred losses and loss expenses:			
Gross	343	340	355
Ceded	(118)	(115)	(130)
Net	225	225	225
Paid loss and loss expenses:			
Gross	273	315	831
Ceded	(48)	(44)	(123)
Net	225	271	708
Foreign exchange and other:			
Gross	—	1	(1)
Ceded	—	—	—
Net	—	1	(1)
Ending reserves:			
Gross	1,608	1,538	1,512
Ceded	(327)	(257)	(186)
Net	$1,281	$1,281	$1,326

See "—Uncertainty Regarding Adequacy of Asbestos and Environmental Reserves."

ENVIRONMENTAL CLAIMS AND LITIGATION

The Company has received and continues to receive claims from policyholders who allege that they are liable for injury or damage arising out of their alleged disposition of toxic substances. These claims are mainly brought pursuant to various state or federal statutes that require a liable party to undertake or pay for environmental remediation. Liability under these statutes may be joint and several with other responsible parties.

The Company has also been, and continues to be, involved in litigation involving insurance coverage issues pertaining to environmental claims. The Company believes that some court decisions have interpreted the insurance coverage to be broader than the original intent of the insurers and policyholders. These decisions often pertain to insurance policies that were issued by the Company prior to the mid-1980s. These decisions continue to be inconsistent and vary from jurisdiction to jurisdiction. Environmental claims, when submitted, rarely indicate the monetary amount being sought by the claimant from the policyholder, and the Company does not keep track of the monetary amount being sought in those few claims which indicate a monetary amount.

The resolution of environmental exposures by the Company generally occurs through settlements with policyholders as opposed to claimants. Generally, the Company strives to extinguish any obligations it may have under any policy issued to the policyholder for past, present and future environmental liabilities and extinguish any pending coverage litigation dispute with the policyholder. This form of settlement is commonly referred to as a "buy-back" of policies for future environmental liability. In addition, many of the agreements have also extinguished any insurance obligation which the Company may have for other claims, including, but not limited to, asbestos and other cumulative injury claims. The Company and its policyholders may also agree to settlements which only extinguish any liability arising from known specified sites or claims. In many instances, these agreements also include indemnities and hold harmless provisions to protect the Company. The Company's general purpose in executing these agreements is to reduce the Company's potential environmental exposure and eliminate the risks presented by coverage litigation with the policyholder and related costs.

In establishing environmental reserves, the Company evaluates the exposure presented by each policyholder and the anticipated cost of resolution, if any. In the course of this analysis, the Company generally considers the probable liability, available coverage and relevant judicial interpretations. In addition, the Company considers the many variables presented, such as: the nature of the

alleged activities of the policyholder at each site; the number of sites; the total number of potentially responsible parties at each site; the nature of the alleged environmental harm and the corresponding remedy at each site; the nature of government enforcement activities at each site; the ownership and general use of each site; the overall nature of the insurance relationship between the Company and the policyholder, including the role of any umbrella or excess insurance the Company has issued to the policyholder; the involvement of other insurers; the potential for other available coverage, including the number of years of coverage; the role, if any, of non-environmental claims or potential non-environmental claims in any resolution process; and the applicable law in each jurisdiction. Conventional actuarial methods are not used to estimate these reserves.

The Company continues to receive notices from policyholders tendering claims for the first time, frequently under policies issued prior to the mid-1980s. These policyholders continue to present smaller exposures, have fewer sites and are lower tier defendants. Further, in many instances, clean-up costs have been reduced because regulatory agencies are willing to accept risk-based site analyses and more efficient clean-up technologies. Over the past several years, the Company has experienced generally favorable trends in the number of new policyholders tendering environmental claims for the first time and in the number of pending declaratory judgment actions relating to environmental matters. However, the degree to which those favorable trends have continued has been less than anticipated. In addition, reserve development on existing environmental claims has been greater than anticipated, driven by claims and legal developments in a limited number of jurisdictions. As a result of these factors, in 2018, 2017 and 2016, the Company increased its net environmental reserves by $55 million, $65 million and $82 million, respectively.

At December 31, 2018, approximately 94% of the net environmental reserve (approximately $314 million) was carried in a bulk reserve and included unresolved environmental claims, incurred but not reported environmental claims and the anticipated cost of coverage litigation disputes relating to these claims. The bulk reserve the Company carries is established and adjusted based upon the aggregate volume of in-process environmental claims and the Company's experience in resolving those claims. The balance, approximately 6% of the net environmental reserve (approximately $20 million), consists of case reserves.

The following table displays activity for environmental losses and loss expenses and reserves:

(at and for the year ended December 31, in millions)	2018	2017	2016
Beginning reserves:			
Gross	$373	$395	$375
Ceded	(13)	(13)	(14)
Net	360	382	361
Incurred losses and loss expenses:			
Gross	71	74	87
Ceded	(16)	(9)	(5)
Net	55	65	82
Paid loss and loss expenses:			
Gross	86	97	67
Ceded	(6)	(9)	(6)
Net	80	88	61
Foreign exchange and other:			
Gross	—	1	—
Ceded	(1)	—	—
Net	(1)	1	—
Ending reserves:			
Gross	358	373	395
Ceded	(24)	(13)	(13)
Net	$334	$360	$382

UNCERTAINTY REGARDING ADEQUACY OF ASBESTOS AND ENVIRONMENTAL RESERVES

As a result of the processes and procedures discussed above, management believes that the reserves carried for asbestos and environmental claims are appropriately established based upon known facts, current law and management's judgment. However, the uncertainties surrounding the final resolution of these claims continue, and it is difficult to determine the ultimate exposure for asbestos and environmental claims and related litigation. As a result, these reserves are subject to revision as new information

becomes available and as claims develop. Changes in the legal, regulatory and legislative environment may impact the resolution of asbestos and environmental claims and result in adverse loss reserve development. The emergence of a greater number of asbestos or environmental claims beyond that which is anticipated may result in adverse loss reserve development. Changes in applicable legislation and future court and regulatory decisions and interpretations, including the outcome of legal challenges to legislative and/or judicial reforms establishing medical criteria for the pursuit of asbestos claims could affect the settlement of asbestos and environmental claims. It is also difficult to predict the ultimate outcome of complex coverage disputes until settlement negotiations near completion and significant legal questions are resolved or, failing settlement, until the dispute is adjudicated. This is particularly the case with policyholders in bankruptcy where negotiations often involve a large number of claimants and other parties and require court approval to be effective. As part of its continuing analysis of asbestos and environmental reserves, the Company continues to study the implications of these and other developments.

Because of the uncertainties set forth above, additional liabilities may arise for amounts in excess of the Company’s current insurance reserves. In addition, the Company’s estimate of claims and claim adjustment expenses may change. These additional liabilities or increases in estimates, or a range of either, cannot now be reasonably estimated and could result in income statement charges that could be material to the Company’s operating results in future periods.

INVESTMENT PORTFOLIO

The Company’s invested assets at December 31, 2018 were $72.28 billion, of which 93% was invested in fixed maturity and short-term investments, 1% in equity securities, 1% in real estate investments and 5% in other investments. Because the primary purpose of the investment portfolio is to fund future claims payments, the Company employs a conservative investment philosophy. A significant majority of funds available for investment are deployed in a widely diversified portfolio of high quality, liquid, taxable U.S. government, tax-exempt U.S. municipal and taxable corporate and U.S. agency mortgage-backed bonds.

The carrying value of the Company’s fixed maturity portfolio at December 31, 2018 was $63.46 billion. The Company closely monitors the duration of its fixed maturity investments, and investment purchases and sales are executed with the objective of having adequate funds available to satisfy the Company’s insurance and debt obligations. The weighted average credit quality of the Company’s fixed maturity portfolio, both including and excluding U.S. Treasury securities, was “Aa2” at both December 31, 2018 and 2017. Below investment grade securities represented 2.3% and 2.7% of the total fixed maturity investment portfolio at December 31, 2018 and 2017, respectively. The weighted average effective duration of fixed maturities and short-term securities was 4.5 (4.7 excluding short-term securities) at December 31, 2018 and 4.0 (4.3 excluding short-term securities) at December 31, 2017. The increase in duration compared with December 31, 2017 primarily reflected the increase in market interest rates as well as changes in the Company's investment portfolio following the enactment of the Tax Cuts and Jobs Act of 2017.

The carrying values of investments in fixed maturities classified as available for sale at December 31, 2018 and 2017 were as follows:

	2018		2017	
(at December 31, in millions)	Carrying Value	Weighted Average Credit Quality (1)	Carrying Value	Weighted Average Credit Quality (1)
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$2,064	Aaa/Aa1	$2,076	Aaa/Aa1
Obligations of states, municipalities and political subdivisions:	0			
Local general obligation	14,572	Aaa/Aa1	13,906	Aaa/Aa1
Revenue	9,853	Aaa/Aa1	11,626	Aaa/Aa1
State general obligation	1,334	Aaa/Aa1	1,484	Aaa/Aa1
Pre-refunded	2,852	Aaa/Aa1	3,899	Aaa/Aa1
Total obligations of states, municipalities and political subdivisions	28,611		30,915	
Debt securities issued by foreign governments	1,257	Aaa/Aa1	1,509	Aaa/Aa1
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,573	Aaa/Aa1	2,410	Aa1
All other corporate bonds and redeemable preferred stock:				
Financial:				
Bank	3,641	A1	3,132	A2
Insurance	1,006	A1	752	A1
Finance/leasing	39	Ba2	25	B1
Brokerage and asset management	80	A1	60	A2
Total financial	4,766		3,969	
Industrial	16,957	A3	15,136	A3
Public utility	3,222	A2	2,610	A2
Canadian municipal securities	1,165	Aa2	1,207	Aa2
Sovereign corporate securities (2)	629	Aaa	605	Aaa
Commercial mortgage-backed securities and project loans (3)	1,217	Aaa	1,168	Aaa
Asset-backed and other	1,003	Aa1	1,089	Aa2
Total all other corporate bonds and redeemable preferred stock	28,959		25,784	
Total fixed maturities	$63,464	Aa2	$62,694	Aa2

(1) Rated using external rating agencies or by the Company when a public rating does not exist.

(2) Sovereign corporate securities include corporate securities that are backed by a government and include sovereign banks and securities issued under the Federal Ship Financing Programs.

(3) Included in commercial mortgage-backed securities and project loans at December 31, 2018 and 2017 were $456 million and $471 million of securities guaranteed by the U.S. government, respectively, and $2 million and $4 million of securities guaranteed by government sponsored enterprises, respectively.

The following table sets forth the Company's fixed maturity investment portfolio rated using external ratings agencies or by the Company when a public rating does not exist:

(at December 31, 2018, in millions)	Carrying Value	Percent of Total Carrying Value
Quality Rating:		
Aaa	$26,089	41.1 %
Aa	16,027	25.3
A	10,539	16.6
Baa	9,334	14.7
Total investment grade	61,989	97.7
Below investment grade	1,475	2.3
Total fixed maturities	$63,464	100.0 %

Obligations of States, Municipalities and Political Subdivisions

The Company's fixed maturity investment portfolio at December 31, 2018 and 2017 included $28.61 billion and $30.92 billion, respectively, of securities which are obligations of states, municipalities and political subdivisions (collectively referred to as the municipal bond portfolio). The municipal bond portfolio is diversified across the United States, the District of Columbia and Puerto Rico and includes general obligation and revenue bonds issued by states, cities, counties, school districts and similar issuers. Included in the municipal bond portfolio at December 31, 2018 and 2017 were $2.85 billion and $3.90 billion, respectively, of pre-refunded bonds, which are bonds for which states or municipalities have established irrevocable trusts, almost exclusively comprised of U.S. Treasury securities and obligations of U.S. government and government agencies and authorities. These trusts were created to fund the payment of principal and interest due under the bonds. The irrevocable trusts are verified as to their sufficiency by an independent verification agent of the underwriter, issuer or trustee. All of the Company's holdings of securities issued by Puerto Rico and related entities have been pre-refunded and therefore are defeased by U.S. Treasury securities.

The following table shows the geographic distribution of the $25.76 billion of municipal bonds at December 31, 2018 that were not pre-refunded.

(at December 31, 2018, in millions)	State General Obligation	Local General Obligation	Revenue	Total Carrying Value	Weighted Average Credit Quality(1)
State:					
Texas	$ 48	$ 2,561	$ 982	$ 3,591	Aaa
Washington	106	1,270	487	1,863	Aa1
Virginia	40	761	845	1,646	Aaa/Aa1
Minnesota	100	1,050	239	1,389	Aaa/Aa1
North Carolina	88	756	442	1,286	Aaa/Aa1
California	—	839	403	1,242	Aaa/Aa1
Massachusetts	—	88	990	1,078	Aaa/Aa1
Colorado	—	637	273	910	Aa1
Maryland	32	635	167	834	Aaa/Aa1
Georgia	147	518	160	825	Aaa/Aa1
Wisconsin	151	366	168	685	Aa1
Tennessee	63	533	80	676	Aa1
South Carolina	50	500	106	656	Aa1
Oregon	154	326	170	650	Aa1
All others (2)	355	3,732	4,341	8,428	Aaa/Aa1
Total	$ 1,334	$ 14,572	$ 9,853	$ 25,759	Aaa/Aa1

(1) Rated using external rating agencies or by the Company when a public rating does not exist. Ratings shown are the higher of the rating of the underlying issuer or the insurer in the case of securities enhanced by third-party insurance for the payment of principal and interest in the event of issuer default.

(2) No other single state accounted for 2.5% or more of the total non-pre-refunded municipal bonds.

The following table displays the funding sources for the $9.85 billion of municipal bonds identified as revenue bonds in the foregoing table at December 31, 2018.

(at December 31, 2018, in millions)	Carrying Value	Weighted Average Credit Quality(1)
Source:		
Water and sewer	$ 3,903	Aaa/Aa1
Higher education	2,414	Aaa/Aa1
Power utilities	803	Aa1
Transportation	744	Aa1
Special tax	544	Aa1
Health care	80	Aa2
Housing	41	Aaa/Aa1
Industrial	21	A2
Lease	13	Aa1
Property tax	12	Aa2
Other revenue sources	1,278	Aaa/Aa1
Total	$ 9,853	Aaa/Aa1

(1) Rated using external rating agencies or by the Company when a public rating does not exist. Ratings shown are the higher of the rating of the underlying issuer or the insurer in the case of securities enhanced by third-party insurance for the payment of principal and interest in the event of issuer default.

The Company bases its investment decision on the underlying credit characteristics of the municipal security. The weighted average credit rating of the municipal bond portfolio was “Aaa/Aa1” at December 31, 2018.

Debt Securities Issued by Foreign Governments

The following table shows the geographic distribution of the Company’s long-term fixed maturity investments in debt securities issued by foreign governments at December 31, 2018.

(at December 31, 2018, in millions)	Carrying Value	Weighted Average Credit Quality (1)
Foreign Government:		
Canada	$ 849	Aaa
United Kingdom	369	Aa2
All Others (2)	39	Baa1
Total	$ 1,257	Aaa/Aa1

(1) Rated using external rating agencies or by the Company when a public rating does not exist.

(2) No other country accounted for 2.5% or more of total debt securities issued by foreign governments.

The following table shows the Company’s Eurozone exposure at December 31, 2018 to all debt securities issued by foreign governments, financial companies, sovereign corporations (including sovereign banks) whose securities are backed by the respective country’s government and all other corporate securities (comprised of industrial corporations and utility companies) which could be affected if economic conditions deteriorated due to a prolonged recession.

	Debt Securities Issued by Foreign Governments		Corporate Securities					
			Financial		Sovereign Corporates		All Other	
(at December 31, 2018, in millions)	Carrying Value	Weighted Average Credit Quality (1)	Carrying Value	Weighted Average Credit Quality (1)	Carrying Value	Weighted Average Credit Quality (1)	Carrying Value	Weighted Average Credit Quality (1)
Eurozone Periphery								
Spain	$ —	—	$79	A2	$ —	—	$21	Baa2
Ireland	—	—	—	—	—	—	138	Baa2
Greece	—	—	—	—	—	—	—	—
Italy	—	—	—	—	—	—	—	—
Portugal	—	—	—	—	—	—	—	—
Subtotal	—		79		—		159	
Eurozone Non-Periphery								
Germany	—	—	13	Baa2	309	Aaa/Aa1	487	A3
France	—	—	4	A1	—	—	536	A2
Netherlands	—	—	155	A1	78	Aaa	465	A1
Austria	—	—	—	—	—	—	—	—
Finland	1	Aa1	—	—	—	—	—	—
Belgium	—	—	—	—	—	—	112	Baa1
Luxembourg	—	—	—	—	—	—	80	Aa3
Subtotal	1		172		387		1,680	
Total	$ 1		$251		$ 387		$1,839	

(1) Rated using external rating agencies or by the Company when a public rating does not exist. The table includes $323 million of short-term securities which have high ratings issued by external rating agencies for short-term issuances. For purposes of this table, the short-term securities, which are rated “A-1+” and/or “P-1,” are included as “Aaa” rated securities.

In addition to fixed maturities noted in the foregoing table, the Company has exposure totaling $141 million to private equity limited partnerships and real estate partnerships (both of which are included in other investments in the Company’s consolidated balance sheet) whose primary investing focus is across Europe. The Company has unfunded commitments totaling $131 million to these partnerships. The Company has no non-redeemable preferred stock issued by companies in the Eurozone.

Mortgage-Backed Securities, Collateralized Mortgage Obligations and Pass-Through Securities

The Company’s fixed maturity investment portfolio at December 31, 2018 and 2017 included $2.57 billion and $2.41 billion, respectively, of residential mortgage-backed securities, including pass-through-securities and collateralized mortgage obligations (CMOs), all of which are subject to prepayment risk (either shortening or lengthening of duration). While prepayment risk for securities and its effect on income cannot be fully controlled, particularly when interest rates move dramatically, the Company’s investment strategy generally favors securities that reduce this risk within expected interest rate ranges. The Company makes investments in residential CMOs that are either guaranteed by GNMA, FNMA or FHLMC, or if not guaranteed, are senior or super-senior positions within their respective securitizations. Both guaranteed and non-guaranteed residential CMOs allocate the distribution of payments from the underlying mortgages among different classes of bondholders. In addition, non-guaranteed residential CMOs provide structures that allocate the impact of credit losses to different classes of bondholders. Senior and super-senior CMOs are protected, to varying degrees, from credit losses as those losses are initially allocated to subordinated bondholders. The Company’s investment strategy is to purchase CMO tranches that are expected to offer the most favorable return given the Company’s assessment of associated risks. The Company does not purchase residual interests in CMOs. For more information regarding the Company’s investments in residential mortgage-backed

securities, see note 3 of notes to the consolidated financial statements.

Commercial Mortgage-Backed Securities and Project Loans

At December 31, 2018 and 2017, the Company held commercial mortgage-backed securities (including FHA project loans) of $1.22 billion and $1.17 billion, respectively. The Company does not believe this portfolio exposes it to a material adverse impact

on its results of operations, financial position or liquidity, due to the portfolio's relatively small size and the underlying credit strength of these securities. For more information regarding the Company's investments in commercial mortgage-backed securities, see note 3 of notes to the consolidated financial statements.

Equity Securities, Real Estate and Short-Term Investments

See note 1 of notes to the consolidated financial statements for further information about these invested asset classes.

Other Investments

The Company also invests in private equity limited partnerships, hedge funds and real estate partnerships. Also included in other investments are non-public common and preferred equities and derivatives. These asset classes have historically provided a higher return than fixed maturities but are subject to more volatility. At December 31, 2018 and 2017, the carrying value of the Company's other investments was $3.56 billion and $3.53 billion, respectively. The Company has unfunded commitments to private equity limited partnerships and real estate partnerships in which it invests. These commitments totaled $1.60 billion and $1.56 billion at December 31, 2018 and 2017, respectively. It is the opinion of the Company's management that the Company has adequate liquidity to meet these commitments.

Securities Lending

The Company has, from time to time, engaged in securities lending activities from which it generates net investment income by lending certain of its investments to other institutions for short periods of time. At December 31, 2018 and 2017, the Company had $367 million and $304 million of securities on loan, respectively, as part of a tri-party lending agreement. The average monthly balance of securities on loan during 2018 and 2017 was $319 million and $318 million, respectively. Borrowers of these securities provide collateral equal to at least 102% of the market value of the loaned securities plus accrued interest. The Company has not incurred any investment losses in its securities lending program for the years ended December 31, 2018, 2017 and 2016.

Lloyd's Trust Deposits

The Company meets its capital requirements to support its underwriting at Lloyd's using a combination of trust deposits and uncollateralized letters of credit. Securities with a fair value of approximately $115 million and $37 million held by a wholly-owned subsidiary at December 31, 2018 and 2017, respectively, and $33 million held by TRV at both December 31, 2018 and 2017 were pledged into Lloyd's trust accounts to provide a portion of the Lloyd's capital requirements. For more information regarding the Company's utilization of uncollateralized letters of credit, see "Liquidity and Capital Resources" herein.

Net Unrealized Investment Gains (Losses)

The net unrealized investment gains (losses) that were included in shareholders' equity were as follows:

(at December 31, in millions)	2018	2017	2016
Fixed maturities	$(137)	$1,378	$865
Equity securities	—	13	228
Other investments	—	23	19
Unrealized investment gains (losses) before tax	(137)	1,414	1,112
Tax expense (benefit)	(24)	460	382
Net unrealized investment gains (losses) included in accumulated other comprehensive income at year end	(113)	954	730
Tax effect of TCJA	—	158	—
Net unrealized investment gains (losses) included in shareholders' equity at end of year	$(113)	$1,112	$730

Net unrealized investment losses included in shareholders' equity at December 31, 2018 compared with net unrealized gains at December 31, 2017 reflected the impact of an increase in market interest rates in 2018. Equity securities, which include public common and non-redeemable preferred stocks, are reported at fair value with changes in fair value recognized in net income. Prior to January 1, 2018, equity securities were classified as available for sale and changes in their fair value were charged or credited directly to other comprehensive income.

At December 31, 2018, the amount of gross unrealized losses for all fixed maturity investments reported at fair value for which fair value was less than 80% of amortized cost for fixed maturity investments was not significant.
For fixed maturity investments where fair value is less than the carrying value and the Company did not reach a decision to impair, the Company continues to have the intent and ability to hold such investments to a projected recovery in value, which may not be until maturity.
At December 31, 2018 and 2017, below investment grade securities comprised 2.3% and 2.7%, respectively, of the fair value of the Company's fixed maturity investment portfolio. Included in below investment grade securities at December 31, 2018 were securities in an unrealized loss position that, in the aggregate, had an amortized cost of $1.37 billion and a fair value of $1.29 billion, resulting in a net pre-tax unrealized investment loss of $81 million. These securities in an unrealized loss position represented approximately 2.2% of the total amortized cost and 2.0% of the fair value of the fixed maturity portfolio at December 31, 2018 and accounted for 9.5% of the total gross pre-tax unrealized investment loss in the fixed maturity portfolio at December 31, 2018.

Impairment Charges

Impairment charges included in net realized investment gains in the consolidated statement of income were $1 million, $14 million and $29 million for the years ended December 31, 2018, 2017 and 2016, respectively. See note 3 of notes to the consolidated financial statements for further information.

Purchases and Sales of Investment Securities

Purchases and sales of investments are based on cash requirements, the characteristics of the insurance liabilities and current market conditions. The Company identifies investments to be sold to achieve its primary investment goals of assuring the Company's ability to meet policyholder obligations as well as to optimize investment returns, given these obligations.
During the year ended December 31, 2018, the Company incurred pre-tax realized losses of $18 million on the sale of fixed maturity investments having a fair value of $786 million.

CATASTROPHE MODELING

The Company uses various analyses and methods, including proprietary and third-party computer modeling processes, to make underwriting and reinsurance decisions designed to manage its exposure to catastrophic events. There are no industry-standard methodologies or assumptions for projecting catastrophe exposure. Accordingly, catastrophe estimates provided by different insurers may not be comparable.

The Company actively monitors and evaluates changes in third-party models and, when necessary, calibrates the catastrophe risk model estimates delivered via its own proprietary modeling processes. The Company considers historical loss experience, recent events, underwriting practices, market share analyses, external scientific analysis and various other factors including non-modeled losses, to refine its proprietary view of catastrophe risk. These proprietary models are continually updated as new information and techniques emerge.

The tables below set forth the probabilities that estimated losses, comprising claims and allocated claim adjustment expenses (but excluding unallocated claim adjustment expenses), from a single event occurring in a one-year timeframe will equal or exceed the indicated loss amounts (expressed in dollars, net of tax, and as a percentage of the Company's common equity), based on the proprietary and third-party computer models utilized by the Company at December 31, 2018. For example, on the basis described below the tables, the Company estimates that there is a one percent chance that the Company's loss from a single U.S. and Canadian hurricane in a one-year timeframe would equal or exceed $1.6 billion, or 7% of the Company's common equity at December 31, 2018.

	Dollars (in billions)	
Likelihood of Exceedance (1)	Single U.S. and Canadian Hurricane	Single U.S. and Canadian Earthquake
2.0% (1-in-50)	$ 1.2	$ 0.5
1.0% (1-in-100)	$ 1.6	$ 0.7
0.4% (1-in-250)	$ 2.2	$ 1.2
0.1% (1-in-1,000)	$ 4.6	$ 1.8

	Percentage of Common Equity (2)	
Likelihood of Exceedance	Single U.S. and Canadian Hurricane	Single U.S. and Canadian Earthquake
2.0% (1-in-50)	5 %	2 %
1.0% (1-in-100)	7 %	3 %
0.4% (1-in-250)	9 %	5 %
0.1% (1-in-1,000)	20 %	8 %

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(1) An event that has, for example, a 2% likelihood of exceedance is sometimes described as a "1-in-50 year event." As noted above, however, the probabilities in the table represent the likelihood of losses from a single event equaling or exceeding the indicated threshold loss amount in a one-year timeframe, not over a multi-year timeframe. Also, because the probabilities relate to a single event, the probabilities do not address the likelihood of more than one event occurring in a particular period, and, therefore, the amounts do not address potential aggregate catastrophe losses occurring in a one-year timeframe.

(2) The percentage of common equity is calculated by dividing (a) indicated loss amounts in dollars by (b) total common equity excluding net unrealized investment gains and losses, net of taxes, included in shareholders' equity. Net unrealized investment gains and losses can be significantly impacted by both discretionary and other economic factors and are not necessarily indicative of operating trends. Accordingly, the Company's management uses the percentage of common equity calculated on this basis as a metric to evaluate the potential impact of a single hurricane or single earthquake on the Company's financial position for purposes of making underwriting and reinsurance decisions.

The threshold loss amounts in the tables above, which are based on the Company's in-force portfolio at December 31, 2018 and catastrophe reinsurance program at January 1, 2019, are net of reinsurance, after-tax and exclude unallocated claim adjustment expenses, which historically have been less than 10% of loss estimates. For further information regarding the Company's reinsurance, see "Item 1 - Reinsurance." The amounts for hurricanes reflect U.S. and Canadian exposures and include property exposures, property residual market exposures and an adjustment for certain non-property exposures. The hurricane loss amounts are based on the Company's catastrophe risk model estimates and include losses from the hurricane hazards of wind and storm surge. The amounts for earthquakes reflect U.S. and Canadian property and workers' compensation exposures. The Company does not believe that the inclusion of hurricane or earthquake losses arising from other geographical areas or other exposures would materially change the estimated threshold loss amounts.

Catastrophe modeling relies upon inputs based on experience, science, engineering and history. These inputs reflect a significant amount of judgment and are subject to changes which may result in volatility in the modeled output. Catastrophe modeling output may also fail to account for risks that are outside the range of normal probability or are otherwise unforeseeable. Catastrophe modeling assumptions include, among others, the portion of purchased reinsurance that is collectible after a catastrophic event, which may prove to be materially incorrect. Consequently, catastrophe modeling estimates are subject to significant uncertainty. In the tables above, the uncertainty associated with the estimated threshold loss amounts increases significantly as the likelihood of exceedance decreases. In other words, in the case of a relatively more remote event (e.g., 1-in-1,000), the estimated threshold loss amount is relatively less reliable. Actual losses from an event could materially exceed the indicated threshold loss amount. In

addition, more than one such event could occur in any period.

Moreover, the Company is exposed to the risk of material losses from other than property and workers' compensation coverages arising out of hurricanes and earthquakes, and it is exposed to catastrophe losses from perils other than hurricanes and earthquakes, such as tornadoes and other windstorms, hail, wildfires, severe winter weather, floods, tsunamis, volcanic eruptions and other naturally-occurring events, such as solar flares, as well as acts of terrorism and cyber events.

For more information about the Company's exposure to catastrophe losses, see "Item 1A-Risk Factors-Catastrophe losses could materially and adversely affect our results of operations, our financial position and/or liquidity, and could adversely impact our ratings, our ability to raise capital and the availability and cost of reinsurance" and "Item 1A-Risk Factors- We may be adversely affected if our pricing and capital models provide materially different indications than actual results."

CHANGING CLIMATE CONDITIONS

Severe weather events over the last two decades have underscored the unpredictability of future climate trends and created uncertainty regarding insurers' exposures to financial loss as a result of catastrophes and other weather-related events. During that time period, the insurance industry experienced increased catastrophe losses due to a number of potential causal factors, including, in addition to weather/climate variability, more people living in high-risk areas, population growth in areas with weaker enforcement of building codes, urban expansion and an increase in the average size of a house. For example, hurricane and storm surge activity have impacted areas further inland than previously experienced, and demographic changes have resulted in larger populations in coastal areas which historically have been subject to severe storms, thus expanding the Company's potential for losses from hurricanes. Additionally, both the frequency and severity of tornado and hail storms in the United States have been more volatile during the last decade. The frequency and severity of wildfire losses have been elevated in more recent years. Demographic changes in areas prone to wildfires have expanded the Company's potential for losses from wildfires. Moreover, the Company's catastrophe models may be less reliable due to the increased unpredictability in frequency and severity of severe weather events, emerging trends in climate conditions, inadequate reflection of regulatory changes and the other factors mentioned above. Accordingly, the Company may be subject to increased losses from catastrophes and other weather-related events.

The Company discusses how potentially changing climate conditions may present other issues for its business under "Item 1A - Risk Factors" and "Outlook." For example, among other things:

- Increasingly unpredictable and severe weather conditions could result in increased frequency and severity of claims under policies issued by the Company. See "Risk Factors-Catastrophe losses could materially and adversely affect our results of operations, our financial position and/or liquidity, and could adversely impact our ratings, our ability to raise capital and the availability and cost of reinsurance" and "-Outlook-Underwriting Gain/Loss."

- Changing climate conditions could also impact the creditworthiness of issuers of securities in which the Company invests. For example, water supply adequacy could impact the creditworthiness of bond issuers in the Southwestern United States, and more frequent and/or severe hurricanes could impact the creditworthiness of issuers in the Southeastern United States, among other areas. See "Risk Factors-Our investment portfolio is subject to credit and interest rate risk, and may suffer reduced returns or material realized or unrealized losses."

- Increased regulation adopted in response to potential changes in climate conditions may impact the Company and its customers. For example, state insurance regulation could impact the Company's ability to manage property exposures in areas vulnerable to significant climate driven losses. If the Company is unable to implement risk-based pricing, modify policy terms or reduce exposures to the extent necessary to address rising losses related to catastrophes and smaller scale weather events (should those increased losses occur), its business may be adversely affected. See "Risk Factors-Catastrophe losses could materially and adversely affect our results of operations, our financial position and/or liquidity, and could adversely impact our ratings, our ability to raise capital and the availability and cost of reinsurance." In addition, climate change regulation could increase the Company's customers' costs of doing business. For example, insureds faced with carbon management regulatory requirements may have less available capital for investment in loss prevention and safety features which may, over time, increase loss exposures. Increased regulation may also result in reduced economic activity, which would decrease the amount of insurable assets and businesses.

- The full range of potential liability exposures related to changing climate conditions continues to evolve. Through the Company's Emerging Issues Committee and its Committee on Climate, Energy and the Environment, the Company works with its business units and corporate groups, as appropriate, to identify and try to assess climate change-related liability issues, which are continually evolving and often hard to fully evaluate. The Company regularly reviews emerging issues, including changing climate conditions, to consider potential changes to its modeling and the use of such modeling, as well as to help determine the need for new underwriting strategies, coverage modifications or new products. See "Risk Factors-The effects of emerging claim and coverage issues on our business are uncertain."

REINSURANCE RECOVERABLES

The Company reinsures a portion of the risks it underwrites in order to control its exposure to losses. For additional discussion regarding the Company's reinsurance coverage, see "Part I—Item 1—Reinsurance."

The following table summarizes the composition of the Company's reinsurance recoverables:

(at December 31, in millions)	2018	2017
Gross reinsurance recoverables on paid and unpaid claims and claim adjustment expenses	$3,485	$3,303
Allowance for uncollectible reinsurance	(110)	(111)
Net reinsurance recoverables	3,375	3,192
Mandatory pools and associations	2,005	2,011
Structured settlements	2,990	3,106
Total reinsurance recoverables	$8,370	$8,309

Net reinsurance recoverables at December 31, 2018 increased by $183 million over December 31, 2017, primarily reflecting the 2018 impacts of catastrophe losses and the asbestos reserve increase, partially offset by cash collections.

The following table presents the Company's top five reinsurer groups by reinsurance recoverable at December 31, 2018 (in millions). Also included is the A.M. Best rating of the Company's predominant reinsurer from each such reinsurer group at February 14, 2019:

Reinsurer Group	Reinsurance Recoverable	A.M. Best Rating of Group's Predominant Reinsurer	
Swiss Re Group	$ 473	A+	second highest of 16 ratings
Munich Re Group	305	A+	second highest of 16 ratings
Berkshire Hathaway	278	A++	highest of 16 ratings
Axa Group [1]	188	A+	second highest of 16 ratings
Sompo Japan Nipponkoa Group	129	A+	second highest of 16 ratings

(1) On September 12, 2018, Axa SA completed its acquisition of XL Group Ltd.

At December 31, 2018, the Company held $857 million of collateral in the form of letters of credit, funds and trust agreements held to fully or partially collateralize certain reinsurance recoverables.

Included in reinsurance recoverables are amounts related to structured settlements, which are annuities purchased from various life insurance companies to settle certain personal physical injury claims, of which workers' compensation claims comprise a significant portion. In cases where the Company did not receive a release from the claimant, the amount due from the life insurance company related to the structured settlement is included in the Company's consolidated balance sheet as a reinsurance recoverable and the related claim cost is included in the liability for claims and claim adjustment expense reserves, as the Company retains the contingent liability to the claimant. If it is expected that the life insurance company is not able to pay, the Company would recognize an impairment of the related reinsurance recoverable if, and to the extent, the purchased annuities are not covered by state guaranty associations. In the event that the life insurance company fails to make the required annuity payments, the Company would be required to make such payments. The following table presents the Company's top five groups by structured settlements at December 31, 2018 (in millions). Also included is the A.M. Best rating of the Company's predominant insurer from each such insurer group at February 14, 2019:

Group	Structured Settlements	A.M. Best Rating of Group's Predominant Insurer	
Fidelity & Guaranty Life Group	$ 809	A-	fourth highest of 16 ratings
Genworth Financial Group [1]	356	B+	sixth highest of 16 ratings
John Hancock Group	273	A+	second highest of 16 ratings
Brighthouse Financial, Inc.	266	A	third highest of 16 ratings
Symetra Financial Corporation	251	A	third highest of 16 ratings

(1) On October 23, 2016, Genworth Financial (Genworth) announced that they have entered into a definitive agreement under which China Oceanwide Holdings Group Co., Ltd. (China Oceanwide) agreed to acquire all of the outstanding shares of Genworth. China Oceanwide is a privately held, family-owned international financial holding group headquartered in Beijing, China. On March 7, 2017, Genworth stockholders adopted the merger agreement, and the acquisition is pending the receipt of required regulatory approvals. On January 30, 2019, the parties agreed to extend the closing deadline for the transaction to March 15, 2019.

The Company considers the ratings and related outlook assigned to reinsurance companies and life insurance companies by various independent ratings agencies in assessing the adequacy of its allowance for uncollectible amounts.

OUTLOOK

The following discussion provides outlook information for certain key drivers of the Company's results of operations and capital position.

Premiums. The Company's earned premiums are a function of net written premium volume. Net written premiums comprise both renewal business and new business and are recognized as earned premium over the life of the underlying policies. When business renews, the amount of net written premiums associated with that business may increase or decrease (renewal premium change) as a result of increases or decreases in rate and/or insured exposures, which the Company considers as a measure of units of exposure (such as the number and value of vehicles or properties insured). Net written premiums from both renewal and new business, and therefore earned premiums, are impacted by competitive market conditions as well as general economic conditions, which, particularly in the case of Business Insurance, affect audit premium adjustments, policy endorsements and mid-term cancellations. Property and casualty insurance market conditions are expected to remain competitive. Net written premiums may also be impacted by the structure of reinsurance programs and related costs, as well as changes in foreign currency exchange rates.

Overall, the Company expects retention levels (the amount of expiring premium that renews, before the impact of renewal premium changes) will remain strong by historical standards during 2019. In Business Insurance, the Company expects that domestic renewal premium changes in 2019 will remain positive and will be broadly consistent with the levels attained in 2018. In Bond & Specialty Insurance, the Company expects that renewal premium changes with respect to domestic management liability business during 2019 will remain positive and will be broadly consistent with the levels attained in 2018. With respect to domestic surety business within Bond & Specialty Insurance, the Company expects that net written premium volume during 2019 will be slightly higher than the levels attained in 2018. In Personal Insurance, the Company expects that domestic Agency Automobile renewal premium changes during 2019 will remain positive but will be lower than the levels attained in 2018. The Company expects that domestic Agency Homeowners and Other renewal premium changes during 2019 will remain positive and will be higher than the levels attained in 2018. The need for state regulatory approval for changes to personal and many commercial property and casualty insurance prices, as well as competitive market conditions, may impact the timing and extent of renewal premium changes. Given the relatively smaller amount of premium that the Company generates from outside the United States and the transactional nature of some of those markets, particularly Lloyd's, international renewal premium changes in each segment during 2019 could be somewhat higher, broadly consistent with or somewhat lower than the levels attained in 2018.

Property and casualty insurance market conditions are expected to remain competitive during the next twelve months for new business. In each of the Company's business segments, new business generally has less of an impact on underwriting profitability than renewal business, given the volume of new business relative to renewal business. However, in periods of meaningful increases in new business, despite its positive impact on underwriting gains over time, the impact of higher new business levels may negatively impact the combined ratio for a period of time.

Economic conditions in the United States and elsewhere could change, due to a variety of factors, including the political and regulatory environment, changes to fiscal stimulus programs, inflation or deflation (including the impact of rapid changes in wages and/or commodity prices), the imposition of tariffs or other barriers to international trade, fluctuations in interest rates and foreign currency exchange rates, high levels of global debt after an extended period of low interest rates, the United Kingdom's withdrawal

from the European Union, a shutdown of the U.S. government, the failure by the U.S. government to raise the debt ceiling, changes to the U.S. Federal budget and further potential changes in tax laws in the United States or modification of the Affordable Care Act. The resulting changes in levels of economic activity could positively or negatively impact exposure changes at renewal and the Company's ability to write business at acceptable rates. Additionally, changes in levels of economic activity could positively or negatively impact audit premium adjustments, policy endorsements and mid-term cancellations after policies are written. All of the foregoing, in turn, could positively or negatively impact net written premiums during the next twelve months, and because earned premiums are a function of net written premiums, earned premiums could be impacted on a lagging basis.

Underwriting Gain/Loss. The Company's underwriting gain/loss can be significantly impacted by catastrophe losses and net favorable or unfavorable prior year reserve development, as well as underlying underwriting margins. Underlying underwriting margins can be impacted by a number of factors, including variability in non-catastrophe weather, large loss and other loss activity; changes in current period loss estimates resulting from prior period loss development; changes in business mix; changes in reinsurance coverages and/or costs; premium adjustments; and variability in expenses and assessments.

Catastrophe losses and non-catastrophe weather-related losses are inherently unpredictable from period to period. The Company's results of operations could be adversely impacted if significant catastrophe and non-catastrophe weather-related losses were to occur.

For a number of years, the Company's results have included significant amounts of net favorable prior year reserve development driven by better than expected loss experience. However, given the inherent uncertainty in estimating claims and claim adjustment expense reserves, loss experience could develop such that the Company recognizes higher or lower levels of favorable prior year reserve development, no favorable prior year reserve development or unfavorable prior year reserve development in future periods. In addition, the ongoing review of prior year claims and claim adjustment expense reserves, or other changes in current period circumstances, may result in the Company revising current year loss estimates upward or downward in future periods of the current year.

It is possible that changes in economic conditions could lead to higher or lower inflation than the Company had anticipated, which could in turn lead to an increase or decrease in the Company's loss costs and the need to strengthen or reduce claims and claim adjustment expense reserves. These impacts of inflation on loss costs and claims and claim adjustment expense reserves could be more pronounced for those lines of business that require a relatively longer period of time to finalize and settle claims for a given accident year and, accordingly, are relatively more inflation sensitive. For a further discussion, see "Part I-Item 1A-Risk Factors-If actual claims exceed our claims and claim adjustment expense reserves, or if changes in the estimated level of claims and claim adjustment expense reserves are necessary, including as a result of, among other things, changes in the legal, regulatory and economic environments in which the Company operates, our financial results could be materially and adversely affected."

In Business Insurance, the Company expects underlying underwriting margins during 2019 in aggregate will be higher than in 2018, and the underlying combined ratio during 2019 in aggregate will be lower than in 2018, assuming loss activity, primarily large losses, returns to lower and more normal levels, with the improvements expected to be in the second through fourth quarters of the year.

In Bond & Specialty Insurance, the Company expects underlying underwriting margins and the underlying combined ratio during 2019 in aggregate will be broadly consistent with 2018.

In Personal Insurance, the Company expects underlying underwriting margins during 2019 in aggregate will be slightly higher than in 2018, and the underlying combined ratio during 2019 in aggregate will be broadly consistent with 2018. In Agency Automobile, the Company expects underlying underwriting margins and the underlying

combined ratio during 2019 in aggregate will be broadly consistent with 2018. In the first half of 2019, the Company expects Agency Automobile underlying underwriting margins will be higher and the underlying combined ratio will be lower than in the same period of 2018. In the second half of 2019, the Company expects Agency Automobile underlying underwriting margins will be lower and the underlying combined ratio will be higher than in the same period of 2018. In Agency Homeowners and Other, the Company expects underlying underwriting margins during 2019 in aggregate will be slightly higher than in 2018, and the underlying combined ratio during 2019 in aggregate will be broadly consistent with 2018, assuming non-catastrophe weather-related losses and non-weather related losses return to lower and more normal levels. In the first half of 2019, the Company expects Agency Homeowners and Other underlying underwriting margins will be lower and the underlying combined ratio will be higher than in the same period of 2018. In the second half of 2019, the Company expects Agency Homeowners and Other underlying underwriting margins will be higher and the underlying combined ratio will be lower than in the same period of 2018.

Investment Portfolio. The Company expects to continue to focus its investment strategy on maintaining a high-quality investment portfolio and a relatively short average effective duration. The weighted average effective duration of fixed maturities and short-

term securities was 4.5 (4.7 excluding short-term securities) at December 31, 2018. From time to time, the Company enters into short positions in U.S. Treasury futures contracts to manage the duration of its fixed maturity portfolio. At December 31, 2018, the Company had no open U.S. Treasury futures contracts. The Company continually evaluates its investment alternatives and mix. Currently, the majority of the Company's investments are comprised of a widely diversified portfolio of high-quality, liquid, taxable U.S. government, tax-exempt U.S. municipal and taxable corporate and U.S. agency mortgage-backed bonds.

The Company also invests much smaller amounts in equity securities, real estate, private equity limited partnerships, hedge funds, and real estate partnerships and joint ventures. These investment classes have the potential for higher returns but also the potential for higher degrees of risk, including less stable rates of return and less liquidity.

Net investment income is a material contributor to the Company's results of operations. Based on the impacts of (i) slightly higher levels of fixed income investments (fixed maturity and short-term investments) and (ii) slightly higher yields on fixed income investments, the Company expects after-tax net investment income for the twelve months ending December 31, 2019 from those portfolios will be approximately $80 million to $100 million higher than the twelve months ended December 31, 2018. The impact of future market conditions on net investment income from the non-fixed maturity investment portfolio during the next twelve months is hard to predict. If general economic conditions and/or investment market conditions change during the next twelve months, the Company could experience an increase or decrease in net investment income and/or significant realized investment gains or losses (including impairments).

The Company had a net pre-tax unrealized investment loss of $137 million ($113 million after-tax) in its fixed maturity investment portfolio at December 31, 2018. While the Company does not attempt to predict future interest rate movements, a rising interest rate environment would reduce the market value of fixed maturity investments and, therefore, reduce shareholders' equity, and a declining interest rate environment would have the opposite effects. The Company's investment portfolio has benefited from certain tax exemptions (primarily those related to interest from municipal bonds) and certain other tax laws, including, but not limited to, those governing dividends-received deductions and tax credits (such as foreign tax credits). Changes in these laws could adversely impact the value of the Company's investment portfolio. See "Changes in U.S. tax laws or in the tax laws of other jurisdictions in which we operate could adversely impact us" included in "Part I—Item 1A—Risk Factors."

For further discussion of the Company's investment portfolio, see "Investment Portfolio." For a discussion of the risks to the Company's business during or following a financial market disruption and risks to the Company's investment portfolio, see the risk factors entitled "During or following a period of financial market disruption or an economic downturn, our business could be materially and adversely affected" and "Our investment portfolio is subject to credit and interest rate risk, and may suffer reduced returns or material realized or unrealized losses" included in "Part I-Item 1A-Risk Factors." For a discussion of the risks to the Company's investments from foreign currency exchange rate fluctuations, see the risk factor entitled "We are also subject to a number of additional risks associated with our business outside the United States" included in "Part I—Item 1A—Risk Factors" and see "Part II—Item 7A—Quantitative and Qualitative Disclosures About Market Risk—Foreign Currency Exchange Rate Risk."

Capital Position. The Company believes it has a strong capital position and, as part of its ongoing efforts to create shareholder value, expects to continue to return capital not needed to support its business operations to its shareholders. The Company expects that, generally over time, the combination of dividends to common shareholders and common share repurchases will likely not exceed net income. In addition, the timing and actual number of shares to be repurchased in the future will depend on a variety of additional factors, including the Company's financial position, earnings, share price, catastrophe losses, maintaining capital levels commensurate with the Company's desired ratings from independent rating agencies, funding of the Company's qualified pension plan, capital requirements of the Company's operating subsidiaries, legal requirements, regulatory constraints, other investment

opportunities (including mergers and acquisitions and related financings), market conditions and other factors. For information regarding the Company's common share repurchases in 2018, see "Liquidity and Capital Resources."

As a result of the Company's business outside of the United States, primarily in Canada, the United Kingdom (including Lloyd's), the Republic of Ireland and Brazil, the Company's capital is also subject to the effects of changes in foreign currency exchange rates. For example, strengthening of the U.S. dollar in comparison to other currencies could result in a reduction of shareholders' equity. For additional discussion of the Company's foreign exchange market risk exposure, see "Part II—Item 7A—Quantitative and Qualitative Disclosures About Market Risk."

Many of the statements in this "Outlook" section are forward-looking statements, which are subject to risks and uncertainties that are often difficult to predict and beyond the Company's control. Actual results could differ materially from those expressed or implied by such forward-looking statements. Further, such forward-looking statements speak only as of the date of this report and the Company undertakes no obligation to update them. See "—Forward Looking Statements." For a discussion of potential

risks and uncertainties that could impact the Company's results of operations or financial position, see "Part I—Item 1A—Risk Factors" and "Critical Accounting Estimates."

LIQUIDITY AND CAPITAL RESOURCES

Liquidity is a measure of a company's ability to generate sufficient cash flows to meet the cash requirements of its business operations and to satisfy general corporate purposes when needed.

Operating Company Liquidity. The liquidity requirements of the Company's insurance subsidiaries are met primarily by funds generated from premiums, fees, income received on investments and investment maturities. Cash provided from these sources is used primarily for claims and claim adjustment expense payments and operating expenses. The insurance subsidiaries' liquidity requirements can be impacted by, among other factors, the timing and amount of catastrophe claims, which are inherently unpredictable, as well as the timing and amount of reinsurance recoveries, which may be affected by reinsurer solvency and reinsurance coverage disputes. Additionally, the variability of asbestos-related claim payments, as well as the volatility of potential judgments and settlements arising out of litigation, may also result in increased liquidity requirements. It is the opinion of the Company's management that the insurance subsidiaries' future liquidity needs will be adequately met from all of the sources described above. Subject to restrictions imposed by states in which the Company's insurance subsidiaries are domiciled, the Company's principal insurance subsidiaries pay dividends to their respective parent companies, which, in turn, pay dividends to the corporate holding (parent) company (TRV). For further information regarding restrictions on dividends paid by the Company's insurance subsidiaries, see "Part I—Item 1—Regulation."

Holding Company Liquidity. TRV's liquidity requirements primarily include shareholder dividends, debt servicing, common share repurchases and, from time to time, contributions to its qualified domestic pension plan. At December 31, 2018, TRV held total cash and short-term invested assets in the United States aggregating $1.42 billion and having a weighted average maturity of 52 days. TRV has established a holding company liquidity target equal to its estimated annual pre-tax interest expense and common shareholder dividends (currently approximately $1.17 billion). TRV's holding company liquidity of $1.42 billion at December 31, 2018 exceeded this target and it is the opinion of the Company's management that these assets are sufficient to meet TRV's current liquidity requirements. TRV is not dependent on dividends or other forms of repatriation from its foreign operations to support its liquidity needs. The undistributed earnings of the Company's foreign operations are intended to be permanently reinvested in those operations, and such earnings were not material to the Company's financial position or liquidity at December 31, 2018.

TRV has a shelf registration statement filed with the Securities and Exchange Commission that expires on June 17, 2019 which permits it to issue securities from time to time. TRV also has a $1.0 billion line of credit facility with a syndicate of financial institutions that expires on June 4, 2023. At December 31, 2018, the Company had $100 million of commercial paper outstanding. TRV is not reliant on its commercial paper program to meet its operating cash flow needs.

The Company utilized uncollateralized letters of credit issued by major banks with an aggregate limit of approximately $338 million to provide a portion of the capital needed to support its obligations at Lloyd's at December 31, 2018. If uncollateralized letters of credit are not available at a reasonable price or at all in the future, the Company can collateralize these letters of credit or may have to seek alternative means of supporting its obligations at Lloyd's, which could include utilizing holding company funds on hand.

Operating Activities

Net cash flows provided by operating activities were $4.38 billion, $4.15 billion and $4.47 billion in 2018, 2017 and 2016, respectively. The increase in cash flows in 2018 primarily reflected (i) higher levels of collected premiums, (ii) lower income tax payments and (iii) a lower discretionary contribution to the Company's U.S. qualified non-contributory defined benefit pension plan, partially offset by higher levels of payments for (iv) claims and claim

adjustment expenses and (v) commission expenses. The higher level of payments for claims and claim adjustment expenses in 2018 included the impact of payments related to catastrophe losses incurred in both 2018 and 2017 and increased business volumes. The decrease in cash flows in 2017 reflected (i) higher levels of payments for claims and claim adjustment expenses, (ii) the inclusion in 2016 of proceeds from the settlement of a reinsurance dispute as discussed in more detail in note 16 of notes to the consolidated financial statements, (iii) higher commission expenses and (iv) a higher discretionary contribution to the Company's U.S. qualified non-contributory defined benefit pension plan, partially offset by (v) higher levels of collected premiums and (vi) lower income tax payments. The higher level of payments for claims and claim adjustment expenses in 2017 included the impact of increased business volumes and a higher level of catastrophe losses, partially offset by the inclusion in 2016 of the Company's $524 million payment related to the settlement of the PPG Industries, Inc. litigation as described in more detail in the "Asbestos Claims and Litigation" section. In 2018, 2017

and 2016, the Company voluntarily made contributions totaling $200 million, $300 million and $200 million, respectively, to its qualified domestic pension plan. The qualified domestic pension plan was 109% and 108% funded at December 31, 2018 and 2017, respectively.

Investing Activities

Net cash used in investing activities was $2.33 billion, $2.20 billion and $1.73 billion in 2018, 2017 and 2016, respectively. The Company's consolidated total investments at December 31, 2018 decreased by $224 million, or less than 1% from year-end 2017, as the impacts of (i) net unrealized losses on investments at December 31, 2018 as compared with net unrealized gains on investments at December 31, 2017, as a result of increases in market interest rates during 2018, (ii) common share repurchases and (iii) dividends paid to shareholders were largely offset by (iv) net cash flows provided by operating activities. The Company's consolidated total investments at December 31, 2017 increased by $2.01 billion, or 3% over year-end 2016, primarily reflecting the impacts of (i) net cash flows provided by operating activities and (ii) an increase in the net unrealized appreciation of investments, partially offset by (iii) common share repurchases, (iv) dividends paid to shareholders and (v) the cost of acquiring Simply Business.

The Company's investment portfolio is managed to support its insurance operations; accordingly, the portfolio is positioned to meet obligations to policyholders. As such, the primary goals of the Company's asset-liability management process are to satisfy the insurance liabilities and maintain sufficient liquidity to cover fluctuations in projected liability cash flows. Generally, the expected principal and interest payments produced by the Company's fixed maturity portfolio adequately fund the estimated runoff of the Company's insurance reserves. Although this is not an exact cash flow match in each period, the substantial amount by which the market value of the fixed maturity portfolio exceeds the value of the net insurance liabilities, as well as the positive cash flow from newly sold policies and the large amount of high quality liquid bonds, contributes to the Company's ability to fund claim payments without having to sell illiquid assets or access credit facilities.

Financing Activities

Net cash flows used in financing activities were $2.01 billion, $1.92 billion and $2.81 billion in 2018, 2017 and 2016, respectively. The totals in each year primarily reflected common share repurchases, dividends paid to shareholders and the payment of debt, partially offset by the issuance of debt and proceeds from employee stock option exercises. Common share repurchases in 2018, 2017 and 2016 were $1.32 billion, $1.44 billion and $2.47 billion, respectively.

Debt Transactions.

2018. On March 7, 2018, the Company issued $500 million aggregate principal amount of 4.05% senior notes that will mature on March 7, 2048. The net proceeds of the issuance, after the deduction of the underwriting discount and expenses payable by the Company, totaled approximately $491 million. Interest on the senior notes is payable semi-annually in arrears on March 7 and September 7. Prior to September 7, 2047, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values of the remaining scheduled payments of principal and interest to but excluding September 7, 2047 on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury rate (as defined in the senior notes), plus 15 basis points. On or after September 7, 2047, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

On May 15, 2018, the Company's $500 million, 5.80% senior notes matured and were fully paid.

2017. On May 22, 2017, the Company issued $700 million aggregate principal amount of 4.00% senior notes that will mature on May 30, 2047. The net proceeds of the issuance, after the deduction of the underwriting discount and expenses payable by the Company, totaled approximately $689 million. Interest on the senior notes is payable semi-annually in arrears on May 30 and November 30. Prior to November 30, 2046, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values

of the remaining scheduled payments of principal and interest to November 30, 2046 on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury rate (as defined in the senior notes), plus 15 basis points. On or after November 30, 2046, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

On June 2, 2017, the Company redeemed the remaining $107 million aggregate principal amount of its 6.25% Fixed-to-Floating Rate Junior Subordinated Debentures due 2067 at a price per debenture of 100% of the principal amount thereof, plus accrued and unpaid interest to the redemption date. On December 15, 2017, the Company's $450 million, 5.75% senior notes matured and were fully paid.

2016. On May 11, 2016, the Company issued $500 million aggregate principal amount of 3.75% senior notes that will mature on May 15, 2046. The net proceeds of the issuance, after the deduction of underwriting and other expenses, totaled approximately $491 million. Interest on the senior notes is payable semi-annually in arrears on May 15 and November 15. Prior to November 15, 2045, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values of the remaining scheduled payments of principal and interest on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury Rate (as defined in the senior notes), plus 20 basis points. On or after November 15, 2045, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.
On June 20, 2016, the Company's $400 million, 6.25% senior notes matured and were fully paid.

Dividends. Dividends paid to shareholders were $814 million, $785 million and $757 million in 2018, 2017 and 2016, respectively. The declaration and payment of future dividends to holders of the Company's common stock will be at the discretion of the Company's Board of Directors and will depend upon many factors, including the Company's financial position, earnings, capital requirements of the Company's operating subsidiaries, legal requirements, regulatory constraints and other factors as the Board of Directors deems relevant. Dividends will be paid by the Company only if declared by its Board of Directors out of funds legally available, subject to any other restrictions that may be applicable to the Company. On January 22, 2019, the Company announced that its Board of Directors declared a regular quarterly dividend of $0.77 per share, payable March 29, 2019, to shareholders of record on March 11, 2019.
Share Repurchases. The Company's Board of Directors has approved common share repurchase authorizations under which repurchases may be made from time to time in the open market, pursuant to pre-set trading plans meeting the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, in private transactions or otherwise. The authorizations do not have a stated expiration date. The timing and actual number of shares to be repurchased in the future will depend on a variety of factors, including the Company's financial position, earnings, share price, catastrophe losses, maintaining capital levels commensurate with the Company's desired ratings from independent rating agencies, funding of the Company's qualified pension plan, capital requirements of the Company's operating subsidiaries, legal requirements, regulatory constraints, other investment opportunities (including mergers and acquisitions and related financings), market conditions and other factors. In April 2017, the Board of Directors approved a share repurchase authorization that added an additional $5.0 billion of repurchase capacity. The following table summarizes repurchase activity in 2018 and the remaining repurchase capacity at December 31, 2018.

(in millions, except per share amounts) Quarterly Period Ending	Number of shares repurchased	Cost of shares repurchased	Average price paid per share	Remaining capacity under share repurchase authorization
March 31, 2018	2.5	$ 350	$ 141.84	$ 4,206
June 30, 2018	2.7	350	129.66	3,856
September 30, 2018	3.0	400	130.22	3,456
December 31, 2018	1.4	170	125.09	3,286
Total	9.6	$ 1,270	132.33	3,286

From the inception of the first authorization on May 2, 2006 through December 31, 2018, the Company has repurchased a cumulative total of 497.3 million shares for a total cost of $32.71 billion, or an average of $65.79 per share.

In 2018, 2017 and 2016, the Company acquired 0.4 million, 0.5 million and 0.6 million shares, respectively, of common stock from employees as treasury stock primarily to cover payroll withholding taxes in connection with the vesting of restricted stock unit awards and performance share awards, and shares used by employees to cover the price of certain stock options that were exercised.

Capital Resources

Capital resources reflect the overall financial strength of the Company and its ability to borrow funds at competitive rates and raise new capital to meet its needs. The following table summarizes the components of the Company's capital structure at December 31, 2018 and 2017.

(at December 31, in millions)	2018	2017
Debt:		
Short-term	$600	$600
Long-term	6,004	6,004
Net unamortized fair value adjustments and debt issuance costs	(40)	(33)
Total debt	6,564	6,571
Shareholders' equity:		
Common stock and retained earnings, less treasury stock	24,753	24,074
Accumulated other comprehensive loss	(1,859)	(343)
Total shareholders' equity	22,894	23,731
Total capitalization	$29,458	$30,302

Total capitalization at December 31, 2018 was $29.46 billion, $844 million lower than at December 31, 2017, primarily reflecting the impacts of (i) an increase in accumulated other comprehensive loss of $1.52 billion, primarily due to changes in unrealized appreciation on investments and unrealized foreign currency translation, (ii) common share repurchases totaling $1.27 billion under the Company's share repurchase authorization and (iii) shareholder dividends of $818 million, partially offset by (iv) net income of $2.52 billion and (v) proceeds from the exercise of employee share options of $132 million.

The following table provides a reconciliation of total capitalization to total capitalization excluding net unrealized gains (losses) on investments, net of taxes, included in shareholders' equity:

(at December 31, dollars in millions)	2018	2017
Total capitalization	$29,458	$30,302
Less: net unrealized gains (losses) on investments, net of taxes, included in shareholders' equity	(113)	1,112
Total capitalization excluding net unrealized gains (losses) on investments, net of taxes, included in shareholders' equity	$29,571	$29,190
Debt-to-total capital ratio	22.3 %	21.7 %
Debt-to-total capital ratio excluding net unrealized gains (losses) on investments, net of taxes, included in shareholders' equity	22.2 %	22.5 %

The debt-to-total capital ratio excluding net unrealized gains (losses) on investments, net of taxes, included in shareholders' equity, is calculated by dividing (a) debt by (b) total capitalization excluding net unrealized gains and losses on investments, net of taxes, included in shareholders' equity. Net unrealized gains and losses on investments can be significantly impacted by both interest rate movements and other economic factors. Accordingly, in the opinion of the Company's management, the debt-to-total capital ratio calculated on this basis provides another useful metric for investors to understand the Company's financial leverage position. The Company's ratio of debt-to-total capital excluding after-tax net unrealized investment losses included in shareholders' equity of 22.2% at December 31, 2018 was within the Company's target range of 15% to 25%.

Credit Agreement. The Company is a party to a five-year, $1.0 billion revolving credit agreement with a syndicate of financial institutions that expires on June 4, 2023. Terms of the credit agreement are discussed in more detail in note 8 of notes to the consolidated financial statements.

Shelf Registration. The Company has filed a universal shelf registration statement with the Securities and Exchange Commission that expires on June 17, 2019 for the potential offering and sale of securities. The Company may offer these securities from time to time at prices and on other terms to be determined at the time of offering.

Share Repurchase Authorization. At December 31, 2018, the Company had $3.29 billion of capacity remaining under its share repurchase authorization approved by the Board of Directors.

Contractual Obligations

The following table summarizes, as of December 31, 2018, the Company's future payments under contractual obligations and estimated claims and claim-related payments. The table excludes short-term obligations and includes only liabilities at December 31, 2018 that are expected to be settled in cash.

The table below includes the amount and estimated future timing of claims and claim-related payments. The amounts do not represent the exact liability, but instead represent estimates, generally utilizing actuarial projection techniques, at a given accounting date. These estimates include expectations of what the ultimate settlement and administration of claims will cost based on the Company's assessment of facts and circumstances known, review of historical settlement patterns, estimates of trends in claims severity, frequency, legal theories of liability and other factors. Variables in the reserve estimation process can be affected by both internal and external events, such as changes in claims handling procedures, economic inflation or deflation, legal trends and legislative changes. Many of these items are not directly quantifiable, particularly on a prospective basis. Additionally, there may be significant reporting lags between the occurrence of the policyholder event and the time it is actually reported to the insurer. The future cash flows related to the items contained in the table below required estimation of both amount (including severity considerations) and timing. Amount and timing are frequently estimated separately. An estimation of both amount and timing of future cash flows related to claims and claim-related payments has unavoidable estimation uncertainty.

The contractual obligations at December 31, 2018 were as follows:

Payments Due by Period (in millions)	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Debt					
Senior notes	$6,250	$500	$500	$—	$5,250
Junior subordinated debentures	254	—	—	—	254
Total debt principal	6,504	500	500	—	5,504
Interest	6,247	326	604	584	4,733
Total long-term debt obligations (1)	12,751	826	1,104	584	10,237
Real estate and other operating leases (2)	500	127	194	102	77
Purchase obligations					
Information systems administration and maintenance commitments (3)	198	130	62	6	—
Other purchase commitments (4)	110	44	53	2	11
Total purchase obligations	308	174	115	8	11
Long-term unfunded investment commitments (5)	1,612	348	505	514	245
Estimated claims and claim-related payments					
Claims and claim adjustment expenses (6)	48,836	10,759	12,004	5,618	20,455
Claims from large deductible policies (7)	—	—	—	—	—
Loss-based assessments (8)	154	28	42	17	67
Reinsurance contracts accounted for as deposits (9)	1	—	1	—	—
Payout from ceded funds withheld (10)	105	42	12	13	38
Total estimated claims and claim-related payments	49,096	10,829	12,059	5,648	20,560
Liabilities related to unrecognized tax benefits (11)	67	—	67	—	—
Total	$64,334	$12,304	$14,044	$6,856	$31,130

See note 8 of notes to the consolidated financial statements for a further discussion of outstanding indebtedness.

(1) Because the amounts reported in the foregoing table include principal and interest, the total long-term debt obligations will not agree with the amounts reported in note 8.

(2) Represents agreements entered into in the ordinary course of business to lease office space, equipment and furniture. Future sublease rental income aggregating approximately $1 million will partially offset these commitments.

(3) Includes agreements with vendors to purchase system software administration and maintenance services.

(4) Includes commitments to vendors entered into in the ordinary course of business for goods and services including property, plant and equipment, office supplies, archival services, etc.

(5) Represents estimated timing for fulfilling unfunded commitments for private equity limited partnerships and real estate partnerships, as well as a put/call option entered into by the Company in connection with a business acquisition.

(6) The amounts in "Claims and claim adjustment expenses" in the table above represent the estimated timing of future payments for both reported and unreported claims incurred and related claim adjustment expenses, gross of reinsurance recoverables, excluding structured settlements expected to be paid by annuity companies.

The Company has entered into reinsurance agreements to manage its exposure to losses and protect its capital as described in note 5 of notes to the consolidated financial statements.

In order to qualify for reinsurance accounting, a reinsurance agreement must indemnify the insurer from insurance risk, i.e., the agreement must transfer amount and timing risk. Since the timing and amount of cash inflows from such reinsurance agreements are directly related to the underlying payment of claims and claim adjustment expenses by the insurer, reinsurance recoverables are recognized in a manner consistent with the liabilities (the estimated liability for claims and claim adjustment expenses) relating to the underlying reinsured contracts. The presence of any feature that can delay timely reimbursement of claims by a reinsurer results in the reinsurance contract being accounted for as a deposit rather than reinsurance. The assumptions used in estimating the amount and timing of the reinsurance recoverables are consistent with those used in estimating the amount and timing of the related liabilities.

The estimated future cash inflows from the Company's reinsurance contracts that qualify for reinsurance accounting are as follows:

(in millions)	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Reinsurance recoverables	$5,277	$ 897	$975	$536	$2,869

The Company manages its business and evaluates its liabilities for claims and claim adjustment expenses on a net of reinsurance basis. The estimated cash flows on a net of reinsurance basis are as follows:

(in millions)	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Claims and claim adjustment expenses, net	$43,559	$ 9,862	$11,029	$5,082	$17,586

For business underwritten by non-U.S. operations, future cash flows related to reported and unreported claims incurred and related claim adjustment expenses were translated at the spot rate on December 31, 2018.

The amounts reported in the table above and in the table of reinsurance recoverables above are presented on a nominal basis and have not been adjusted to reflect the time value of money. Accordingly, the amounts above will differ from the Company's balance sheet to the extent that the liability for claims and claim adjustment expenses and the related reinsurance recoverables have been discounted in the balance sheet. See note 1 of notes to the consolidated financial statements.

(7) Workers' compensation large deductible policies provide third-party coverage in which the Company typically is responsible for paying the entire loss under such policies and then seeks reimbursement from the insured for the deductible amount. "Claims from large deductible policies" represent the estimated future payment for claims and claim related expenses below the deductible amount, net of the estimated recovery of the deductible. The liability and the related deductible receivable for unpaid claims are presented in the consolidated balance sheet as "contractholder payables" and "contractholder receivables," respectively. Most deductibles for such policies are paid directly from the policyholder's escrow, which is periodically replenished by the policyholder. The payment of the loss amounts above the deductible are reported within "Claims and claim adjustment expenses" in the above table.

Because the timing of the collection of the deductible (contractholder receivables) occurs shortly after the payment of the deductible to a claimant (contractholder payables), these cash flows offset each other in the table.

The estimated timing of the payment of the contractholder payables and the collection of contractholder receivables for workers' compensation policies is presented below:

(in millions)	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Contractholder payables/receivables	$4,785	$ 1,305	$1,381	$719	$1,380

(8) The amounts in "Loss-based assessments" relate to estimated future payments of second-injury fund assessments which would result from payment of current claim liabilities. Second injury funds cover the cost of any additional benefits for aggravation of a pre-existing condition. For loss-based assessments, the cost is shared by the insurance industry and self-insureds, funded through assessments to insurance companies and self-insureds based on losses. Amounts relating to second-injury fund assessments are included in "other liabilities" in the consolidated balance sheet.

(9) The amounts in "Reinsurance contracts accounted for as deposits" represent estimated future nominal payments for reinsurance agreements that are accounted for as deposits. Amounts payable under deposit agreements are included in "other liabilities" in the consolidated balance sheet.

(10) The amounts in "Payout from ceded funds withheld" represent estimated payments for losses and return of funds held related to certain reinsurance arrangements whereby the Company holds a portion of the premium due to the reinsurer and is allowed to pay claims from the amounts held.

(11) The Company's current liabilities related to unrecognized tax benefits from uncertain tax positions are $67 million. Offsetting these liabilities are deferred tax assets of $27 million associated with the temporary differences that would exist if these positions become realized.

The above table does not include an analysis of liabilities reported for structured settlements for which the Company has purchased annuities and remains contingently liable in the event of default by the company issuing the annuity. The Company is not reasonably likely to incur material future payment obligations under such agreements. In addition, the Company is not currently subject to any minimum funding requirements for its qualified pension plan. Accordingly, future contributions are not included in the foregoing table.

Dividend Availability

The Company's principal insurance subsidiaries are domiciled in the State of Connecticut. The insurance holding company laws of Connecticut applicable to the Company's subsidiaries requires notice to, and approval by, the state insurance commissioner for the declaration or payment of any dividend that, together with other distributions made within the preceding twelve months, exceeds the greater of 10% of the insurer's statutory capital and surplus as of the preceding December 31, or the insurer's net income for the twelve-month period ending the preceding December 31, in each case determined in accordance with statutory accounting practices and by state regulation. This declaration or payment is further limited by adjusted unassigned surplus, as determined in accordance with statutory accounting practices. The insurance holding company laws of other states in which the Company's subsidiaries are domiciled generally contain similar, although in some instances somewhat more restrictive, limitations on the payment of dividends. A maximum of $2.52 billion is available by the end of 2019 for such dividends to the holding company, TRV, without prior approval of the Connecticut Insurance Department. The Company may choose to accelerate the timing within 2019 and/or increase the amount of dividends from its insurance subsidiaries in 2019, which could result in certain dividends being subject to approval by the Connecticut Insurance Department.

In addition to the regulatory restrictions on the availability of dividends that can be paid by the Company's U.S. insurance subsidiaries, the maximum amount of dividends that may be paid to the Company's shareholders is limited, to a lesser degree, by certain covenants contained in its line of credit agreement with a syndicate of financial institutions that require the Company to maintain a minimum consolidated net worth as described in note 8 of notes to the consolidated financial statements.

TRV is not dependent on dividends or other forms of repatriation from its foreign operations to support its liquidity needs. The undistributed earnings of the Company's foreign operations are intended to be permanently reinvested in

those operations, and such earnings were not material to the Company's financial position or liquidity at December 31, 2018.

TRV and its two non-insurance holding company subsidiaries received dividends of $2.30 billion, $2.33 billion and $3.05 billion from their U.S. insurance subsidiaries in 2018, 2017 and 2016, respectively.

Pension and Other Postretirement Benefit Plans

The Company sponsors a qualified non-contributory defined benefit pension plan (the Qualified Plan), which covers substantially all U.S. domestic employees and provides benefits primarily under a cash balance formula. In addition, the Company sponsors a nonqualified defined benefit pension plan which covers certain highly-compensated employees, pension plans for employees of its foreign subsidiaries, and a postretirement health and life insurance benefit plan for employees satisfying certain age and service requirements and for certain retirees.

The Qualified Plan is subject to regulations under the Employee Retirement Income Security Act of 1974 as amended (ERISA), which requires plans to meet minimum standards of funding and requires such plans to subscribe to plan termination insurance through the Pension Benefit Guaranty Corporation (PBGC). The Company does not have a minimum funding requirement for the Qualified Plan for 2019 and does not anticipate having a minimum funding requirement in 2020. The Company has significant discretion in making contributions above those necessary to satisfy the minimum funding requirements. In 2018, 2017 and 2016, there was no minimum funding requirement for the Qualified Plan. In 2018, 2017 and 2016, the Company voluntarily made contributions totaling $200 million, $300 million and $200 million, respectively, to the Qualified Plan. Based on its funded status at December 31, 2018, the Company does not currently anticipate making a voluntary contribution to the Qualified Plan in 2019. In determining future contributions, the Company will consider the performance of the plan's investment portfolio, the effects of interest rates on the projected benefit obligation of the plan and the Company's other capital requirements.

The Qualified Plan assets are managed to maximize long-term total return while maintaining an appropriate level of risk. The Company's overall strategy is to achieve a mix of approximately 85% to 90% of investments for long-term growth and 10% to 15% for near-term benefit payments with a diversification of asset types, fund strategies and fund managers. The current target allocations for plan assets are 55% to 65% equity securities and 20% to 40% fixed income securities, with the remainder allocated to short-term securities. For 2019, the Company plans to apply an expected long-term rate of return on plan assets of 7.00%, the same rate that was applied in 2018. The expected rate of return reflects the Company's current expectations with regard to long-term returns in the capital markets, taking into account the pension plan's asset allocation targets, the historical performance and current valuation of U.S. and international equities, and the level of long term interest rate and inflation expectations. The Company's expected long-term rate of return on plan assets also contemplates a return to more normal levels of long-term interest rates in the future.

For further discussion of the pension and other postretirement benefit plans, see note 14 of notes to the consolidated financial statements.

Risk-Based Capital

The NAIC has an RBC requirement for most property and casualty insurance companies, which determines minimum capital requirements and is intended to raise the level of protection for policyholder obligations. The Company's U.S. insurance subsidiaries are subject to these NAIC RBC requirements based on laws that have been adopted by individual states. These requirements subject insurers having policyholders' surplus less than that required by the RBC calculation to varying degrees of regulatory action, depending on the level of capital inadequacy. Each of the Company's U.S. insurance subsidiaries had policyholders' surplus at December 31, 2018 significantly above the level at which any RBC regulatory action would occur. Regulators in the jurisdictions in which the Company's foreign insurance subsidiaries are located require insurance companies to maintain certain levels of capital depending on, among other things, the type and amount of insurance policies written. Each of the Company's foreign insurance subsidiaries had capital significantly above their respective regulatory requirements at December 31, 2018.

Off-Balance Sheet Arrangements

The Company has entered into certain contingent obligations for guarantees related to selling businesses to third parties, certain investments, third-party loans related to certain investments, certain insurance policy obligations of former insurance subsidiaries and various other indemnifications. See note 16 of notes to the consolidated financial

statements. The Company does not expect these arrangements will have a material effect on the Company's financial position, changes in financial position, revenues and expenses, results of operations, liquidity, capital expenditures or capital resources.

CRITICAL ACCOUNTING ESTIMATES

The Company considers its most significant accounting estimates to be those applied to claims and claim adjustment expense reserves and related reinsurance recoverables, investment valuation and impairments, and goodwill and other intangible assets impairments.

Claims and Claim Adjustment Expense Reserves

Gross claims and claim adjustment expense reserves by product line were as follows:

	December 31, 2018			December 31, 2017		
(in millions)	Case	IBNR	Total	Case	IBNR	Total
General liability	$4,780	$7,092	$11,872	$4,878	$6,823	$11,701
Commercial property	1,157	297	1,454	1,039	401	1,440
Commercial multi-peril	2,089	1,886	3,975	1,954	1,916	3,870
Commercial automobile	2,339	1,661	4,000	2,237	1,271	3,508
Workers' compensation	10,299	9,216	19,515	10,379	9,092	19,471
Fidelity and surety	280	288	568	274	300	574
Personal automobile	2,038	1,400	3,438	1,946	1,329	3,275
Homeowners and personal—other	942	884	1,826	795	710	1,505
International and other	2,574	1,431	4,005	2,728	1,561	4,289
Property-casualty	26,498	24,155	50,653	26,230	23,403	49,633
Accident and health	15	—	15	17	—	17
Claims and claim adjustment expense reserves	$26,513	$24,155	$50,668	$26,247	$23,403	$49,650

The $1.02 billion increase in gross claims and claim adjustment expense reserves since December 31, 2017 primarily reflected the impacts of (i) higher volumes of insured exposures and loss cost trends for the current accident year and (ii) catastrophe losses incurred in 2018, partially offset by the impacts of (iii) payments related to catastrophe losses incurred in 2017 and (iv) favorable prior year reserve development.

Asbestos and environmental reserves are included in the General liability, Commercial multi-peril and International and other lines in the foregoing summary table. Asbestos and environmental reserves are discussed separately; see "Asbestos Claims and Litigation", "Environmental Claims and Litigation" and "Uncertainty Regarding Adequacy of Asbestos and Environmental Reserves."

Claims and claim adjustment expense reserves represent management's estimate of the ultimate liability for unpaid losses and loss adjustment expenses for claims that have been reported and claims that have been incurred but not yet reported (IBNR) as of the balance sheet date. Claims and claim adjustment expense reserves do not represent an exact calculation of liability, but instead represent management estimates, primarily utilizing actuarial expertise and projection methods. These estimates are expectations of what the ultimate settlement and administration of claims will cost upon final resolution in the future, based on the Company's assessment of facts and circumstances then known, review of historical settlement patterns, estimates of trends in claims severity and frequency, expected interpretations of legal theories of liability and other factors. In establishing gross claims and claim adjustment expense reserves, the Company also considers salvage and subrogation. Estimated recoveries from reinsurance are included in "Reinsurance Recoverables" as an asset on the Company's consolidated balance sheet. The claims and claim adjustment expense reserves are reviewed regularly by qualified actuaries employed by the Company.

The process of estimating claims and claim adjustment expense reserves involves a high degree of judgment and is subject to a number of variables. These variables can be affected by both internal and external events, such as changes in claims handling procedures, changes in individuals involved in the reserve estimation process, economic inflation, legal trends and legislative changes, among others. The impact of many of these items on ultimate costs for claims and claim adjustment expenses is difficult to estimate. Estimation difficulties also differ significantly by product line due to differences in claim complexity, the volume of claims, the potential severity of individual claims, the determination of occurrence date for a claim and reporting lags (the time between the occurrence of the policyholder event and when it is actually reported to the insurer). Informed judgment is applied throughout the process, including the application of various individual experiences and expertise to multiple sets of data and analyses. The Company continually refines its estimates in a regular ongoing process as historical loss experience develops and additional claims are reported and settled. The Company rigorously attempts to consider all significant facts and circumstances known at the time claims and claim adjustment expense reserves are established. Due to the inherent uncertainty underlying these estimates

including, but not limited to, the future settlement environment, final resolution of the estimated liability for claims and claim adjustment expenses may be higher or lower than the related claims and claim adjustment expense reserves at the reporting date. Therefore, actual paid losses, as claims are settled in the future, may be materially different than the amount currently recorded-favorable or unfavorable.

Because establishment of claims and claim adjustment expense reserves is an inherently uncertain process involving estimates and the application of judgment, currently established claims and claim adjustment expense reserves may change. The Company reflects adjustments to the reserves in the results of operations in the period the estimates are changed.

There are also additional risks which impact the estimation of ultimate costs for catastrophes. For example, the estimation of reserves related to hurricanes, tornadoes, wildfires and other catastrophic events can be affected by the inability of the Company and its insureds to access portions of the impacted areas, the complexity of factors contributing to the losses, the legal and regulatory uncertainties, including the interpretation of policy terms and conditions, and the nature of the information available to establish the reserves. Complex factors include, but are not limited to: determining whether damage was caused by flooding versus wind; evaluating general liability and pollution exposures; estimating additional living expenses; estimating the impact of demand surge, infrastructure disruption, fraud, the effect of mold damage and business interruption costs; and reinsurance collectibility. The timing of a catastrophe, such as at or near the end of a reporting period, can also affect the information available to the Company in estimating reserves for that reporting period. The estimates related to catastrophes are adjusted as actual claims emerge.

A portion of the Company's gross claims and claim adjustment expense reserves (totaling $1.97 billion at December 31, 2018) are for asbestos and environmental claims and related litigation. While the ongoing review of asbestos and environmental claims and associated liabilities considers the inconsistencies of court decisions as to coverage, plaintiffs' expanded theories of liability and the risks inherent in complex litigation and other uncertainties, in the opinion of the Company's management, it is possible that the outcome of the continued uncertainties regarding these claims could result in liability in future periods that differs from current insurance reserves by an amount that could be material to the Company's future operating results. See the preceding discussion of "Asbestos Claims and Litigation" and "Environmental Claims and Litigation."

General Discussion

The process for estimating the liabilities for claims and claim adjustment expenses begins with the collection and analysis of claim data. Data on individual reported claims, both current and historical, including paid amounts and individual claim adjuster estimates, are grouped by common characteristics (components) and evaluated by actuaries in their analyses of ultimate claim liabilities. Such data is occasionally supplemented with external data as available and when appropriate. The process of analyzing reserves for a component is undertaken on a regular basis, generally quarterly, in light of continually updated information.

Multiple estimation methods are available for the analysis of ultimate claim liabilities. Each estimation method has its own set of assumption variables and its own advantages and disadvantages, with no single estimation method being better than the others in all situations and no one set of assumption variables being meaningful for all product line components. The relative strengths and weaknesses of the particular estimation methods when applied to a particular group of claims can also change over time. Therefore, the actual choice of estimation method(s) can change with each evaluation. The estimation method(s) chosen are those that are believed to produce the most reliable indication at that particular evaluation date for the claim liabilities being evaluated.

In most cases, multiple estimation methods will be valid for the particular facts and circumstances of the claim liabilities being evaluated. This will result in a range of reasonable estimates for any particular claim liability. The Company uses such range analyses to back test whether previously established estimates for reserves by reporting segments are reasonable, given available information. Reported values found to be closer to the endpoints of a range of reasonable estimates are subject to further detailed reviews. These reviews may substantiate the validity of management's recorded estimate or lead to a change in the reported estimate.

The exact boundary points of these ranges are more qualitative than quantitative in nature, as no clear line of demarcation exists to determine when the set of underlying assumptions for an estimation method switches from being reasonable to unreasonable. As a result, the Company does not believe that the endpoints of these ranges are or would be comparable across companies. In addition, potential interactions among the different estimation assumptions for different product lines make the aggregation of individual ranges a highly judgmental and inexact process.

Property-casualty insurance policies are either written on a “claims-made” or on an “occurrence” basis. Claims-made policies generally cover, subject to requirements in individual policies, claims reported during the policy period. Policies that are written on an occurrence basis require that the insured demonstrate that a loss occurred in the policy period, even if the insured reports the loss many years later.

Most general liability policies are written on an occurrence basis. These policies are subject to substantial loss development over time as facts and circumstances change in the years following the policy issuance. The occurrence form, which accounts for much of the reserve development in asbestos and environmental exposures, is also used to provide coverage for construction general

liability, including construction defect. Occurrence-based forms of insurance for general liability exposures require substantial projection of loss trends, which can be influenced by a number of factors, including future inflation, judicial interpretations and societal litigation trends (e.g., size of jury awards and propensity of individuals to pursue litigation), among others.

A basic premise in most actuarial analyses is that past patterns demonstrated in the data will repeat themselves in the future, absent a material change in the associated risk factors discussed below. To the extent a material change affecting the ultimate claim liability is known, such change is estimated to the extent possible through an analysis of internal company data and, if available and when appropriate, external data. Such a measurement is specific to the facts and circumstances of the particular claim portfolio and the known change being evaluated. Significant structural changes to the available data, product mix or organization can materially impact the reserve estimation process. In addition, the introduction of new products creates a unique risk as historical company data would typically not be available.

Informed judgment is applied throughout the reserving process. This includes the application of various individual experiences and expertise to multiple sets of data and analyses. In addition to actuaries, experts involved with the reserving process also include underwriting and claims personnel and lawyers, as well as other company management. Therefore, management may have to consider varying individual viewpoints as part of its estimation of claims and claim adjustment expense reserves. It is also likely that during periods of significant change, such as a merger, consistent application of informed judgment becomes even more complicated and difficult.

The variables discussed above in this general discussion have different impacts on reserve estimation uncertainty for a given product line, depending on the length of the claim tail, the reporting lag, the impact of individual claims and the complexity of the claim process for a given product line.

Product lines are generally classifiable as either long tail or short tail, based on the average length of time between the event triggering claims under a policy and the final resolution of those claims. Short tail claims are reported and settled quickly, resulting in less estimation variability. The longer the time to final claim resolution, the greater the exposure to estimation risks and hence the greater the estimation uncertainty.

A major component of the claim tail is the reporting lag. The reporting lag, which is the time between the event triggering a claim and the reporting of the claim to the insurer, makes estimating IBNR inherently more uncertain. In addition, the greater the reporting lag, the greater the proportion of IBNR to the total claim liability for the product line. Writing new products with material reporting lags can result in adding several years' worth of IBNR claim exposure before the reporting lag exposure becomes clearly observable, thereby increasing the risk associated with estimating the liabilities for claims and claim adjustment expenses for such products. The most extreme example of claim liabilities with long reporting lags are asbestos claims.

For some lines, the impact of large individual claims can be material to the analysis. These lines are generally referred to as being "low frequency/high severity," while lines without this "large claim" sensitivity are referred to as "high frequency/low severity." Estimates of claim liabilities for low frequency/high severity lines can be sensitive to the impact of a small number of potentially large claims. As a result, the role of judgment is much greater for these reserve estimates. In contrast, for high frequency/low severity lines the impact of individual claims is relatively minor and the range of reasonable reserve estimates is likely narrower and more stable.

Claim complexity can also greatly affect the estimation process by impacting the number of assumptions needed to produce the estimate, the potential stability of the underlying data and claim process, and the ability to gain an understanding of the data. Product lines with greater claim complexity, such as for certain surety and construction exposures, have inherently greater estimation uncertainty.

Actuaries have to exercise a considerable degree of judgment in the evaluation of all these factors in their analysis of reserves. The human element in the application of actuarial judgment is unavoidable when faced with material uncertainty. Different actuaries may choose different assumptions when faced with such uncertainty, based on their individual backgrounds, professional experiences and areas of focus. Hence, the estimates selected by the various actuaries may differ materially from each other.

Lastly, significant structural changes to the available data, product mix or organization can also materially impact the reserve estimation process. Events such as mergers increase the inherent uncertainty of reserve estimates for a period of time, until stable trends re-establish themselves within the new organization.

Risk Factors

The major causes of material uncertainty ("risk factors") generally will vary for each product line, as well as for each separately analyzed component of the product line. In a few cases, such risk factors are explicit assumptions of the estimation method, but in most cases, they are implicit. For example, a method may explicitly assume that a certain percentage of claims will close each year, but will implicitly assume that the legal interpretation of existing contract language will remain unchanged. Actual results will likely vary from expectations for each of these assumptions, causing actual paid losses, as claims are settled in the future, to be different in amount than the reserves being estimated currently.

Some risk factors will affect more than one product line. Examples include changes in claim department practices, changes in settlement patterns, regulatory and legislative actions, court actions, timeliness of claim reporting, state mix of claimants and degree of claimant fraud. The extent of the impact of a risk factor will also vary by components within a product line. Individual risk factors are also subject to interactions with other risk factors within product line components.

The effect of a particular risk factor on estimates of claim liabilities cannot be isolated in most cases. For example, estimates of potential claim settlements may be impacted by the risk associated with potential court rulings, but the final settlement agreement typically does not delineate how much of the settled amount is due to this and other factors.

The evaluation of data is also subject to distortion from extreme events or structural shifts, sometimes in unanticipated ways. For example, the timing of claims payments in one geographic region may be impacted if claim adjusters are temporarily reassigned from that region to help settle catastrophe claims in another region.

While some changes in the claim environment are sudden in nature (such as a new court ruling affecting the interpretation of all contracts in that jurisdiction), others are more evolutionary. Evolutionary changes can occur when multiple factors affect final claim values, with the uncertainty surrounding each factor being resolved separately, in stepwise fashion. The final impact is not known until all steps have occurred.

Sudden changes generally cause a one-time shift in claim liability estimates, although there may be some lag in reliable quantification of their impact. Evolutionary changes generally cause a series of shifts in claim liability estimates, as each component of the evolutionary change becomes evident and estimable.

Actuarial Methods for Analyzing and Estimating Claims and Claim Adjustment Expense Reserves

The principal estimation and analysis methods utilized by the Company's actuaries to evaluate management's existing estimates for prior accident periods are the paid loss development method, the case incurred development method, the Bornhuetter-Ferguson (BF) method, and average value analysis combined with the reported claim development method. The BF method is usually utilized for more recent accident periods, with a transition to other methods as the underlying claim data becomes more voluminous and therefore more credible. These estimation and analysis methods are typically referred to as conventional actuarial methods. (See note 7 of notes to the consolidated financial statements for an explanation of these methods).

While the Company utilizes these conventional actuarial methods to estimate the claims liability for its various businesses, Company actuaries evaluating a particular component for a product line may select from the full range of methods developed within the casualty actuarial profession. The Company's actuaries are also continually monitoring developments within the profession for advances in existing techniques or the creation of new techniques that might improve current and future estimates.

Some components of a product line may be susceptible to infrequent large claims or not be subject to conventional methods. In such cases, the Company's actuarial analysis will isolate such components for review. The reserves

excluding such large claims are generally analyzed using the conventional methods described above. The reserves associated with large claims are then analyzed utilizing various methods, such as:

- Estimating the number of large claims and their average values based on historical trends from prior accident periods, adjusted for the current environment and supplemented with actual data for the accident year analyzed to the extent available.
- Utilizing individual claim adjuster estimates of the large claims, combined with continual monitoring of the aggregate accuracy of such claim adjuster estimates. (This monitoring may lead to supplemental adjustments to the aggregate of such claim estimates).
- Utilizing historic longer-term average ratios of large claims to small claims, and applying such ratios to the estimated ultimate small claims from conventional analysis.
- Ground-up analysis of the underlying exposure (typically used for asbestos and environmental).

The results of such methodologies are subjected to various reasonability and diagnostic tests, including implied incurred-loss-to-earned-premium ratios, non-zero claim severity trends and paid-to-incurred loss ratios. An actual versus expected analysis is also performed comparing actual loss development to expected development embedded within management's estimate. Additional analyses may be performed based on the results of these diagnostics, including the investigation of other actuarial methods.

The methods described above are generally utilized to evaluate management's estimate for prior accident periods. For the initial estimate of the current accident year, however, the available claim data is typically insufficient to produce a reliable indication. As a result, the initial estimate for an accident year is generally based on an exposure-based method using either the loss ratio projection method or the expected loss method. The loss ratio projection method, which is typically used for guaranteed-cost business, develops an initial estimate for an accident year by multiplying earned premiums for the accident year by a projected loss ratio. The projected loss ratio is determined by analyzing prior period experience, and adjusting for loss cost trends, rate level differences, mix of business changes and other known or observed factors influencing the current accident year relative to prior accident years. The exact number of prior accident years utilized varies by product line component, based on the stability and consistency of the individual accident year estimates. The expected loss method, which is typically used for loss sensitive business, develops an initial estimate of ultimate claims and claim adjustment expenses for an accident year by analyzing exposures by account.

Management's Estimates

At least once per quarter, certain members of Company management meet with the Company's actuaries to review the latest claims and claim adjustment expense reserve analyses. Based on these analyses, management determines whether its ultimate claim liability estimates should be changed. In doing so, it must evaluate whether the new data provided represents credible actionable information or an anomaly that will have no effect on estimated ultimate claim liability. For example, as described above, payments may have decreased in one geographic region due to fewer claim adjusters being available to process claims. The resulting claim payment patterns would be analyzed to determine whether or not the change in payment pattern represents a change in ultimate claim liability.

Such an assessment requires considerable judgment. It is frequently not possible to determine whether a change in the data is an anomaly until sometime after the event. Even if a change is determined to be permanent, it is not always possible to reliably determine the extent of the change until sometime later. The overall detailed analyses supporting such an effort can take several months to perform as the underlying causes of the trends observed need to be evaluated, which may require the gathering or assembling of data not previously available. It may also include interviews with experts involved with the underlying processes. As a result, there can be a time lag between the emergence of a change and a determination that the change should be reflected in the Company's estimated claim liabilities. The final estimate selected by management in a reporting period is based on these various detailed analyses of past data, adjusted to reflect any new actionable information.

The Audit Committee of the Board of Directors reviews the process by which the Company establishes reserves for the purpose of the Company's financial statements.

Discussion of Product Lines

The following section details reserving considerations and common risk factors by product line. There are many additional risk factors that may impact ultimate claim costs. Each risk factor presented will have a different impact on required reserves. Also, risk factors can have offsetting or compounding effects on required reserves. For example, in workers' compensation, the use of expensive medical procedures that result in medical cost inflation may enable workers to return to work faster, thereby lowering indemnity costs. Thus, in almost all cases, it is impossible to discretely measure the effect of a single risk factor and construct a meaningful sensitivity expectation.

In order to provide information on reasonably possible reserving changes by product line, the historical changes in year-end claims and claim adjustment expense reserves over a one-year period are provided for the U.S. product lines. This information is provided for both the Company and the industry for the nine most recent years, and is based on the most recent publicly available data for the reported line(s) that most closely match the individual product line being discussed. These changes were calculated, net of reinsurance, from statutory annual statement data found in Schedule P of those statements, and represent the reported reserve development on the beginning-of-the-year claim liabilities divided by the beginning claim liabilities, all accident years combined, excluding non-defense related claim adjustment expense. Data presented for the Company includes history for the entire Travelers group (U.S. companies only), as required by the statutory reporting instructions promulgated by state regulatory authorities for Schedule P. Comparable data for non-U.S. companies is not available.

General Liability

General liability is generally considered a long tail line, as it takes a relatively long period of time to finalize and settle claims from a given accident year. The speed of claim reporting and claim settlement is a function of the characteristics of claims, including specific coverage provided, the jurisdiction and specific policy provisions such as self-insured retentions, among others. There are numerous components underlying the general liability product line. Some of these have relatively moderate payment patterns (with most of the claims for a given accident year closed within five to seven years), while others can have extreme lags in both reporting and payment of claims (e.g., a reporting lag of a decade or more for “construction defect” claims).

While the majority of general liability coverages are written on an “occurrence” basis, certain general liability coverages (such as those covering management and professional liability, including cyber coverages) are typically insured on a “claims-made” basis.

General liability reserves are generally analyzed as two components: primary and excess/umbrella, with the primary component generally analyzed separately for bodily injury and property damage. Bodily injury liability payments reimburse the claimant for damages pertaining to physical injury as a result of the policyholder’s legal obligation arising from non-intentional acts such as negligence, subject to the insurance policy provisions. In some cases the damages can include future wage loss (which is a function of future earnings power and wage inflation) and future medical treatment costs. Property damage liability payments result from damages to the claimant’s private property arising from the policyholder’s legal obligation for non-intentional acts. In most cases, property damage losses are a function of costs as of the loss date, or soon thereafter.

In addition, sizable or unique exposures are reviewed separately. These exposures include asbestos, environmental, other mass torts, construction defect and large unique accounts that would otherwise distort the analysis. These unique categories often require a very high degree of judgment and require reserve analyses that do not rely on conventional actuarial methods.

Defense costs are also a part of the insured costs covered by liability policies and can be significant, sometimes greater than the cost of the actual paid claims. For some products this risk is mitigated by policy language such that the insured portion of defense costs is included in the policy limit available to pay the claim. Such “defense within the limits” policies are most common for “claims-made” products. When defense costs are outside of the policy limits, the full amount of the policy limit is available to pay claims and the amounts paid for defense costs have no contractual limit.

This line is typically the largest source of reserve estimate uncertainty in the United States (excluding assumed reinsurance contracts covering the same risk). Major contributors to this reserve estimate uncertainty include the reporting lag (i.e., the length of time between the event triggering coverage and the actual reporting of the claim), the number of parties involved in the underlying tort action, whether the “event” triggering coverage is confined to only one time period or is spread over multiple time periods, the potential dollars involved (in the individual claim actions), whether such claims were reasonably foreseeable and intended to be covered at the time the contracts were written (i.e., coverage dispute potential), and the potential for mass claim actions. Claims with longer reporting lags result in greater estimation uncertainty. This is especially true for alleged claims with a latency feature, particularly where courts have ruled that coverage is spread over multiple policy years, hence involving multiple defendants (and their insurers and reinsurers) and multiple policies (thereby increasing the potential dollars involved and the underlying settlement complexity). Claims with long latencies also increase the potential recognition lag (i.e., the lag between writing a type of policy in a certain market and the recognition that such policies have potential mass tort and/or latent claim exposure).

The amount of reserve estimate uncertainty also varies significantly by component for the general liability product line. The components in this product line with the longest latency, longest reporting lags, largest potential dollars involved and greatest claim settlement complexity are asbestos and environmental. Components that include latency, reporting lag and/or complexity issues, but to a materially lesser extent than asbestos and environmental, include construction defect and other mass tort actions. Many components of general liability are not subject to material latency or claim complexity risks and hence have materially less uncertainty than the previously mentioned components. In general, components with shorter reporting lags, fewer parties involved in settlement negotiations, only one policy potentially triggered per claim, fewer potential settlement dollars, reasonably foreseeable (and stable) potential hazards/claims and no mass tort potential result in much less reserve estimate uncertainty than components without those characteristics.

In addition to the conventional actuarial methods mentioned in the general discussion section, the company utilizes various report year development methods for the construction defect components of this product line. The Construction Defect report year development analysis is supplemented with projected claim counts and average values for IBNR claim counts. For components with greater lags in claim reporting, such as excess and umbrella components of this product line, the Company relies more heavily on the BF method than on the paid and case incurred development methods.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required general liability reserves (beyond those included in the general discussion section) include:

General liability risk factors

- Changes in claim handling philosophies
- Changes in policy provisions or court interpretation of such provisions
- New or expanded theories of liability
- Trends in jury awards
- Changes in the propensity to sue, in general with specificity to particular issues
- Changes in the propensity to litigate rather than settle a claim
- Increases in attorney involvement in, or impact on, claims
- Changes in statutes of limitations
- Changes in the underlying court system
- Distortions from losses resulting from large single accounts or single issues
- Changes in tort law
- Shifts in lawsuit mix between federal and state courts
- Changes in claim adjuster processes or reporting which may cause distortions in the data being analyzed
- The potential impact of inflation on loss costs
- Changes in settlement patterns

General liability book of business risk factors
- Changes in policy provisions (e.g., deductibles, policy limits, endorsements)
- Changes in underwriting standards
- Product mix (e.g., size of account, industries insured, jurisdiction mix)

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for general liability (excluding asbestos and environmental), a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.5% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line, excluding estimated asbestos and environmental amounts, over the last nine years has varied from -8% to -1% (averaging -4%) for the Company, and from -4% to 0% (averaging -2%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. General liability reserves (excluding asbestos and environmental) represent approximately 20% of the Company's total claims and claim adjustment expense reserves.

The Company's change in reserve estimate for this product line, excluding estimated asbestos and environmental amounts, was -1% for 2018, -4% for 2017 and -4% for 2016. The 2018 change primarily reflected better than expected loss experience for management liability coverages in Bond & Specialty Insurance for accident years 2013 through 2015, partially offset by higher than expected loss experience for both primary and excess coverages in Business Insurance for accident years 2012 through 2017. The 2017 change primarily reflected better than expected loss experience for both primary and excess coverages for accident years 2009 through 2016. The 2016 change primarily reflected better than expected loss experience for both primary and excess coverages for accident years 2015 and prior.

Commercial Property

Commercial property is generally considered a short tail line with a simpler and faster claim reporting and adjustment process than liability coverages, and less uncertainty in the reserve setting process (except for more complex business interruption claims). It is generally viewed as a moderate frequency, low to moderate severity line, except for catastrophes and coverage related to large properties. The claim reporting and settlement process for property coverage claim reserves is generally restricted to the insured and the insurer. Overall, the claim liabilities for this line create a low estimation risk, except possibly for catastrophes and business interruption claims.

Commercial property reserves are typically analyzed in two components, one for catastrophic or other large single events, and another for all other events. Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required property reserves (beyond those included in the general discussion section) include:

Commercial property risk factors

- Physical concentration of policyholders
- Availability and cost of local contractors
- For the more severe catastrophic events, “demand surge” inflation, which refers to significant short-term increases in building material and labor costs due to a sharp increase in demand for those materials and services
- Local building codes
- Amount of time to return property to full usage (for business interruption claims)
- Frequency of claim re-openings on claims previously closed
- Court interpretation of policy provisions (such as occurrence definition, or wind versus flooding)
- Lags in reporting claims (e.g., winter damage to summer homes, hidden damage after an earthquake, hail damage to roofs and/or equipment on roofs)
- Court or legislative changes to the statute of limitations

Commercial property book of business risk factors

- Policy provisions mix (e.g., deductibles, policy limits, endorsements)
- Changes in underwriting standards

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for property, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.1% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line over the last nine years has varied from -25% to -5% (averaging -15%) for the Company, and from -14% to -5% (averaging -8%) for the industry overall. The Company’s year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Commercial property reserves represent approximately 3% of the Company’s total claims and claim adjustment expense reserves.

Since commercial property is considered a short tail coverage, the one year change for commercial property can be more volatile than that for the longer tail product lines. This is due to the fact that the majority of the reserve for commercial property relates to the most recent accident year, which is subject to the most uncertainty for all product lines. This recent accident year uncertainty is relevant to commercial property because of weather-related events which tend to be concentrated in the second half of the year, and generally are not completely resolved until the following year. Reserve estimates associated with major catastrophes may take even longer to resolve. The reserve estimates for this product line are also potentially subject to material changes due to uncertainty in measuring ultimate losses for significant catastrophes such as Storm Sandy and wildfires.

The Company’s change in reserve estimate for this product line was -11% for 2018, -9% for 2017 and -9% for 2016. The 2018 change primarily reflected better than expected loss experience related to both catastrophe and non-catastrophe losses for accident years 2015 through 2017. The 2017 change primarily reflected better than expected loss experience related to non-catastrophe losses for accident years 2015 and 2016. The 2016 change primarily reflected better than expected loss experience related to non-catastrophe losses for accident years 2014 and 2015.

Commercial Multi-Peril

Commercial multi-peril provides a combination of property and liability coverage typically for small businesses and, therefore, includes both short and long tail coverages. For property coverage, it generally takes a relatively short period of time to close claims, while for the other coverages, generally for the liability coverages, it takes a longer period of time to close claims.

The reserving risk for this line is dominated by the liability coverage portion of this product, except occasionally in the event of catastrophic or other large single loss events. The reserving risk for this line differs from that of the general liability product line and the property product line due to the nature of the customer. Commercial multi-peril is generally sold to small- to mid-sized accounts, while the customer profile for general liability and commercial property includes larger customers.

See “Commercial property risk factors” and “General liability risk factors,” discussed above, with regard to reserving risk for commercial multi-peril.

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for commercial multi-peril (excluding asbestos and environmental), a 1% increase (decrease) in

incremental paid loss development for each future calendar year could result in a 1.2% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line, excluding estimated asbestos and environmental amounts, over the last nine years has varied from -5% to 5% (averaging 1%) for the Company, and from -4% to 1% (averaging -2%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Commercial multi-peril reserves (excluding asbestos and environmental reserves) represent approximately 8% of the Company's total claims and claim adjustment expense reserves.

As discussed above, this line combines general liability and commercial property coverages and it has been impacted in the past by many of the same events as those two lines.

The Company's change in reserve estimate for this product line was 1% for 2018, -5% for 2017 and 1% for 2016. The 2018 change primarily reflected higher than expected loss experience for liability coverages for accident year 2017. The 2017 change primarily reflected better than expected loss experience for liability coverages for accident years 2016 and prior. The 2016 change primarily reflected higher than expected loss experience for property coverages related to non-catastrophe losses for accident year 2015.

Commercial Automobile

The commercial automobile product line is a mix of property and liability coverages and, therefore, includes both short and long tail coverages. The payments that are made quickly typically pertain to auto physical damage (property) claims and property damage (liability) claims. The payments that take longer to finalize and are more difficult to estimate relate to bodily injury claims. In general, claim reporting lags are generally short, claim complexity is not a major issue, and the line is viewed as high frequency, low to moderate severity. Overall, the claim liabilities for this line create a moderate estimation risk. Recently, the Company has seen more of an increase in the rate of attorney involvement than it had anticipated and a lengthening of the claim development pattern. As a consequence, the Company has experienced a higher level of bodily injury severity than it had anticipated.

Commercial automobile reserves are typically analyzed in four components: bodily injury liability; property damage liability; collision claims; and comprehensive claims. These last two components have minimum reserve risk and fast payouts and, accordingly, separate risk factors are not presented.

The Company utilizes the conventional actuarial methods mentioned in the general discussion above in estimating claim liabilities for this line. This is supplemented with detailed custom analyses where needed.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required commercial automobile reserves (beyond those included in the general discussion section) include:

Bodily injury and property damage liability risk factors

- Trends in jury awards
- Changes in the underlying court system
- Changes in case law
- Litigation trends
- Increases in attorney involvement in, or impact on, claims
- Frequency of claims with payment capped by policy limits
-

Change in average severity of accidents, or proportion of severe accidents
- Changes in auto safety technology
- Subrogation opportunities
- Changes in claim handling philosophies
- Frequency of visits to health providers
- Number of medical procedures given during visits to health providers
- Types of health providers used
- Types of medical treatments received
- Changes in cost of medical treatments
- Degree of patient responsiveness to treatment

Commercial automobile book of business risk factors

- Changes in policy provisions (e.g., deductibles, policy limits, endorsements, etc.)
- Changes in mix of insured vehicles (e.g., long haul trucks versus local and smaller vehicles, fleet risks versus non-fleets)
- Changes in underwriting standards

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for commercial automobile, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.3% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line over the last nine years has varied from -2% to 11% (averaging 3%) for the Company, and from -3% to 7% (averaging 2%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Commercial automobile reserves represent approximately 8% of the Company's total claims and claim adjustment expense reserves.

The Company's change in reserve estimate for this product line was 11% for 2018, 4% for 2017 and -1% for 2016. The 2018 change primarily reflected higher than expected loss experience for liability coverages for accident years 2014 through 2017. The 2017 change primarily reflected higher than expected loss experience for liability coverages for accident years 2013 through 2016. The 2016 change primarily reflected better than expected loss experience for accident years 2011 and prior.

Workers' Compensation

Workers' compensation is generally considered a long tail coverage, as it takes a relatively long period of time to finalize claims from a given accident year. While certain payments such as initial medical treatment or temporary wage replacement for the injured worker are made quickly, some other payments are made over the course of several years, such as awards for permanent partial injuries. In addition, some payments can run as long as the injured worker's life, such as permanent disability benefits and on-going medical care. Despite the possibility of long payment tails, the reporting lags are generally short, payment obligations are generally not complex, and most of the liability can be considered high frequency with moderate severity. The largest reserve risk generally comes from the low frequency, high severity claims providing lifetime coverage for medical expense arising from a worker's injury, as such claims are subject to greater inflation risk. Overall, the claim liabilities for this line create a somewhat greater than moderate estimation risk.

Workers' compensation reserves are typically analyzed in three components: indemnity losses, medical losses and claim adjustment expenses.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required workers' compensation reserves (beyond those included in the general discussion section) include:

Indemnity risk factors

- Time required to recover from the injury
- Degree of available transitional jobs
- Degree of legal involvement
- Changes in the interpretations and processes of the administrative bodies that oversee workers' compensation claims

- Future wage inflation for states that index benefits
- Changes in the administrative policies of second injury funds

Medical risk factors

- Changes in the cost of medical treatments (including prescription drugs) and underlying fee schedules (“inflation”)
- Frequency of visits to health providers
- Number of medical procedures given during visits to health providers
- Types of health providers used
- Type of medical treatments received
- Use of preferred provider networks and other medical cost containment practices
- Availability of new medical processes and equipment
- Changes in the use of pharmaceutical drugs, including drugs for pain management
- Degree of patient responsiveness to treatment

General workers' compensation risk factors
- Frequency of reopening claims previously closed
- Mortality trends of injured workers with lifetime benefits and medical treatment
- Changes in statutory benefits
- The impact, if any, of potential future changes to the Affordable Care Act

Workers' compensation book of business risk factors
- Product mix
- Injury type mix
- Changes in underwriting standards

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for workers' compensation, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.3% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line over the last nine years has varied from -4% to 0% (averaging -2%) for the Company, and from -4% to 1% (averaging -1%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Workers' compensation reserves represent approximately 38% of the Company's total claims and claim adjustment expense reserves.

The Company's change in reserve estimate for this product line was -4% for 2018, -3% for 2017 and -2% for 2016. The 2018 change primarily reflected better than expected loss experience for accident years 2017 and prior. The 2017 change primarily reflected better than expected loss experience for accident years 2016 and prior. The 2016 change primarily reflected better than expected loss experience for accident years 2006 and prior as well as accident years 2009, 2013 and 2015.

Fidelity and Surety
Fidelity is generally considered a short tail coverage. It takes a relatively short period of time to finalize and settle most fidelity claims. The volatility of fidelity reserves is generally related to the type of business of the insured, the size and complexity of the insured's business operations, amount of policy limit and attachment point of coverage. The uncertainty surrounding reserves for small, commercial insureds is typically less than the uncertainty for large commercial or financial institutions. The high frequency, low severity nature of small commercial fidelity losses provides for stability in loss estimates, whereas the low frequency, high severity nature of losses for large insureds results in a wider range of ultimate loss outcomes. Actuarial techniques that rely on a stable pattern of loss development are generally not applicable to low frequency, high severity claims.

Surety has certain components that are generally considered short tail coverages with short reporting lags, although large individual construction and commercial surety contracts can result in a long settlement tail, based on the length and complexity of the construction project(s) or commercial transaction being insured. The frequency of losses in surety generally correlates with economic cycles as the primary cause of surety loss is the inability of an insured to fulfill its contractual obligations. The Company actively seeks to mitigate this exposure to loss through disciplined risk selection, adherence to underwriting standards and ongoing monitoring of contractor progress in significant construction projects. The volatility of surety losses is generally related to the type of business performed by the insured, the type of bonded obligation, the amount of limit exposed to loss and the amount of assets available to the insurer to mitigate losses, such as unbilled contract funds, collateral, first and third party indemnity, and other security positions of an insured's assets. Certain classes of surety claims are very high severity, low frequency in nature. These

can include large construction contractors involved with one or multiple large, complex projects as well as certain large commercial surety exposures. Other claim factors affecting reserve variability of surety include litigation related to amounts owed by and due the insured (e.g., salvage and subrogation efforts) and the results of financial restructuring of an insured.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required fidelity and surety reserves (beyond those included in the general discussion section) include:

Fidelity risk factors
- Type of business of insured
- Policy limit and attachment points
- Third-party claims
- Coverage litigation
- Complexity of claims
- Growth in insureds' operations

Surety risk factors
- Economic trends, including the general level of construction activity
- Concentration of reserves in a relatively few large claims
- Type of business insured
- Type of obligation insured
- Cumulative limits of liability for insured
- Assets available to mitigate loss
- Defective workmanship/latent defects
- Financial strategy of insured
- Changes in statutory obligations
- Geographic spread of business

Fidelity and Surety book of business risk factors
- Changes in policy provisions (e.g., deductibles, limits, endorsements)
- Changes in underwriting standards

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for fidelity and surety, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.3% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line over the last nine years has varied from -36% to -6% (averaging -19%) for the Company, and from -17% to -2% (averaging -10%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Fidelity and surety reserves represent approximately 1% of the Company's total claims and claim adjustment expense reserves.

In general, developments on single large claims (both adverse and favorable) are a primary source of changes in reserve estimates for this product line.

The Company's change in reserve estimate for this product line was -10% for 2018, -10% for 2017 and -36% for 2016. The 2018 change primarily reflected better than expected loss experience in the fidelity and surety product line for accident years 2015 and 2016. The 2017 change primarily reflected better than expected loss experience in the fidelity and surety product line for accident years 2014 and 2015. The 2016 change primarily reflected better than expected loss experience in the fidelity and surety product line for accident years 2009 through 2015.

Personal Automobile
Personal automobile includes both short and long tail coverages. The payments that are made quickly typically pertain to auto physical damage (property) claims and property damage (liability) claims. The payments that take longer to finalize and are more difficult to estimate relate to bodily injury claims. Reporting lags are relatively short and the claim settlement process for personal automobile liability generally is the least complex of the liability products. It is generally viewed as a high frequency, low to moderate severity product line. Overall, the claim liabilities for this line create a moderate estimation risk.

Personal automobile reserves are typically analyzed in five components: bodily injury liability, property damage liability, no-fault losses, collision claims and comprehensive claims. These last two components have minimum

reserve risk and fast payouts and, accordingly, separate factors are not presented.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required personal automobile reserves (beyond those included in the general reserve discussion section) include:

Bodily injury, property damage liability and no-fault risk factors

- Trends in jury awards
- Changes in the underlying court system and its philosophy
- Changes in case law
- Litigation trends
- Increases in attorney involvement in, or impact on, claims
- Frequency of claims with payment capped by policy limits
- Change in average severity of accidents, or proportion of severe accidents

- Changes in auto safety technology
- Frequency and severity of claims involving distracted drivers and pedestrians
- Subrogation opportunities
- Frequency of visits to health providers
- Number of medical procedures given during visits to health providers
- Types of health providers used
- Types of medical treatments received
- Changes in cost of medical treatments
- Effectiveness of no-fault laws
- Degree of patient responsiveness to treatment
- Changes in claim handling philosophies

Personal automobile book of business risk factors
- Changes in policy provisions (e.g., deductibles, policy limits, endorsements, etc.)
- Changes in underwriting standards
- Changes in the use of credit data for rating and underwriting

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for personal automobile, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.1% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line over the last nine years has varied from -4% to 3% (averaging 0%) for the Company, and from -3% to 2% (averaging -1%) for the industry overall. The Company's year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Personal automobile reserves represent approximately 7% of the Company's total claims and claim adjustment expense reserves.

The Company's change in reserve estimate for this product line was -2% for 2018, 0% for 2017 and 3% for 2016. The 2018 change primarily reflected better than expected loss experience for liability coverages for accident years 2015 through 2017. The 2016 change primarily reflected higher than expected loss experience for liability coverages for accident year 2015.

Homeowners and Personal Lines Other
Homeowners is generally considered a short tail coverage. Most payments are related to the property portion of the policy, where the claim reporting and settlement process is generally restricted to the insured and the insurer. Claims on property coverage are typically reported soon after the actual damage occurs, although delays of several months are not unusual. The resulting settlement process is typically fairly short term, although exceptions do exist.

The liability portion of the homeowners policy generates claims which take longer to pay due to the involvement of litigation and negotiation, but with generally small reporting lags. Personal Lines Other products include personal umbrella policies, among others. See "general liability reserving risk factors," discussed above, for reserving risk factors related to umbrella coverages.

Overall, the line is generally high frequency, low to moderate severity (except for catastrophes), with simple to moderate claim complexity.

Homeowners reserves are typically analyzed in two components: non-catastrophe related losses and catastrophe loss payments.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required homeowners reserves (beyond those included in the general discussion section) include:

Non-catastrophe risk factors

- Salvage opportunities
- Amount of time to return property to residential use
- Changes in weather patterns
- Local building codes
- Construction and building material costs
- Litigation trends
- Trends in jury awards
- Court interpretation of policy provisions (such as occurrence definition, or wind versus flooding)

- Lags in reporting claims (e.g., winter damage to summer homes, hidden damage after an earthquake, hail damage to roofs and/or equipment on roofs)
- Court or legislative changes to the statute of limitations

Catastrophe risk factors
- Physical concentration of policyholders
- Availability and cost of local contractors
- Local building codes
- Quality of construction of damaged homes
- Amount of time to return property to residential use
- For the more severe catastrophic events, “demand surge” inflation, which refers to significant short-term increases in building material and labor costs due to a sharp increase in demand for those materials and services

Homeowners book of business risk factors
- Policy provisions mix (e.g., deductibles, policy limits, endorsements, etc.)
- Degree of concentration of policyholders
- Changes in underwriting standards
- Changes in the use of credit data for rating and underwriting

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for homeowners and personal lines other, a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.1% increase (decrease) in claims and claim adjustment expense reserves.

Historically, the one-year change in the reserve estimate for this product line (excluding the umbrella line of business, which for statutory reporting purposes is included with the general liability line of business) over the last nine years has varied from -17% to 3% (averaging -7%) for the Company, and from -7% to -1% (averaging -4%) for the industry overall. The Company’s year-to-year changes are driven by, and are based on, observed events during the year. The Company believes that its range of historical outcomes is illustrative of reasonably possible one-year changes in reserve estimates for this product line. Homeowners and personal lines other reserves represent approximately 4% of the Company’s total claims and claim adjustment expense reserves.

This line combines both liability and property coverages; however, the majority of the reserves relate to property. While property is considered a short tail coverage, the one year change for property can be more volatile than that for the longer tail product lines. This is due to the fact that the majority of the reserve for property relates to the most recent accident year, which is subject to the most uncertainty for all product lines. This recent accident year uncertainty is relevant to property because of weather related events which tend to be concentrated in the second half of the year, and generally are not completely resolved until the following year. Reserve estimates associated with major catastrophes, including California wildfires in recent years, may take even longer to resolve.

The Company’s change in reserve estimate for this product line (excluding the umbrella line of business) was -2% for 2018, 1% for 2017 and 3% for 2016. The 2018 change primarily reflected better than expected loss experience for liability coverages for accident years 2014 through 2016, largely offset by higher than expected loss experience for catastrophe losses for accident year 2017. The 2017 change primarily reflected modestly higher than expected loss experience for liability coverages for accident years 2014 and 2015. The 2016 change primarily reflected modestly higher than expected loss experience for liability coverages for accident years 2012 through 2014.

International and Other

International and other includes products written by the Company's international operations, as well as all other products not explicitly discussed above. The principal component of "other" claim reserves is assumed reinsurance written on an excess-of-loss basis, which may include reinsurance of non-U.S. exposures, and is runoff business.

International and other claim liabilities result from a mix of coverages, currencies and jurisdictions/countries. The common characteristic is the need to customize the analysis to the individual component, and the inability to rely on data characterizations and reporting requirements in the U.S. statutory reporting framework.

Due to changes in the business mix for this product line over time, the recently incurred claim liabilities are relatively shorter tail (due to both the products and the jurisdictions involved, e.g., Canada, the Republic of Ireland and the United Kingdom), while the older liabilities include some from runoff operations that are extremely long tail (e.g., U.S. excess liabilities reinsured through the

London market, and several underwriting pools in runoff). The speed of claim reporting and claim settlement is a function of the specific coverage provided, the jurisdiction, the distribution system (e.g., underwriting pool versus direct) and the proximity of the insurance sale to the insured hazard (e.g., insured and insurer located in different countries). In particular, liabilities arising from the underwriting pools in runoff may result in significant reporting lags, settlement lags and claim complexity, due to the need to coordinate with other pool members or co-insurers through a broker or lead-insurer for claim settlement purposes.

International reserves are generally analyzed by country and general coverage category (e.g., General Liability in Canada, Commercial Property in the United Kingdom, etc.). The business is also generally split by direct versus assumed reinsurance for a given coverage. Where the underlying insured hazard is outside the United States, the underlying coverages are generally similar to those described under the Homeowners, Personal Automobile, Commercial Automobile, General Liability, Commercial Property and Surety discussions above, taking into account differences in the legal environment and differences in terms and conditions. However, statutory coverage differences exist amongst various jurisdictions. For example, in some jurisdictions there are no aggregate policy limits on certain liability coverages.

Other reserves, primarily assumed reinsurance in runoff, are generally analyzed by program/pool, treaty type, and general coverage category (e.g., General Liability — excess of loss reinsurance). Excess exposure requires the insured to “prove” not only claims under the policy, but also the prior payment of claims reaching up to the excess policy’s attachment point.

Examples of common risk factors, or perceptions thereof, that could change and, thus, affect the required International and other reserves (beyond those included in the general discussion section, and in the Personal Automobile, Homeowners, General Liability, Commercial Property, Commercial Automobile and Surety discussions above) include:

International and other risk factors
- Changes in claim handling procedures, including those of the primary carriers
- Changes in policy provisions or court interpretation of such provision
- Economic trends
- New theories of liability
- Trends in jury awards
- Changes in the propensity to sue
- Changes in statutes of limitations
- Changes in the underlying court system
- Distortions from losses resulting from large single accounts or single issues
- Changes in tort law
- Changes in claim adjuster office structure (causing distortions in the data)
- Changes in foreign currency exchange rates

International and other book of business risk factors
- Changes in policy provisions (e.g., deductibles, policy limits, endorsements, “claims-made” language)
- Changes in underwriting standards
- Product mix (e.g., size of account, industries insured, jurisdiction mix)

Unanticipated changes in risk factors can affect reserves. As an indicator of the causal effect that a change in one or more risk factors could have on reserves for International and other (excluding asbestos and environmental), a 1% increase (decrease) in incremental paid loss development for each future calendar year could result in a 1.3% increase

(decrease) in claims and claim adjustment expense reserves. International and other reserves (excluding asbestos and environmental) represent approximately 7% of the Company's total claims and claim adjustment expense reserves.

International and other represents a combination of different product lines, some of which are in runoff. Comparative historical information is not available for international product lines as insurers domiciled outside of the United States do not file U.S. statutory reports. Comparative historical information on runoff business is not indicative of reasonably possible one-year changes in the reserve estimate for this mix of runoff business. Accordingly, the Company has not included comparative analyses for International and other.

Reinsurance Recoverables

Amounts recoverable from reinsurers are estimated in a manner consistent with the associated claim liability. The Company evaluates and monitors the financial condition of its reinsurers under voluntary reinsurance arrangements to minimize its exposure to significant losses from reinsurer insolvencies. In addition, in the ordinary course of business, the Company becomes involved

in coverage disputes with its reinsurers. Some of these disputes could result in lawsuits and arbitrations brought by or against the reinsurers to determine the Company's rights and obligations under the various reinsurance agreements. The Company employs dedicated specialists and comprehensive strategies to manage reinsurance collections and disputes.

The Company has entered into a reinsurance contract in connection with a catastrophe bond issued by Long Point Re III. This contract meets the requirements to be accounted for as reinsurance in accordance with guidance for accounting for reinsurance contracts. The catastrophe bond is described in more detail in "Item 1-Business-Catastrophe Reinsurance."

The Company reports its reinsurance recoverables net of an allowance for estimated uncollectible reinsurance recoverables. The allowance is based upon the Company's ongoing review of amounts outstanding, length of collection periods, changes in reinsurer credit standing, disputes, applicable coverage defenses and other relevant factors. Accordingly, the establishment of reinsurance recoverables and the related allowance for uncollectible reinsurance recoverables is also an inherently uncertain process involving estimates. From time to time, as a result of the long-tailed nature of the underlying liabilities, coverage complexities and potential for disputes, the Company considers the commutation of reinsurance contracts. Changes in estimated reinsurance recoverables and commutation activity could result in additional income statement charges.

Recoverables attributable to structured settlements relate primarily to personal injury claims, of which workers' compensation claims comprise a significant portion, for which the Company has purchased annuities and remains contingently liable in the event of a default by the companies issuing the annuities. Recoverables attributable to mandatory pools and associations relate primarily to workers' compensation service business. These recoverables are supported by the participating insurance companies' obligation to pay a pro rata share based on each company's voluntary market share of written premium in each state in which it is a pool participant. In the event a member of a mandatory pool or association defaults on its share of the pool's or association's obligations, the other members' share of such obligation increases proportionally.

Investment Valuation and Impairments

Valuation of Investments Reported at Fair Value in Financial Statements

The Company's estimates of fair value for financial assets and financial liabilities are based on the framework established in the fair value accounting guidance. The framework is based on the inputs used in valuation, gives the highest priority to quoted prices in active markets and requires that observable inputs be used in the valuations when available.

The fair value of a financial instrument is the estimated amount at which the instrument could be exchanged in an orderly transaction between knowledgeable, unrelated, willing parties, i.e., not in a forced transaction. The estimated fair value of a financial instrument may differ from the amount that could be realized if the security was sold in an immediate sale, e.g., a forced transaction. Additionally, the valuation of investments is more subjective when markets are less liquid due to the lack of market based inputs, which may increase the potential that the estimated fair value of an investment is not reflective of the price at which an actual transaction would occur.

See note 4 of notes to the consolidated financial statements for a further discussion of the determination of fair value of investments.

Investment Impairments

See note 1 of notes to the consolidated financial statements for a discussion of investment impairments.

Due to the subjective nature of the Company's analysis and estimates of future cash flows, along with the judgment that must be applied in the analysis, it is possible that the Company could reach a different conclusion whether or not to impair a security if it had access to additional information about the issuer. Additionally, it is possible that the issuer's actual ability to meet contractual obligations may be different than what the Company determined during its analysis, which may lead to a different impairment conclusion in future periods.

Goodwill and Other Intangible Assets Impairments

See note 1 of notes to the consolidated financial statements for a discussion of impairments of goodwill and other intangible assets.

OTHER UNCERTAINTIES

For a discussion of other risks and uncertainties that could impact the Company's results of operations or financial position, see note 16 of notes to the consolidated financial statements and "Item 1A—Risk Factors."

FORWARD-LOOKING STATEMENTS

This report contains, and management may make, certain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, may be forward-looking statements. Words such as “may,” “will,” “should,” “likely,” “anticipates,” “expects,” “intends,” “plans,” “pro “believes,” “estimates” and similar expressions are used to identify these forward-looking statements. These statements include, among other things, the Company’s statements about:

- the Company’s outlook and its future results of operations and financial condition (including, among other things, anticipated premium volume, premium rates, renewal premium changes, underwriting margins and underlying underwriting margins, net and core income, investment income and performance, loss costs, return on equity, core return on equity and expected current returns, and combined ratios and underlying combined ratios);
- share repurchase plans;
- future pension plan contributions;
- the sufficiency of the Company’s asbestos and other reserves;
- the impact of emerging claims issues as well as other insurance and non-insurance litigation;
- the cost and availability of reinsurance coverage;
- catastrophe losses;
- the impact of investment (including changes in interest rates), economic (including inflation, recent changes in tax law, rapid changes in commodity prices and fluctuations in foreign currency exchange rates) and underwriting market conditions;
- strategic and operational initiatives to improve profitability and competitiveness;
- the Company's competitive advantages;
- new product offerings;
- the impact of new or potential regulations imposed or to be imposed by the United States or other nations, including tariffs or other barriers to international trade; and
- the impact of a government shutdown.

The Company cautions investors that such statements are subject to risks and uncertainties, many of which are difficult to predict and generally beyond the Company’s control, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements.

For a discussion of some of the factors that could cause actual results to differ, see “Item 1A-Risk Factors” and “Item 7-Management's Discussion and Analysis of Financial Condition and Results of Operations.”

The Company’s forward-looking statements speak only as of the date of this report or as of the date they are made, and the Company undertakes no obligation to update its forward-looking statements.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

MARKET RISK

Market risk is the risk of loss arising from adverse changes in market rates and prices, such as interest rates (inclusive of credit spreads), foreign currency exchange rates and other relevant market rate or price changes. Market risk is directly influenced by the volatility and liquidity in the markets in which the related underlying assets are traded. The following is a discussion of the Company's primary market risk exposures and how those exposures are managed as of December 31, 2018. The Company's market risk sensitive instruments, including derivatives, are primarily entered into for purposes other than trading.

The carrying value of the Company's investment portfolio at December 31, 2018 and 2017 was $72.28 billion and $72.50 billion, respectively, of which 88% and 86% was invested in fixed maturity securities, respectively. At December 31, 2018 and 2017, approximately 6.7% and 7.3%, respectively, of the Company's invested assets were

denominated in foreign currencies. The Company's exposure to equity price risk is not significant. The Company has no direct commodity risk and is not a party to any credit default swaps.

The primary market risks to the investment portfolio are interest rate risk and credit risk associated with investments in fixed maturity securities. The portfolio duration is primarily managed through cash market transactions and treasury futures transactions. For additional information regarding the Company’s investments, see notes 3 and 4 of notes to the consolidated financial statements

as well as the “Investment Portfolio” and “Outlook” sections of “Item 7—Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

The primary market risk for all of the Company’s debt is interest rate risk at the time of refinancing. The Company monitors the interest rate environment and evaluates refinancing opportunities as maturity dates approach. For additional information regarding the Company’s debt, see note 8 of notes to the consolidated financial statements as well as the “Liquidity and Capital Resources” section of “Item 7—Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

The Company’s foreign exchange market risk exposure is concentrated in the Company’s invested assets, insurance reserves and shareholders’ equity denominated in foreign currencies. Cash flows from the Company’s foreign operations are the primary source of funds for the purchase of investments denominated in foreign currencies. The Company purchases these investments primarily to fund insurance reserves and other liabilities denominated in the same currency, effectively reducing its foreign currency exchange rate exposure. Invested assets denominated in the Canadian dollar comprised approximately 4.1% and 4.4% of the total invested assets at December 31, 2018 and 2017, respectively. Invested assets denominated in the British Pound Sterling comprised approximately 1.9% and 2.0% of total invested assets at December 31, 2018 and 2017, respectively. Invested assets denominated in other currencies at December 31, 2018 and 2017 were not material.

There were no other significant changes in the Company's primary market risk exposures or in how those exposures were managed for the year ended December 31, 2018 compared to the year ended December 31, 2017. The Company does not currently anticipate significant changes in its primary market risk exposures or in how those exposures are managed in future reporting periods based upon what is known or expected to be in effect in future reporting periods.

SENSITIVITY ANALYSIS

Sensitivity analysis is defined as the measurement of potential loss in future earnings, fair values or cash flows of market sensitive instruments resulting from one or more selected hypothetical changes in interest rates and other market rates or prices over a selected period of time. In the Company’s sensitivity analysis model, a hypothetical change in market rates is selected that is expected to reflect reasonably possible near-term changes in those rates. “Near-term” means a period of time going forward up to one year from the date of the consolidated financial statements. Actual results may differ from the hypothetical change in market rates assumed in this disclosure, especially since this sensitivity analysis does not reflect the results of any actions that would be taken by the Company to mitigate such hypothetical losses in fair value.

Interest Rate Risk

In this sensitivity analysis model, the Company uses fair values to measure its potential loss. The sensitivity analysis model includes the following financial instruments entered into for purposes other than trading: fixed maturities, non-redeemable preferred stocks, mortgage loans, short-term securities, debt and derivative financial instruments. The primary market risk to the Company's market sensitive instruments is interest rate risk (inclusive of credit spreads). The sensitivity analysis model uses various basis point changes in interest rates to measure the hypothetical change in fair value of financial instruments included in the model.

For invested assets with primary exposure to interest rate risk, estimates of portfolio duration and convexity are used to model the loss of fair value that would be expected to result from a parallel increase in interest rates. Durations on invested assets are adjusted for call, put and interest rate reset features. Durations on tax-exempt securities are adjusted for the fact that the yields on such securities do not normally move in lockstep with changes in the U.S. Treasury curve. Fixed maturity portfolio durations are calculated on a market value weighted basis, including accrued interest, using holdings as of December 31, 2018 and 2017.

For debt, the change in fair value is determined by calculating hypothetical December 31, 2018 and 2017 ending prices based on yields adjusted to reflect a 100 basis point change, comparing such hypothetical ending prices to

actual ending prices, and multiplying the difference by the par or securities outstanding.

The sensitivity analysis model used by the Company produces a loss in fair value of market sensitive instruments of approximately $2.31 billion and $2.08 billion based on a 100 basis point increase in interest rates at December 31, 2018 and 2017, respectively.

The loss estimates do not take into account the impact of possible interventions that the Company might reasonably undertake in order to mitigate or avoid losses that would result from emerging interest rate trends. In addition, the loss value only reflects the impact of an interest rate increase on the fair value of the Company's financial instruments.

Table of Contents

Foreign Currency Exchange Rate Risk

The Company uses fair values of investment securities to measure its potential loss from foreign denominated investments. A hypothetical 10% reduction in value of foreign denominated investments is used to estimate the impact on the market value of the foreign denominated holdings. The Company's analysis indicates that a hypothetical 10% reduction in the value of foreign denominated investments would be expected to produce a loss in fair value of approximately $487 million and $528 million at December 31, 2018 and 2017, respectively.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND SCHEDULES

	Page
Report of Independent Registered Public Accounting Firm	124
Consolidated Financial Statements:	
Statement of Income for the years ended December 31, 2018, 2017 and 2016	125
Statement of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016	126
Balance Sheet at December 31, 2018 and 2017	127
Statement of Changes in Shareholders' Equity for the years ended December 31, 2018, 2017 and 2016	128
Statement of Cash Flows for the years ended December 31, 2018, 2017 and 2016	129
Notes to Consolidated Financial Statements	130
Schedules:	
Schedule II - Condensed Financial Information of Registrant (Parent Company Only)	230
Schedule III - Supplementary Insurance Information	235
Schedule V - Valuation and Qualifying Accounts	236
Schedule VI - Supplementary Information Concerning Property-Casualty Insurance Operations	237

Table of Contents

Report of Independent Registered Public Accounting Firm
To the Shareholders and Board of Directors
The Travelers Companies, Inc.:
Opinion on the Consolidated Financial Statements
We have audited the accompanying consolidated balance sheet of The Travelers Companies, Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the years in the three year period ended December 31, 2018, and the related notes and financial statement schedules as listed in the accompanying index to consolidated financial statements and schedules (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three year 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 (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 14, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.
Basis for Opinion
These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated 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 consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP
KPMG LLP
We have served as the Company's auditor since 1994.
New York, New York
February 14, 2019

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF INCOME
(in millions, except per share amounts)

For the year ended December 31,	2018	2017	2016
Revenues			
Premiums	$27,059	$25,683	$24,534
Net investment income	2,474	2,397	2,302
Fee income	432	447	458
Net realized investment gains [1]	114	216	68
Other revenues	203	159	263
Total revenues	30,282	28,902	27,625
Claims and expenses			
Claims and claim adjustment expenses	18,291	17,467	15,070
Amortization of deferred acquisition costs	4,381	4,166	3,985
General and administrative expenses	4,297	4,170	4,154
Interest expense	352	369	363
Total claims and expenses	27,321	26,172	23,572
Income before income taxes	2,961	2,730	4,053
Income tax expense	438	674	1,039
Net income	$2,523	$2,056	$3,014
Net income per share			
Basic	$9.37	$7.39	$10.39
Diluted	$9.28	$7.33	$10.28
Weighted average number of common shares outstanding			
Basic	267.4	276.0	288.1
Diluted	269.8	278.6	291.0

(1) Total other-than-temporary impairment (OTTI) losses were $(1) million, $(13) million and $(40) million for the years ended December 31, 2018, 2017 and 2016, respectively. Of total OTTI, credit losses of $(1) million, $(14) million and $(29) million for the years ended December 31, 2018, 2017 and 2016, respectively, were recognized in net realized investment gains. In addition, unrealized gains (losses) from other changes in total OTTI of $0 million, $1 million and $(11) million for the years ended December 31, 2018, 2017 and 2016, respectively, were recognized in other comprehensive income (loss) as part of changes in net unrealized gains (losses) on investment securities having credit losses recognized in the consolidated statement of income.

The accompanying notes are an integral part of the consolidated financial statements.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
(in millions)

For the year ended December 31,	2018	2017	2016
Net income	$2,523	$2,056	$3,014
Other comprehensive income (loss):			
Changes in net unrealized gains (losses) on investment securities:			
Having no credit losses recognized in the consolidated statement of income	(1,489)	294	(883)
Having credit losses recognized in the consolidated statement of income	(27)	8	21
Net changes in benefit plan assets and obligations	(56)	29	16
Net changes in unrealized foreign currency translation	(247)	191	(41)
Other comprehensive income (loss) before income taxes	(1,819)	522	(887)
Income tax expense (benefit)	(349)	110	(289)
Other comprehensive income (loss), net of taxes	(1,470)	412	(598)
Comprehensive income	$1,053	$2,468	$2,416

The accompanying notes are an integral part of the consolidated financial statements.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
(in millions)

At December 31,	2018	2017
Assets		
Fixed maturities, available for sale, at fair value (amortized cost $63,601 and $61,316)	$63,464	$62,694
Equity securities, at fair value (cost $382 and $440)	368	453
Real estate investments	904	932
Short-term securities	3,985	4,895
Other investments	3,557	3,528
Total investments	72,278	72,502
Cash	373	344
Investment income accrued	624	606
Premiums receivable	7,506	7,144
Reinsurance recoverables	8,370	8,309
Ceded unearned premiums	578	551
Deferred acquisition costs	2,120	2,025
Deferred taxes	445	70
Contractholder receivables	4,785	4,775
Goodwill	3,937	3,951
Other intangible assets	345	342
Other assets	2,872	2,864
Total assets	$104,233	$103,483
Liabilities		
Claims and claim adjustment expense reserves	$50,668	$49,650
Unearned premium reserves	13,555	12,915
Contractholder payables	4,785	4,775
Payables for reinsurance premiums	289	274
Debt	6,564	6,571
Other liabilities	5,478	5,567
Total liabilities	81,339	79,752
Shareholders' equity		
Common stock (1,750.0 shares authorized; 263.7 and 271.5 shares issued, 263.6 and 271.4 shares outstanding)	23,144	22,886
Retained earnings	35,204	33,462
Accumulated other comprehensive loss	(1,859)	(343)
Treasury stock, at cost (510.9 and 500.9 shares)	(33,595)	(32,274)
Total shareholders' equity	22,894	23,731
Total liabilities and shareholders' equity	$104,233	$103,483

The accompanying notes are an integral part of the consolidated financial statements.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY
(in millions)

For the year ended December 31,	2018	2017	2016
Common stock			
Balance, beginning of year	$22,886	$22,614	$22,172
Employee share-based compensation	108	136	287
Compensation amortization under share-based plans and other changes	150	136	155
Balance, end of year	23,144	22,886	22,614
Retained earnings			
Balance, beginning of year	33,462	32,196	29,945
Cumulative effect of adoption of updated accounting guidance for equity financial instruments at January 1, 2018	22	—	—
Reclassification of certain tax effects from accumulated other comprehensive income at January 1, 2018	24	—	—
Net income	2,523	2,056	3,014
Dividends	(818)	(789)	(762)
Other	(9)	(1)	(1)
Balance, end of year	35,204	33,462	32,196
Accumulated other comprehensive income (loss), net of tax			
Balance, beginning of year	(343)	(755)	(157)
Cumulative effect of adoption of updated accounting guidance for equity financial instruments at January 1, 2018	(22)	—	—
Reclassification of certain tax effects from accumulated other comprehensive income at January 1, 2018	(24)	—	—
Other comprehensive income (loss)	(1,470)	412	(598)
Balance, end of year	(1,859)	(343)	(755)
Treasury stock, at cost			
Balance, beginning of year	(32,274)	(30,834)	(28,362)
Treasury stock acquired — share repurchase authorization	(1,270)	(1,378)	(2,400)
Net shares acquired related to employee share-based compensation plans	(51)	(62)	(72)
Balance, end of year	(33,595)	(32,274)	(30,834)
Total shareholders' equity	$22,894	$23,731	$23,221
Common shares outstanding			
Balance, beginning of year	271.4	279.6	295.9
Treasury stock acquired — share repurchase authorization	(9.6)	(10.9)	(21.3)
Net shares issued under employee share-based compensation plans	1.8	2.7	5.0
Balance, end of year	263.6	271.4	279.6

The accompanying notes are an integral part of the consolidated financial statements.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
(in millions)

For the year ended December 31,	2018	2017	2016
Cash flows from operating activities			
Net income	$2,523	$2,056	$3,014
Adjustments to reconcile net income to net cash provided by operating activities:			
Net realized investment gains	(114)	(216)	(68)
Depreciation and amortization	803	813	826
Deferred federal income tax expense (benefit)	(13)	337	110
Amortization of deferred acquisition costs	4,381	4,166	3,985
Equity in income from other investments	(365)	(397)	(232)
Premiums receivable	(393)	(394)	(286)
Reinsurance recoverables	(100)	16	610
Deferred acquisition costs	(4,488)	(4,257)	(4,061)
Claims and claim adjustment expense reserves	1,246	1,460	(257)
Unearned premium reserves	710	521	372
Other	190	43	456
Net cash provided by operating activities	4,380	4,148	4,469
Cash flows from investing activities			
Proceeds from maturities of fixed maturities	7,086	8,750	8,975
Proceeds from sales of investments:			
Fixed maturities	3,546	1,854	1,417
Equity securities	178	765	92
Real estate investments	74	23	69
Other investments	511	468	566
Purchases of investments:			
Fixed maturities	(13,526)	(12,250)	(11,609)
Equity securities	(117)	(459)	(51)
Real estate investments	(74)	(59)	(48)
Other investments	(537)	(541)	(580)
Net sales (purchases) of short-term securities	908	(26)	(199)
Securities transactions in the course of settlement	(56)	(47)	(21)
Acquisitions, net of cash acquired	(4)	(439)	—
Other	(318)	(241)	(338)
Net cash used in investing activities	(2,329)	(2,202)	(1,727)
Cash flows from financing activities			
Treasury stock acquired — share repurchase authorization	(1,270)	(1,378)	(2,400)
Treasury stock acquired — net employee share-based compensation	(51)	(62)	(72)
Dividends paid to shareholders	(814)	(785)	(757)
Payment of debt	(600)	(657)	(400)
Issuance of debt	591	789	491
Issuance of common stock-employee share options	132	173	332
Net cash used in financing activities	(2,012)	(1,920)	(2,806)
Effect of exchange rate changes on cash	(10)	11	(9)
Net increase (decrease) in cash	29	37	(73)
Cash at beginning of year	344	307	380
Cash at end of year	$373	$344	$307
Supplemental disclosure of cash flow information			

Income taxes paid	$408	$514	$892
Interest paid	$347	$367	$358

The accompanying notes are an integral part of the consolidated financial statements.

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The consolidated financial statements include the accounts of The Travelers Companies, Inc. (together with its subsidiaries, the Company). The preparation of the consolidated financial statements in conformity with U.S. generally accepted accounting principles (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and claims and expenses during the reporting period. Actual results could differ from those estimates. Certain reclassifications have been made to the 2017 and 2016 financial statements to conform to the 2018 presentation. All material intercompany transactions and balances have been eliminated.

On August 4, 2017, the Company completed its acquisition of all issued and outstanding shares of Simply Business Holdings Ltd (Simply Business), a leading provider of small business insurance policies primarily in the United Kingdom, for a purchase price of approximately $464 million, which included the repayment of debt and other obligations of Simply Business. In addition, the Company issued 95,953 shares of restricted common stock valued at approximately $12 million to certain employees of Simply Business who were equity holders of Simply Business. Subject to the satisfaction of certain conditions, 50% of the restricted stock will vest two years from the issuance date and the remainder will vest three years from the issuance date. The Company used a portion of the net proceeds from the issuance of senior notes in May 2017 (described in more detail in note 8) and internal resources to fund this transaction.

Adoption of Accounting Standards

Financial Instruments: Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the Financial Accounting Standards Board (FASB) issued updated guidance to address the recognition, measurement, presentation and disclosure of certain financial instruments. The updated guidance requires equity investments, except those accounted for under the equity method of accounting, that have readily determinable fair value to be measured at fair value with any changes in fair value recognized in net income. Equity securities that do not have readily determinable fair values may be measured at estimated fair value or cost less impairment, if any, adjusted for subsequent observable price changes, with changes in the carrying value recognized in net income. A qualitative assessment for impairment is required for equity investments without readily determinable fair values. The updated guidance also eliminates the requirement to disclose the method and significant assumptions used to estimate the fair value of financial instruments measured at amortized cost on the balance sheet. The updated guidance was effective for the quarter ended March 31, 2018. The adoption of this guidance resulted in the recognition of $22 million of net after-tax unrealized gains on equity investments as a cumulative effect adjustment that increased retained earnings as of January 1, 2018 and decreased accumulated other comprehensive income (AOCI) by the same amount. The Company elected to report changes in the fair value of equity investments in net realized investment gains (losses). At December 31, 2017, equity investments were classified as available-for-sale on the Company's balance sheet. However, upon adoption, the updated guidance eliminated the available-for-sale balance sheet classification for equity investments.

Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income

On February 14, 2018, the FASB issued updated guidance that allows a reclassification from AOCI to retained earnings of the stranded tax effects that occurred due to the enactment of the Tax Cuts and Jobs Act of 2017 (TCJA). The updated guidance is effective for reporting periods beginning after December 15, 2018 and is to be applied retrospectively to each period in which there are items impacted by the TCJA remaining in AOCI or at the beginning of the period of adoption. Early adoption is permitted. The Company adopted the updated guidance effective January

1, 2018 and elected to reclassify the income tax effects of the TCJA from AOCI to retained earnings as of January 1, 2018. This reclassification resulted in an increase in retained earnings of $24 million as of January 1, 2018 and a decrease in AOCI by the same amount.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Revenue from Contracts with Customers

In May 2014, the FASB issued updated guidance to clarify the principles for recognizing revenue. The updated guidance was effective for reporting periods beginning after December 15, 2017, and requires an entity to recognize revenue as performance obligations are met, in order to reflect the transfer of goods or services to customers in an amount that reflects the consideration the entity is entitled to receive for those goods or services. For the year ended December 31, 2018, approximately $171 million, or less than 1% of the Company's total revenues, were within the scope of this updated guidance and were generated from the services described below.

While insurance contracts are not within the scope of this updated guidance, the Company’s revenue related to certain services with no underlying insurance risk is subject to the updated guidance. These services include the following: (i) insurance-related services, such as risk management services, claims administration, loss control and risk management information services on behalf of non-insureds; (ii) servicing carrier fees for various residual market pools and associations; and (iii) administrative fees related to servicing third-party insurers’ obligations to participate in the Workers' Compensation Residual Market Plans in certain states. The revenues earned from these service contracts were not impacted by the adoption of the updated guidance. These revenues are earned as the Company completes its performance obligations, which primarily occurs on a pro rata basis over the contract service period and reported in fee income in the Company’s consolidated statement of income.

Commissions earned from on-line insurance brokerage services are also subject to this updated guidance and were also not impacted by the adoption of the updated guidance. Commissions are earned upon collection of the gross premium in accordance with the contracts and an accrual is made to recognize policy cancellations, either at the policyholder’s direction or for non-payment. Commissions are reported in other revenues in the Company's consolidated statement of income.

The Company does not capitalize the costs to obtain or fulfill the contracts for which revenues are reported in fee income and other revenues, and has not recognized any material impairment losses on the receivables related to these contracts during the twelve months ended December 31, 2018.

The Company adopted the updated guidance effective January 1, 2018. The adoption did not have an effect on the Company’s results of operations, financial position or liquidity.

Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments

In August 2016, the FASB issued updated guidance on the classification of cash flows related to certain activities in the statement of cash flows to reduce diversity in practice. The updated guidance was effective for reporting periods beginning after December 15, 2017 and was applied retrospectively to all periods presented. Under the new guidance, distributions received on equity method investments that are considered to be a return on investment are reported as cash flows from operating activities. These distributions were previously reported as cash flows from investing activities. The adoption of this guidance did not have an effect on the Company’s results of operations, financial position or liquidity.

Other Accounting Standards Not Yet Adopted
Leases

In February 2016, the FASB issued updated guidance to require lessees to recognize a right-of-use asset and a lease liability for leases with terms of more than 12 months. The updated guidance retains the two classifications of a lease as either an operating or finance lease (previously referred to as a capital lease). Both lease classifications require the lessee to record the right-of-use asset and the lease liability based upon the present value of cash flows. Finance leases will reflect the financial arrangement by recognizing interest expense on the lease liability separately from the amortization expense of the right-of-use asset. Operating leases will recognize lease expense (with no separate recognition of interest expense) on a straight-line basis over the term of the lease. The accounting by lessors is not significantly changed by the updated guidance. The updated guidance requires expanded qualitative and quantitative disclosures, including additional information about the amounts recorded in the financial statements.

In July 2018, the FASB amended the updated guidance on leases that was issued in February 2016 and provided an additional transition method with which to adopt the updated guidance. Under the additional transition method, entities may elect to recognize a cumulative-effect adjustment to the opening balance of retained earnings in the year of adoption. Consequently, if this transition

method is elected, an entity's reporting for the comparative periods prior to adoption presented in the financial statements would continue to be in accordance with current lease guidance. The amendments also provide lessors with a practical expedient to combine nonlease components (e.g., a fee for common area maintenance when leasing office space) with the associated lease component rather than accounting for those components separately if certain criteria are met. The updated guidance requires entities to recognize a right-of-use asset and lease liability equal to the present value of lease payments for all leases other than those that are less than one year.

The updated guidance, as amended, is effective for reporting periods beginning after December 15, 2018. The Company plans to adopt the updated guidance effective January 1, 2019 using the additional transition method described above. The adoption of the updated guidance will result in the recognition of a right-of-use asset and a lease liability of the same amount, which will be less than 1% of total assets and total liabilities, and is not expected to have a material effect on the Company's results of operations, financial position or liquidity.

Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments

In June 2016, the FASB issued updated guidance for the accounting for credit losses for financial instruments. The updated guidance applies a new credit loss model (current expected credit losses or CECL) for determining credit-related impairments for financial instruments measured at amortized cost (e.g. reinsurance recoverables, including structured settlements that are recorded as part of reinsurance recoverables) and requires an entity to estimate the credit losses expected over the life of an exposure or pool of exposures. The estimate of expected credit losses should consider historical information, current information, as well as reasonable and supportable forecasts, including estimates of prepayments. The expected credit losses, and subsequent adjustments to such losses, will be recorded through an allowance account that is deducted from the amortized cost basis of the financial asset, with the net carrying value of the financial asset presented on the consolidated balance sheet at the amount expected to be collected.
The updated guidance also amends the current other-than-temporary impairment model for available-for-sale debt securities by requiring the recognition of impairments relating to credit losses through an allowance account and limits the amount of credit loss to the difference between a security's amortized cost basis and its fair value. In addition, the length of time a security has been in an unrealized loss position will no longer impact the determination of whether a credit loss exists.

The updated guidance is effective for reporting periods beginning after December 15, 2019. Early adoption is permitted for reporting periods beginning after December 15, 2018. Based on the financial instruments currently held by the Company, there would not be a material effect on the Company's results of operations, financial position or liquidity if the new guidance were able to be adopted in the current accounting period. The impact on the Company's results of operations, financial position or liquidity at the date of adoption of the updated guidance will be determined by the financial instruments held by the Company and the economic conditions at that time.

Intangibles - Goodwill and Other

In January 2017, the FASB issued updated guidance that eliminates the requirement to calculate the implied fair value of goodwill (i.e., Step 2 of the current goodwill impairment test) to measure a goodwill impairment charge. Instead, entities will record an impairment charge by comparing a reporting unit's fair value with its carrying amount and recognizing an impairment charge for the excess of the carrying amount over estimated fair value (i.e., Step 1 of current guidance). The implied fair value of goodwill is currently determined in Step 2 by deducting the fair value of all assets and liabilities of the reporting unit (determined in the same manner as a business combination) from the

reporting unit's fair value as determined in Step 1 (including any corporate-level assets or liabilities that were included in the determination of the carrying amount and fair value of the reporting unit in Step 1). The updated guidance requires an entity to perform its annual, or interim, impairment test by either: (1) an initial qualitative assessment of factors (such as changes in management, key personnel, strategy, key technology or customers) that may impact a reporting unit's fair value and lead to the determination that it is more likely than not that the reporting unit's fair value is less than its carrying value, including goodwill (consistent with current guidance), or (2) applying Step 1.

The updated guidance is effective for reporting periods beginning after December 15, 2019 and is to be applied prospectively. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The adoption of this guidance is not expected to have a material effect on the Company's results of operations, financial position or liquidity.

Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract

In August 2018, the FASB issued updated guidance to align the accounting for implementation costs incurred in a software hosting arrangement (i.e., a cloud computing arrangement) that is a service contract with the guidance for capitalizing implementation costs incurred to develop or obtain internal-use software. Accordingly, the updated guidance requires an entity to determine the stage of a project that the implementation activity relates to and the nature of the associated costs in order to determine whether those costs should be expensed as incurred or capitalized. The updated guidance also requires the entity to amortize the capitalized implementation costs as an expense over the term of the hosting arrangement.

The updated guidance is effective for reporting periods beginning after December 15, 2019. Early adoption is permitted. The Company plans to early adopt the updated guidance effective January 1, 2019 using the prospective method of adoption. The adoption of the updated guidance is not expected to have a material effect on the Company's results of operations, financial position or liquidity.

Accounting Policies
Investments
Fixed Maturities
Fixed maturities include bonds, notes and redeemable preferred stocks. Fixed maturities, including instruments subject to securities lending agreements, are classified as available for sale and reported at fair value, with unrealized investment gains and losses, net of income taxes, charged or credited directly to other comprehensive income.
Equity Securities
Equity securities, which include public common and non-redeemable preferred stocks, are reported at fair value with changes in fair value recognized in net income. Prior to January 1, 2018, equity securities were classified as available for sale and changes in their fair value were charged or credited directly to other comprehensive income.
Real Estate Investments
The Company's real estate investments include warehouses, office buildings and other commercial land and properties that are directly owned. Real estate is recorded on the purchase date at the purchase price, which generally represents fair value, and is supported by internal analysis or external appraisals that use discounted cash flow analyses and other acceptable valuation techniques. Real estate held for investment purposes is subsequently carried at cost less accumulated depreciation.
Buildings are depreciated on a straight-line basis over the shorter of the expected useful life of the building or 39 years. Real estate held for sale is carried at lower of cost or fair value, less estimated costs to sell.
Short-term Securities
Short-term securities have an original maturity of less than one year and are carried at amortized cost, which approximates fair value.
Other Investments
Investments in Private Equity Limited Partnerships, Hedge Funds and Real Estate Partnerships
The Company uses the equity method of accounting for investments in private equity limited partnerships, hedge funds and real estate partnerships. The partnerships and the hedge funds generally report investments on their balance sheet at fair value. The financial statements prepared by the investee are received by the Company on a lag basis, with the lag period generally dependent upon the type of underlying investments. The private equity and real estate partnerships provide financial information quarterly which is generally available to investors, including the Company, within three months following the date of the reporting period. The hedge funds provide financial information monthly, which is generally available to investors within one month following the

date of the reporting period. The Company regularly requests financial information from the partnerships prior to the receipt of the partnerships' financial statements and records any material information obtained from these requests in its consolidated financial statements.

Other

Also included in other investments are non-public common equities, preferred equities and derivatives. Non-public common equities and preferred equities are reported at fair value with changes in fair value recognized in net income. Prior to January 1, 2018, non-public common equities and preferred equities were reported at fair value with changes in fair value, net of taxes, charged or credited directly to other comprehensive income. The Company's derivative financial instruments are carried at fair value, with the changes in fair value reflected in the consolidated statement of income in net realized investment gains (losses). For a further discussion of the derivatives used by the Company, see note 3.

Net Investment Income

Investment income from fixed maturities is recognized based on the constant effective yield method which includes an adjustment for estimated principal pre-payments, if any. The effective yield used to determine amortization for fixed maturities subject to prepayment risk (e.g., asset-backed, loan-backed and structured securities) is recalculated and adjusted periodically based upon actual historical and/or projected future cash flows, which are obtained from a widely-accepted securities data provider. The adjustments to the yield for highly rated prepayable fixed maturities are accounted for using the retrospective method. The adjustments to the yield for non-highly rated prepayable fixed maturities are accounted for using the prospective method. Dividends on equity securities (including those with transfer restrictions) are recognized in income when declared. Rental income on real estate is recognized on a straight-line basis over the lease term. See the section titled: Real Estate in note 3 for further discussion. Investments in private equity limited partnerships, hedge funds, real estate partnerships and joint ventures are accounted for using the equity method of accounting, whereby the Company's share of the investee's earnings or losses in the fund is reported in net investment income.

Accrual of income is suspended on non-securitized fixed maturities that are in default, or on which it is likely that future payments will not be made as scheduled. Interest income on investments in default is recognized only when payments are received. Investments included in the consolidated balance sheet that were not income-producing for the preceding 12 months were not material.

For fixed maturities where the Company records an other-than-temporary impairment, a determination is made as to the cause of the impairment and whether the Company expects a recovery in the value. For fixed maturities where the Company expects a recovery in value, not necessarily to par, the constant effective yield method is utilized, and the investment is amortized to the expected recovery amount.

Investment Gains and Losses

Net realized investment gains and losses are included as a component of pre-tax revenues based upon specific identification of the investments sold on the trade date. Included in net realized investment gains (losses) are other-than-temporary impairment losses on invested assets other than those investments accounted for using the equity method of accounting as described in the "Investment Impairments" section that follows.

Investment Impairments

The Company conducts a periodic review to identify and evaluate invested assets having other-than-temporary impairments.

Other-Than-Temporary Impairments of Fixed Maturities

Some of the factors considered in identifying other-than-temporary impairments of fixed maturities include: (1) the extent to which the fair value has been less than amortized cost; (2) the financial condition, near-term and long-term prospects for the issuer, including the relevant industry conditions and trends, and implications of rating agency actions and offering prices; (3) the likelihood of the recoverability of principal and interest; (4) whether it is more likely than not that the Company will be required to sell the

investment prior to an anticipated recovery in value; and (5) the length of time and extent to which the fair value has been less than amortized cost.

For fixed maturity investments that the Company does not intend to sell or for which it is more likely than not that the Company would not be required to sell before an anticipated recovery in value, the Company separates the credit loss component of the impairment from the amount related to all other factors and reports the credit loss component in net realized investment gains (losses). The impairment related to all other factors is reported in other comprehensive income.

For fixed maturity investments the Company intends to sell or for which it is more likely than not that the Company will be required to sell before an anticipated recovery in value, the full amount of the impairment is included in net realized investment gains (losses).

Upon recognizing an other-than-temporary impairment, the new cost basis of the investment is the previous amortized cost basis less the other-than-temporary impairment recognized in net realized investment gains (losses). The new cost basis is not adjusted for any subsequent recoveries in fair value; however, for fixed maturity investments the difference between the new cost basis and the expected cash flows is accreted on a quarterly basis to net investment income over the remaining expected life of the investment.

Determination of Credit Loss — Fixed Maturities

The Company determines the credit loss component of fixed maturity investments by utilizing discounted cash flow modeling to determine the present value of the security and comparing the present value with the amortized cost of the security. If the amortized cost is greater than the present value of the expected cash flows, the difference is considered a credit loss and recognized in net realized investment gains (losses).

For non-structured fixed maturities (U.S. Treasury securities, obligations of U.S. government and government agencies and authorities, obligations of states, municipalities and political subdivisions, debt securities issued by foreign governments and certain corporate debt), the estimate of expected cash flows is determined by projecting a recovery value and a recovery time frame and assessing whether further principal and interest will be received. The determination of recovery value incorporates an issuer valuation assumption utilizing one or a combination of valuation methods as deemed appropriate by the Company. The Company determines the undiscounted recovery value by allocating the estimated value of the issuer to the Company's assessment of the priority of claims. The present value of the cash flows is determined by applying the effective yield of the security at the date of acquisition (or the most recent implied rate used to accrete the security if the implied rate has changed as a result of a previous impairment) and an estimated recovery time frame. Generally, that time frame for securities for which the issuer is in bankruptcy is 12 months. For securities for which the issuer is financially troubled but not in bankruptcy, that time frame is generally 24 months. Included in the present value calculation are expected principal and interest payments; however, for securities for which the issuer is classified as bankrupt or in default, the present value calculation assumes no interest payments and a single recovery amount.

In estimating the recovery value, significant judgment is involved in the development of assumptions relating to a myriad of factors related to the issuer including, but not limited to, revenue, margin and earnings projections, the likely market or liquidation values of assets, potential additional debt to be incurred pre- or post-bankruptcy/restructuring, the ability to shift existing or new debt to different priority layers, the amount of restructuring/bankruptcy expenses, the size and priority of unfunded pension obligations, litigation or other contingent claims, the treatment of intercompany claims and the likely outcome with respect to inter-creditor conflicts.

For structured fixed maturity securities (primarily residential and commercial mortgage-backed securities and asset-backed securities), the Company estimates the present value of the security by projecting future cash flows of the assets underlying the securitization, allocating the flows to the various tranches based on the structure of the securitization and determining the present value of the cash flows using the effective yield of the security at the date of acquisition (or the most recent implied rate used to accrete the security if the implied rate has changed as a result of a previous impairment or changes in expected cash flows). The Company incorporates levels of delinquencies,

defaults and severities as well as credit attributes of the remaining assets in the securitization, along with other economic data, to arrive at its estimate of the parameters applied to the assets underlying the securitization.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Real Estate Investments
On at least an annual basis, the Company obtains independent appraisals for substantially all of its real estate investments. In addition, the carrying value of all real estate investments is reviewed for impairment on a quarterly basis or when events or changes in circumstances indicate that the carrying amount may not be recoverable. The review for impairment considers the valuation from the independent appraisal, when applicable, and incorporates an estimate of the undiscounted cash flows expected to result from the use and eventual disposition of the real estate property. An impairment loss is recognized if the expected future undiscounted cash flows are less than the carrying value of the real estate property. The impairment loss is the amount by which the carrying amount exceeds fair value.
Other Investments
The Company reviews its investments in private equity limited partnerships, hedge funds and real estate partnerships for impairment no less frequently than quarterly and monitors the performance throughout the year through discussions with the managers/general partners. If the Company becomes aware of an impairment of a partnership's investments at the balance sheet date prior to receiving the partnership's financial statements, it will recognize an impairment by recording a reduction in the carrying value of the partnership with a corresponding charge to net investment income.
Changes in Intent to Sell Temporarily Impaired Assets
The Company may, from time to time, sell invested assets subsequent to the balance sheet date that it did not intend to sell at the balance sheet date. Conversely, the Company may not sell invested assets that it asserted that it intended to sell at the balance sheet date. Such changes in intent are due to events occurring subsequent to the balance sheet date. The types of events that may result in a change in intent include, but are not limited to, significant changes in the economic facts and circumstances related to the invested asset (e.g., a downgrade or upgrade from a rating agency), significant unforeseen changes in liquidity needs, or changes in tax laws or the regulatory environment.
Securities Lending
The Company has, from time to time, engaged in securities lending activities from which it generates net investment income by lending certain of its investments to other institutions for short periods of time. Borrowers of these securities provide collateral equal to at least 102% of the market value of the loaned securities plus accrued interest. This collateral is held by a third-party custodian, and the Company has the right to access the collateral only in the event that the institution borrowing the Company's securities is in default under the lending agreement (i.e., the Company is not permitted to re-pledge or sell any such collateral). Therefore, the Company does not recognize the receipt of the collateral held by the third-party custodian or the obligation to return the collateral. The loaned securities remain a recorded asset of the Company. The Company accepts only cash as collateral for securities on loan and restricts the manner in which that cash is invested.
Reinsurance Recoverables
Amounts recoverable from reinsurers are estimated in a manner consistent with the associated claim liability. The Company reports its reinsurance recoverables net of an allowance for estimated uncollectible reinsurance recoverables. The allowance is based upon the Company's ongoing review of amounts outstanding, length of collection periods, changes in reinsurer credit standing, disputes, applicable coverage defenses and other relevant factors. Amounts deemed to be uncollectible, including amounts due from known insolvent reinsurers, are written off against the allowance for estimated uncollectible reinsurance recoverables. Any subsequent collections of amounts previously written off are reported as part of claims and claim adjustment expenses. The Company evaluates and monitors the financial condition of its reinsurers under voluntary reinsurance arrangements to minimize its exposure to significant losses from reinsurer insolvencies.
Deferred Acquisition Costs
Incremental direct costs of acquired, new and renewal insurance contracts, consisting of commissions (other than contingent commissions) and premium-related taxes, are capitalized and charged to expense pro rata over the contract periods in which the related premiums are earned. Deferred acquisition costs are reviewed to determine if they are

recoverable from future income

and, if not, are charged to expense. Future investment income attributable to related premiums is taken into account in measuring the recoverability of the carrying value of this asset. All other acquisition expenses are charged to operations as incurred.

Contractholder Receivables and Payables

Under certain workers' compensation insurance contracts with deductible features, the Company is obligated to pay the claimant for the full amount of the claim. The Company is subsequently reimbursed by the policyholder for the deductible amount. These amounts are included on a gross basis in the consolidated balance sheet in contractholder payables and contractholder receivables, respectively.

Goodwill and Other Intangible Assets

The Company performs a review, on at least an annual basis, of goodwill held by the reporting units which are the Company's three operating and reportable segments: Business Insurance; Bond & Specialty Insurance; and Personal Insurance. The Company estimates the fair value of its reporting units and compares it to their carrying value, including goodwill. If the carrying values of the reporting units were to exceed their fair value, the amount of the impairment would be calculated and goodwill adjusted accordingly.

The Company uses a discounted cash flow model to estimate the fair value of its reporting units. The discounted cash flow model is an income approach to valuation that is based on a detailed cash flow analysis for deriving a current fair value of reporting units and is representative of the Company's reporting units' current and expected future financial performance. The discount rate assumptions reflect the Company's assessment of the risks inherent in the projected future cash flows and the Company's weighted-average cost of capital, and are compared against available market data for reasonableness.

Other indefinite-lived intangible assets held by the Company are also reviewed for impairment on at least an annual basis. The classification of the asset as indefinite-lived is reassessed and an impairment is recognized if the carrying amount of the asset exceeds its fair value.

Intangible assets that are deemed to have a finite useful life are amortized over their useful lives. The carrying amount of intangible assets with a finite useful life is regularly reviewed for indicators of impairment in value. Impairment is recognized only if the carrying amount of the intangible asset is not recoverable from its undiscounted cash flows and is measured as the difference between the carrying amount and the fair value of the asset.

As a result of the reviews performed for the years ended December 31, 2018, 2017 and 2016, the Company determined that the estimated fair value substantially exceeded the respective carrying value of its reporting units for those years and that goodwill was not impaired. The Company also determined during its reviews for each year that its other indefinite-lived intangible assets and finite-lived intangible assets were not impaired.

Claims and Claim Adjustment Expense Reserves

Claims and claim adjustment expense reserves represent estimates for the ultimate cost of unpaid reported and unreported claims incurred and related expenses. The reserves are adjusted regularly based upon experience. Included in the claims and claim adjustment expense reserves in the consolidated balance sheet are reserves for long-term disability and annuity claim payments, primarily arising from workers' compensation insurance and workers' compensation excess insurance policies, that are discounted to the present value of estimated future payments.

The Company performs a continuing review of its claims and claim adjustment expense reserves, including its reserving techniques and the impact of reinsurance. The reserves are also reviewed regularly by qualified actuaries employed by the Company. Since the reserves are based on estimates, the ultimate liability may be more or less than such reserves. The effects of changes in such estimated reserves are included in the results of operations in the period in which the estimates are changed. Such changes in estimates could occur in a future period and may be material to the Company's results of operations and financial position in such period.

Other Liabilities

Included in other liabilities in the consolidated balance sheet is the Company's estimate of its liability for guaranty fund and other insurance-related assessments. The liability for expected state guaranty fund and other premium-based assessments is recognized as the Company writes or becomes obligated to write or renew the premiums on which the assessments are expected to be based. The liability for loss-based assessments is recognized as the related losses are incurred. At December 31, 2018 and 2017, the Company had a liability of $217 million and $231 million, respectively, for guaranty fund and other insurance-related assessments and related recoverables of $16 million at both dates. The liability for such assessments and the related recoverables are not discounted for the time value of money. The loss-based assessments are expected to be paid over a period ranging from one year to the life expectancy of certain workers' compensation claimants and the recoveries are expected to occur over the same period of time.

Also included in other liabilities is an accrual for policyholder dividends. Certain insurance contracts, primarily workers' compensation, are participating whereby dividends are paid to policyholders in accordance with contract provisions. Net written premiums for participating dividend policies were approximately 1% of total net written premiums for each of the years ended December 31, 2018, 2017 and 2016. Policyholder dividends are accrued against earnings using best available estimates of amounts to be paid. The liability accrued for policyholder dividends totaled $72 million and $67 million at December 31, 2018 and 2017, respectively.

Treasury Stock

The cost of common stock repurchased by the Company is reported as treasury stock and represents authorized and unissued shares of the Company under the Minnesota Business Corporation Act.

Statutory Accounting Practices

The Company's U.S. insurance subsidiaries, domiciled principally in the State of Connecticut, are required to prepare statutory financial statements in accordance with the accounting practices prescribed or permitted by the insurance departments of the states of domicile. Prescribed statutory accounting practices are those practices that are incorporated directly or by reference in state laws, regulations, and general administrative rules applicable to all insurance enterprises domiciled in a particular state. The State of Connecticut requires insurers domiciled in Connecticut to prepare their statutory financial statements in accordance with National Association of Insurance Commissioners' (NAIC) statutory accounting practices.

Permitted statutory accounting practices are those practices that differ either from state-prescribed statutory accounting practices or NAIC statutory accounting practices.

The Company does not apply any statutory accounting practices that would be considered a prescribed or permitted statutory accounting practice that differs from NAIC statutory accounting practices.

The Company's non-U.S. insurance subsidiaries file financial statements prepared in accordance with the regulatory reporting requirements of their respective local jurisdiction.

Premiums and Unearned Premium Reserves

Premiums are recognized as revenues pro rata over the policy period. Unearned premium reserves represent the unexpired portion of policy premiums. Accrued retrospective premiums are included in premium balances receivable. Premium balances receivable are reported net of an allowance for estimated uncollectible premium amounts.

Ceded premiums are charged to income over the applicable term of the various reinsurance contracts with third party reinsurers. Prepaid reinsurance premiums represent the unexpired portion of premiums ceded to reinsurers and are reported as part of other assets.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Fee Income
Fee income includes servicing carrier fees and revenues from large deductible policies and service contracts and is recognized as the Company completes its performance obligations, which is primarily on a pro rata basis over the contract service period or the underlying policy periods.
Other Revenues
Other revenues include revenues from premium installment charges, which are recognized as collected, revenues of noninsurance subsidiaries other than fee income and gains and losses on dispositions of assets and redemption of debt, and other miscellaneous revenues, including gains recognized as a result of settlements of reinsurance disputes and claims-related legal matters.
Income Taxes
The Company recognizes deferred income tax assets and liabilities for the expected future tax effects attributable to temporary differences between the financial statement and tax return bases of assets and liabilities, based on enacted tax rates and other provisions of the tax law. The effect of a change in tax laws or rates on deferred tax assets and liabilities is recognized in income in the period in which such change is enacted. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that all or some portion of the deferred tax assets will not be realized.
Foreign Currency Translation
The Company assigns functional currencies to its foreign operations, which are generally the currencies of the local operating environment. Foreign currency amounts are remeasured to the functional currency, and the resulting foreign exchange gains or losses are reflected in earnings. Functional currency amounts are then translated into U.S. dollars. The foreign currency remeasurement and translation are calculated using current exchange rates for items reported in the balance sheets and average exchange rates for items recorded in earnings. The change in unrealized foreign currency translation gain or loss during the year, net of tax, is a component of other comprehensive income.
Share-Based Compensation
The Company has an employee stock incentive compensation plan that permits grants of nonqualified stock options, incentive stock options, stock appreciation rights, restricted stock, deferred stock, stock units, performance awards and other share-based or share-denominated awards with respect to the Company's common stock.
Compensation cost is measured based on the grant-date fair value of an award, utilizing the assumptions discussed in note 13. Compensation cost is recognized for financial reporting purposes over the period in which the employee is required to provide service in exchange for the award (generally the vesting period). In connection with certain share-based awards, participants are entitled to receive dividends during the vesting period, either in cash or dividend equivalent shares, commensurate with the dividends paid to common shareholders. Dividends and dividend equivalent shares on awards that are expected to vest are recorded in retained earnings. Dividends paid on awards that are not expected to vest as part of the Company's forfeiture estimate are recorded as compensation expense.
Nature of Operations
Business Insurance
Business Insurance offers a broad array of property and casualty insurance and insurance-related services to its customers, primarily in the United States, as well as in Canada, the United Kingdom, the Republic of Ireland, Brazil and throughout other parts of the world as a corporate member of Lloyd's. Business Insurance is organized as follows:

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Domestic

- Select Accounts provides small businesses with property and casualty insurance products and services, including commercial multi-peril, workers' compensation, commercial automobile, general liability and commercial property.
- Middle Market provides mid-sized businesses with property and casualty insurance products and services, including workers' compensation, general liability, commercial multi-peril, commercial automobile and commercial property, as well as risk management, claims handling and other services. Middle Market generally provides these products to mid-sized businesses through Commercial Accounts, as well as to targeted industries through Construction, Technology, Public Sector Services and Oil & Gas, and additionally, provides mono-line umbrella and excess coverage insurance through Excess Casualty. Middle Market also provides insurance for goods in transit and movable objects, as well as builders' risk insurance, through Inland Marine; insurance for the marine transportation industry and related services, as well as other businesses involved in international trade, through Ocean Marine; and comprehensive breakdown for equipment, including property and business interruption, through Boiler & Machinery.
- National Accounts provides large companies with casualty insurance products and services, including workers' compensation, commercial automobile and general liability, generally utilizing loss-sensitive products, on both a bundled and unbundled basis. National Accounts also includes the Company's commercial residual market business, which primarily offers workers' compensation services to the involuntary market.
- National Property and Other provides traditional and customized commercial property insurance programs to large and mid-sized customers through National Property. National Property and Other also provides insurance coverage for the commercial transportation industry through Northland Transportation, general liability and commercial property policies for small, difficult to place specialty classes of commercial business primarily on an excess and surplus lines basis through Northfield, and tailored property and casualty insurance programs on an admitted basis for customers with common risk characteristics or coverage requirements through National Programs. National Property and Other also serves small to medium-sized agricultural businesses, including farms, ranches, wineries and related operations, through Agribusiness.

International

- International, through its operations in Canada, the United Kingdom, the Republic of Ireland and Brazil, provides property and casualty insurance and risk management services to several customer groups, including, among others, those in the technology, manufacturing and public services industry sectors. International also provides insurance for both the foreign exposures of United States organizations and the United States exposures of foreign organizations through Global Services. At its Lloyd's syndicate (Syndicate 5000), for which the Company provides 100% of the capital, International underwrites six principal businesses — international marine, retail marine, global property, construction & special risks, energy and aviation.

Business Insurance also includes Simply Business, a leading provider of small business insurance policies primarily in the United Kingdom that was acquired in August 2017, as well as Business Insurance Other, which primarily comprises the Company's asbestos and environmental liabilities, and the assumed reinsurance and certain other runoff operations.

Bond & Specialty Insurance

Bond & Specialty Insurance provides surety, fidelity, management liability, professional liability, and other property and casualty coverages and related risk management services to its customers in the United States and certain specialty insurance products in Canada, the United Kingdom, the Republic of Ireland and Brazil, utilizing various degrees of financially-based underwriting approaches. The range of coverages includes performance, payment and commercial surety bonds for construction and general commercial enterprises; fidelity insurance for private companies, not-for-profit organizations and financial institutions; management liability coverages including directors' and officers' liability, employment practices liability, fiduciary liability and cyber risk for public corporations, private companies, not-for-profit organizations and financial institutions; professional liability

coverage for a variety of professionals including, among others, lawyers and design professionals; and in the United States only, property, workers' compensation, auto and general liability for financial institutions.

Bond & Specialty Insurance surety business in Brazil and Colombia is conducted through Junto Holding Brasil S.A. (Junto) and Junto Holding Latam S.A. in Brazil. The Company owns 49.5% of both Junto, a market leader in surety coverages in Brazil, and Junto Holding Latam S.A., which owns a majority interest in JMalucelli Travelers Seguros S.A., a Colombian start-up surety provider. These joint venture investments are accounted for using the equity method and are included in "other investments" on the consolidated balance sheet.

Personal Insurance

Personal Insurance writes a broad range of property and casualty insurance covering individuals' personal risks, primarily in the United States, as well as in Canada. The primary products of automobile and homeowners insurance are complemented by a broad suite of related coverages.

Automobile policies provide coverage for liability to others for both bodily injury and property damage, uninsured motorist protection, and for physical damage to an insured's own vehicle from collision, fire, flood, hail and theft. In addition, many states require policies to provide first-party personal injury protection, frequently referred to as no-fault coverage.

Homeowners policies provide protection against losses to dwellings and contents from a variety of perils (excluding flooding) as well as coverage for personal liability. The Company writes homeowners insurance for dwellings, condominiums and tenants, and rental properties. The Company also writes coverage for boats and yachts and valuable personal items such as jewelry, and also writes coverages for umbrella liability, identity fraud, and weddings and special events.

2. SEGMENT INFORMATION

The accounting policies used to prepare the segment reporting data for the Company's three reportable business segments are the same as those described in the Summary of Significant Accounting Policies in note 1.

Except as described below for certain legal entities, the Company allocates its invested assets and the related net investment income to its reportable business segments. Pre-tax net investment income is allocated based upon an investable funds concept, which takes into account liabilities (net of non-invested assets) and appropriate capital considerations for each segment. For investable funds, a benchmark investment yield is developed that reflects the estimated duration of the loss reserves' future cash flows, the interest rate environment at the time the losses were incurred and A+ rated corporate debt instrument yields. For capital, a benchmark investment yield is developed that reflects the average yield on the total investment portfolio. The benchmark investment yields are applied to each segment's investable funds and capital, respectively, to produce a total notional investment income by segment. The Company's actual net investment income is allocated to each segment in proportion to the respective segment's notional investment income to total notional investment income. There are certain legal entities within the Company that are dedicated to specific reportable business segments. The invested assets and related net investment income from these legal entities are reported in the applicable business segment and are not allocated among the other business segments.

The cost of the Company's catastrophe treaty program is included in the Company's ceded premiums and is allocated among reportable business segments based on an estimate of actual market reinsurance pricing using expected losses calculated by the Company's catastrophe model, adjusted for any experience adjustments.

The following tables summarize the components of the Company's revenues, income, net written premiums and total assets by reportable business segments.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
2. SEGMENT INFORMATION (Continued)

(for the year ended December 31, in millions)	Business Insurance	Bond & Specialty Insurance	Personal Insurance	Total Reportable Segments
2018				
Premiums	$ 14,722	$ 2,420	$ 9,917	$ 27,059
Net investment income	1,833	233	408	2,474
Fee income	412	—	20	432
Other revenues	112	23	66	201
Total segment revenues [1]	$ 17,079	$ 2,676	$ 10,411	$ 30,166
Amortization and depreciation	$ 2,943	$ 515	$ 1,719	$ 5,177
Income tax expense	259	198	42	499
Segment income [1]	1,638	793	297	2,728
2017				
Premiums	$ 14,146	$ 2,307	$ 9,230	$ 25,683
Net investment income	1,786	228	383	2,397
Fee income	430	—	17	447
Other revenues	69	24	60	153
Total segment revenues [1]	$ 16,431	$ 2,559	$ 9,690	$ 28,680
Amortization and depreciation	$ 2,852	$ 493	$ 1,627	$ 4,972
Income tax expense (benefit)	448	208	(44)	612
Segment income [1]	1,613	556	128	2,297
2016				
Premiums	$ 13,855	$ 2,260	$ 8,419	$ 24,534
Net investment income	1,701	239	362	2,302
Fee income	442	—	16	458
Other revenues	168	21	63	252
Total segment revenues [1]	$ 16,166	$ 2,520	$ 8,860	$ 27,546
Amortization and depreciation	$ 2,783	$ 491	$ 1,530	$ 4,804
Income tax expense	656	309	192	1,157
Segment income [1]	1,982	712	517	3,211

(1) Segment revenues for reportable business segments exclude net realized investment gains. Segment income for reportable business segments equals net income excluding the after-tax impact of net realized investment gains and, in 2017, the impact of the Tax Cuts and Jobs Act of 2017 at enactment.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
2. SEGMENT INFORMATION (Continued)

Net written premiums by market were as follows:

(for the year ended December 31, in millions)	2018	2017	2016
Business Insurance:			
Domestic:			
Select Accounts	$2,828	$2,800	$2,729
Middle Market	8,214	7,756	7,379
National Accounts	1,025	1,010	1,058
National Property and Other	1,805	1,691	1,779
Total Domestic	13,872	13,257	12,945
International	1,084	1,013	955
Total Business Insurance	14,956	14,270	13,900
Bond & Specialty Insurance:			
Domestic:			
Management Liability	1,455	1,367	1,342
Surety	835	793	757
Total Domestic	2,290	2,160	2,099
International	238	199	172
Total Bond & Specialty Insurance	2,528	2,359	2,271
Personal Insurance:			
Domestic:			
Agency:			
Automobile	4,972	4,646	4,103
Homeowners and Other	4,148	3,933	3,772
Total Agency	9,120	8,579	7,875
Direct-to-Consumer	396	361	309
Total Domestic	9,516	8,940	8,184
International	708	650	603
Total Personal Insurance	10,224	9,590	8,787
Total consolidated net written premiums	$27,708	$26,219	$24,958

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
2. SEGMENT INFORMATION (Continued)

Business Segment Reconciliations (for the year ended December 31, in millions)	2018	2017	2016
Revenue reconciliation			
Earned premiums			
Business Insurance:			
Domestic:			
Workers' compensation	$3,899	$3,962	$3,969
Commercial automobile	2,388	2,132	2,010
Commercial property	1,828	1,775	1,769
General liability	2,181	2,047	1,977
Commercial multi-peril	3,333	3,198	3,148
Other	28	29	31
Total Domestic	13,657	13,143	12,904
International	1,065	1,003	951
Total Business Insurance	14,722	14,146	13,855
Bond & Specialty Insurance:			
Domestic:			
Fidelity and surety	1,017	977	962
General liability	1,004	962	946
Other	195	187	180
Total Domestic	2,216	2,126	2,088
International	204	181	172
Total Bond & Specialty Insurance	2,420	2,307	2,260
Personal Insurance:			
Domestic			
Automobile	5,097	4,655	4,013
Homeowners and Other	4,135	3,943	3,813
Total Domestic	9,232	8,598	7,826
International	685	632	593
Total Personal Insurance	9,917	9,230	8,419
Total earned premiums	27,059	25,683	24,534
Net investment income	2,474	2,397	2,302
Fee income	432	447	458
Other revenues	201	153	252
Total segment revenues	30,166	28,680	27,546
Other revenues	2	6	11
Net realized investment gains	114	216	68
Total revenues	$30,282	$28,902	$27,625
Income reconciliation, net of tax			
Total segment income	$2,728	$2,297	$3,211
Interest Expense and Other [1]	(298)	(254)	(244)
Core income	2,430	2,043	2,967
Net realized investment gains	93	142	47
Impact of Tax Cuts and Jobs Act of 2017 at enactment	—	(129)	—
Net income	$2,523	$2,056	$3,014

(1) The primary component of Interest Expense and Other was after-tax interest expense of $278 million, $240 million and $236 million in 2018, 2017 and 2016, respectively.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
2. SEGMENT INFORMATION (Continued)

(at December 31, in millions)	2018	2017
Asset reconciliation:		
Business Insurance	$78,965	$78,082
Bond & Specialty Insurance	8,693	8,776
Personal Insurance	15,943	15,949
Total assets for reportable segments	103,601	102,807
Other assets [1]	632	676
Total consolidated assets	$104,233	$103,483

(1) The primary components of other assets at December 31, 2018 were accrued over-funded benefit plan assets related to the Company's qualified domestic pension plan and other intangible assets. The primary components of other assets at December 31, 2017 were accrued over-funded benefit plan assets related to the Company's qualified domestic pension plan, other intangible assets and deferred taxes.

Enterprise-Wide Disclosures

The Company does not have revenue from transactions with a single customer amounting to 10 percent or more of its revenues.

The following table presents revenues of the Company’s operations based on location:

(for the year ended December 31, in millions)	2018	2017	2016
U.S.	$28,418	$27,253	$25,904
Non-U.S.:			
Canada	1,293	1,232	1,154
Other Non-U.S.	571	417	567
Total Non-U.S.	1,864	1,649	1,721
Total revenues	$30,282	$28,902	$27,625

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

3. INVESTMENTS

Fixed Maturities

The amortized cost and fair value of investments in fixed maturities classified as available for sale were as follows:

(at December 31, 2018, in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$ 2,076	$ 4	$ 16	$2,064
Obligations of states, municipalities and political subdivisions:				
Local general obligation	14,473	219	120	14,572
Revenue	9,755	172	74	9,853
State general obligation	1,329	18	13	1,334
Pre-refunded	2,772	80	—	2,852
Total obligations of states, municipalities and political subdivisions	28,329	489	207	28,611
Debt securities issued by foreign governments	1,255	7	5	1,257
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,557	54	38	2,573
All other corporate bonds	29,307	156	583	28,880
Redeemable preferred stock	77	2	—	79
Total	$ 63,601	$ 712	$ 849	$63,464

(at December 31, 2017, in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$ 2,080	$ 4	$ 8	$2,076
Obligations of states, municipalities and political subdivisions:				
Local general obligation	13,488	444	26	13,906
Revenue	11,307	338	19	11,626
State general obligation	1,443	44	3	1,484
Pre-refunded	3,758	142	1	3,899
Total obligations of states, municipalities and political subdivisions	29,996	968	49	30,915
Debt securities issued by foreign governments	1,505	14	10	1,509
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,334	87	11	2,410
All other corporate bonds	25,311	478	100	25,689
Redeemable preferred stock	90	5	—	95
Total	$ 61,316	$ 1,556	$ 178	$62,694

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
3. INVESTMENTS (Continued)

The amortized cost and fair value of fixed maturities by contractual maturity follow. Actual maturities will differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

(at December 31, 2018, in millions)	Amortized Cost	Fair Value
Due in one year or less	$ 4,489	$4,505
Due after 1 year through 5 years	17,020	17,021
Due after 5 years through 10 years	17,030	16,785
Due after 10 years	22,505	22,580
	61,044	60,891
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,557	2,573
Total	$ 63,601	$63,464

Pre-refunded bonds of $2.85 billion and $3.90 billion at December 31, 2018 and 2017, respectively, were bonds for which states or municipalities have established irrevocable trusts, almost exclusively comprised of U.S. Treasury securities and obligations of U.S. government and government agencies and authorities. These trusts were created to fund the payment of principal and interest due under the bonds.

The Company's fixed maturity investment portfolio at December 31, 2018 and 2017 included $2.57 billion and $2.41 billion, respectively, of residential mortgage-backed securities, which include pass-through securities and collateralized mortgage obligations (CMOs). Included in the totals at December 31, 2018 and 2017 were $859 million and $804 million, respectively, of GNMA, FNMA, FHLMC (excluding FHA project loans) and Canadian government guaranteed residential mortgage-backed pass-through securities classified as available for sale. Also included in those totals were residential CMOs classified as available for sale with a fair value of $1.71 billion and $1.61 billion at December 31, 2018 and 2017, respectively. Approximately 52% and 55% of the Company's CMO holdings at December 31, 2018 and 2017, respectively, were guaranteed by or fully collateralized by securities issued by GNMA, FNMA or FHLMC. The weighted average credit rating of the $828 million and $717 million of non-guaranteed CMO holdings at December 31, 2018 and 2017, respectively, was "Aa1" and "A1," respectively. The weighted average credit rating of all of the above securities was "Aaa/Aa1" and "Aa1" at December 31, 2018 and 2017, respectively.

At December 31, 2018 and 2017, the Company held commercial mortgage-backed securities (CMBS, including FHA project loans) of $1.22 billion and $1.17 billion, respectively, which are included in "All other corporate bonds" in the tables above. At December 31, 2018 and 2017, approximately $458 million and $475 million of these securities, respectively, or the loans backing such securities, contained guarantees by the U.S. government or a government-sponsored enterprise. The weighted average credit rating of the $759 million and $693 million of non-guaranteed securities at December 31, 2018 and 2017, respectively, was "Aaa" at both dates. The CMBS portfolio is supported by loans that are diversified across economic sectors and geographical areas. The weighted average credit rating of the CMBS portfolio was "Aaa" at both December 31, 2018 and 2017.

At December 31, 2018 and 2017, the Company had $367 million and $304 million, respectively, of securities on loan as part of a tri-party lending agreement.

Proceeds from sales of fixed maturities classified as available for sale were $3.55 billion, $1.85 billion and $1.42 billion in 2018, 2017 and 2016, respectively. Gross gains of $51 million, $42 million and $79 million and gross losses of $18 million, $38 million and $20 million were realized on those sales in 2018, 2017 and 2016, respectively.

At December 31, 2018 and 2017, the Company's insurance subsidiaries had $4.23 billion and $4.41 billion, respectively, of securities on deposit at financial institutions in certain states pursuant to the respective states' insurance regulatory requirements. Funds deposited with third parties to be used as collateral to secure various liabilities on behalf of insureds, cedants and other creditors had a fair value of $37 million and $35 million at December 31, 2018 and 2017, respectively. Other investments pledged as collateral securing outstanding letters of credit had a fair value of $1 million at both December 31, 2018 and 2017. In addition, the Company utilizes Lloyd's trust deposits, whereby

owned securities with a fair value of approximately $115 million and $37 million held by a wholly-owned subsidiary at December 31, 2018 and 2017, respectively, and $33 million held by TRV at both December 31, 2018 and 2017 were pledged into Lloyd's trust accounts to provide a portion of the capital needed to support the Company's obligations at Lloyd's.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
3. INVESTMENTS (Continued)

Equity Securities

The cost and fair value of investments in equity securities were as follows:

(at December 31, 2018, in millions)	Cost	Gross Gains	Gross Losses	Fair Value
Public common stock	$338	$ 2	$ 24	$ 316
Non-redeemable preferred stock	44	8	—	52
Total	$382	$ 10	$ 24	$ 368

(at December 31, 2017, in millions)	Cost	Gross Gains	Gross Losses	Fair Value
Public common stock	$332	$ 8	$ 1	$ 339
Non-redeemable preferred stock	108	12	6	114
Total	$440	$ 20	$ 7	$ 453

For the year ended December 31, 2018, the Company recognized $29 million of net losses on equity securities still held as of December 31, 2018.

Proceeds from sales of equity securities previously classified as available for sale were $765 million and $92 million in 2017 and 2016, respectively. Gross gains of $239 million and $17 million and gross losses of $3 million and $3 million were realized on those sales in 2017 and 2016, respectively.

Real Estate

The Company's real estate investments include warehouses, office buildings and other commercial land and properties that are directly owned. The Company negotiates commercial leases with individual tenants through unrelated, licensed real estate brokers. Negotiated terms and conditions include, among others, rental rates, length of lease period and improvements to the premises to be provided by the landlord.

Proceeds from the sale of real estate investments were $74 million, $23 million and $69 million in 2018, 2017 and 2016, respectively. Gross gains of $23 million, $10 million and $7 million were realized on those sales in 2018, 2017 and 2016, respectively, and there were no gross losses. Accumulated depreciation on real estate held for investment purposes was $383 million and $364 million at December 31, 2018 and 2017, respectively.

Future minimum rental income on operating leases relating to the Company's real estate properties is expected to be $101 million, $90 million, $77 million, $62 million and $39 million for 2019, 2020, 2021, 2022 and 2023, respectively, and $75 million for 2024 and thereafter.

Short-term Securities

The Company's short-term securities consist of Aaa-rated registered money market funds, U.S. Treasury securities, high-quality commercial paper (primarily A1/P1) and high-quality corporate securities purchased within a year to their maturity with a combined average of 54 days to maturity at December 31, 2018. The amortized cost of these securities, which totaled $3.99 billion and $4.90 billion at December 31, 2018 and 2017, respectively, approximated their fair value.

Variable Interest Entities

Entities which do not have sufficient equity at risk to allow the entity to finance its activities without additional financial support or in which the equity investors, as a group, do not have the characteristic of a controlling financial interest are referred to as variable interest entities (VIE). A VIE is consolidated by the variable interest holder that is determined to have the controlling financial interest (primary beneficiary) as a result of having both the power to direct the activities of a VIE that most significantly impact the VIE's economic performance and the obligation to absorb losses or right to receive benefits from the VIE that could potentially be significant to the VIE. The Company determines whether it is the primary beneficiary of an entity subject to

consolidation based on a qualitative assessment of the VIE's capital structure, contractual terms, nature of the VIE's operations and purpose and the Company's relative exposure to the related risks of the VIE on the date it becomes initially involved in the VIE. The Company reassesses its VIE determination with respect to an entity on an ongoing basis.

The Company is a passive investor in limited partner equity interests issued by third party VIEs. These include certain of the Company's investments in private equity limited partnerships, hedge funds and real estate partnerships where the Company is not related to the general partner. These investments are generally accounted for under the equity method and reported in the Company's consolidated balance sheet as other investments unless the Company is deemed the primary beneficiary. These equity interests generally cannot be redeemed. Distributions from these investments are received by the Company as a result of liquidation of the underlying investments of the funds and/or as income distribution. The Company's maximum exposure to loss with respect to these investments is limited to the investment carrying amounts reported in the Company's consolidated balance sheet and any unfunded commitment. The Company considers an investment in a VIE in which it has a 20% or greater equity interest as a significant VIE. Neither the Company's carrying amounts nor the unfunded commitments related to these significant VIE's are material individually or in the aggregate.

Unrealized Investment Losses

The following tables summarize, for all investments in an unrealized loss position at December 31, 2018 and 2017, the aggregate fair value and gross unrealized loss by length of time those securities have been continuously in an unrealized loss position. The fair value amounts reported in the tables are estimates that are prepared using the process described in note 4. The Company also relies upon estimates of several factors in its review and evaluation of individual investments, using the process described in note 1, in determining whether such investments are other-than-temporarily impaired.

	Less than 12 months		12 months or longer		Total	
(at December 31, 2018, in millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Fixed maturities						
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$ 484	$ 5	$1,011	$ 11	$1,495	$ 16
Obligations of states, municipalities and political subdivisions	5,241	82	3,298	125	8,539	207
Debt securities issued by foreign governments	96	—	328	5	424	5
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	593	9	1,070	29	1,663	38
All other corporate bonds	12,622	303	6,872	280	19,494	583
Total fixed maturities	$ 19,036	$ 399	$12,579	$ 450	$31,615	$ 849

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
3. INVESTMENTS (Continued)

	Less than 12 months		12 months or longer		Total	
(at December 31, 2017, in millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Fixed maturities						
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$ 1,150	$ 5	$470	$ 3	$1,620	$ 8
Obligations of states, municipalities and political subdivisions	505	2	2,959	47	3,464	49
Debt securities issued by foreign governments	394	6	111	4	505	10
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	1,021	7	250	4	1,271	11
All other corporate bonds	6,062	48	1,990	52	8,052	100
Total fixed maturities	9,132	68	5,780	110	14,912	178
Equity securities						
Public common stock	18	—	34	1	52	1
Non-redeemable preferred stock	3	—	56	6	59	6
Total equity securities	21	—	90	7	111	7
Total	$ 9,153	$ 68	$5,870	$ 117	$15,023	$ 185

At December 31, 2018, the amount of gross unrealized losses for all fixed maturity investments reported at fair value for which fair value was less than 80% of amortized cost was not significant.

Impairment Charges

Impairment charges included in net realized investment gains in the consolidated statement of income were as follows:

(for the year ended December 31, in millions)	2018	2017	2016
Fixed maturities			
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$ —	$ —	$ —
Obligations of states, municipalities and political subdivisions	—	—	—
Debt securities issued by foreign governments	—	—	—
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	—	—	—
All other corporate bonds	1	4	15
Redeemable preferred stock	—	—	—
Total fixed maturities	1	4	15
Equity securities			
Public common stock	—	9	9
Non-redeemable preferred stock	—	—	3
Total equity securities	—	9	12
Other investments	—	1	2
Total	$ 1	$ 14	$ 29

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
3. INVESTMENTS (Continued)

The following tables present the cumulative amount of and the changes during the year in credit losses on fixed maturities held at December 31, 2018 and 2017, that were recognized in the consolidated statement of income from other-than-temporary impairments (OTTI) and for which a portion of the OTTI was recognized in other comprehensive income (loss) in the consolidated balance sheet.

Year ended December 31, 2018 (in millions)	Cumulative OTTI Credit Losses Recognized for Securities Held, Beginning of Period	Additions for OTTI Securities Where No Credit Losses Were Previously Recognized	Additions for OTTI Securities Where Credit Losses Have Been Previously Recognized	Reductions Due to Sales/Defaults of Credit-Impaired Securities	Adjustments to Book Value of Credit-Impaired Securities due to Changes in Cash Flows	Cumulative OTTI Credit Losses Recognized for Securities Still Held, End of Period
Fixed maturities						
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	$ 29	$ —	$ —	$ (18)	$ 4	$ 15
All other corporate bonds	46	—	—	(12)	8	42
Total fixed maturities	$ 75	$ —	$ —	$ (30)	$ 12	$ 57

Year ended December 31, 2017 (in millions)	Cumulative OTTI Credit Losses Recognized for Securities Held, Beginning of Period	Additions for OTTI Securities Where No Credit Losses Were Previously Recognized	Additions for OTTI Securities Where Credit Losses Have Been Previously Recognized	Reductions Due to Sales/Defaults of Credit-Impaired Securities	Adjustments to Book Value of Credit-Impaired Securities due to Changes in Cash Flows	Cumulative OTTI Credit Losses Recognized for Securities Still Held, End of Period
Fixed maturities						
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	$ 31	$ —	$ —	$ —	$ (2)	$ 29
All other corporate bonds	54	—	1	(7)	(2)	46
Total fixed maturities	$ 85	$ —	$ 1	$ (7)	$ (4)	$ 75

Concentrations and Credit Quality

Concentrations of credit risk arise from exposure to counterparties that are engaged in similar activities and have similar economic characteristics that could cause their ability to meet contractual obligations to be similarly affected by changes in economic or other conditions. The Company seeks to mitigate credit risk by actively monitoring the creditworthiness of counterparties, obtaining collateral as deemed appropriate and applying controls that include credit approvals, limits of credit exposure and other monitoring procedures.

At December 31, 2018 and 2017, other than U.S. Treasury securities and obligations of U.S. government and government agencies and authorities, the Company was not exposed to any concentration of credit risk of a single issuer greater than 5% of the Company's shareholders' equity.

Included in fixed maturities are below investment grade securities totaling $1.48 billion and $1.67 billion at December 31, 2018 and 2017, respectively. The Company defines its below investment grade securities as those securities rated below investment grade by external rating agencies, or the equivalent by the Company when a public rating does not exist. Such securities include below investment grade bonds that are publicly traded and certain other privately issued bonds that are classified as below investment grade loans.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
3. INVESTMENTS (Continued)

Net Investment Income

(for the year ended December 31, in millions)	2018	2017	2016
Gross investment income			
Fixed maturities	$1,980	$1,895	$1,981
Equity securities	16	28	37
Short-term securities	92	62	29
Real estate investments	48	44	51
Other investments	377	406	242
Gross investment income	2,513	2,435	2,340
Investment expenses	39	38	38
Net investment income	$2,474	$2,397	$2,302

Changes in net unrealized gains on investment securities that are included as a separate component of other comprehensive income (loss) were as follows:

(at and for the year ended December 31, in millions)	2018	2017	2016
Changes in net unrealized investment gains			
Fixed maturities	$(1,515)	$513	$(915)
Equity securities	—	(215)	51
Other investments	(1)	4	2
Change in net pre-tax unrealized gains on investment securities	(1,516)	302	(862)
Related tax expense (benefit)	(319)	78	(303)
Change in net unrealized gains on investment securities	(1,197)	224	(559)
Cumulative effect of adoption of updated accounting guidance for equity financial instruments at January 1, 2018	(22)	—	—
Reclassification of certain tax effects from accumulated other comprehensive income at January 1, 2018	152	—	—
Balance, beginning of year	954	730	1,289
Balance, end of year	$(113)	$954	$730

The total impact of net unrealized gains on investment securities was $1.11 billion after-tax at December 31, 2017, which included the $954 million reported in accumulated other comprehensive income shown above, as well as $158 million included in retained earnings that was part of the impact of enactment of the Tax Cuts and Jobs Act of 2017 recorded in earnings.

Derivative Financial Instruments

From time to time, the Company enters into U.S. Treasury note futures contracts to modify the effective duration of specific assets within the investment portfolio. U.S. Treasury futures contracts require a daily mark-to-market and settlement with the broker. At December 31, 2018 and 2017, the Company had $0 and $400 million notional value of open U.S. Treasury futures contracts, respectively. Net realized investment gains and losses related to U.S. Treasury futures contracts in 2018, 2017 and 2016 were not significant.

The Company also sells a small amount of U.S. equity index put option contracts that are settled for cash upon their expiration or when they are rolled over. Net realized investment losses related to these derivatives in 2018, 2017 and 2016 were not significant.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. FAIR VALUE MEASUREMENTS

The Company's estimates of fair value for financial assets and financial liabilities are based on the framework established in the fair value accounting guidance. The framework is based on the inputs used in valuation, gives the highest priority to quoted prices in active markets and requires that observable inputs be used in the valuations when available. The disclosure of fair value estimates in the fair value accounting guidance hierarchy is based on whether the significant inputs into the valuation are observable. In determining the level of the hierarchy in which the estimate is disclosed, the highest priority is given to unadjusted quoted prices in active markets and the lowest priority to unobservable inputs that reflect the Company's significant market assumptions. The level in the fair value hierarchy within which the fair value measurement is reported is based on the lowest level input that is significant to the measurement in its entirety. The three levels of the hierarchy are as follows:

- Level 1 - Unadjusted quoted market prices for identical assets or liabilities in active markets that the Company has the ability to access.
- Level 2 - Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in inactive markets; or valuations based on models where the significant inputs are observable (e.g., interest rates, yield curves, prepayment speeds, default rates, loss severities, etc.) or can be corroborated by observable market data.
- Level 3 - Valuations based on models where significant inputs are not observable. The unobservable inputs reflect the Company's own assumptions about the inputs that market participants would use.

Valuation of Investments Reported at Fair Value in Financial Statements

The fair value of a financial instrument is the estimated amount at which the instrument could be exchanged in an orderly transaction between knowledgeable, unrelated, willing parties, i.e., not in a forced transaction. The estimated fair value of a financial instrument may differ from the amount that could be realized if the security was sold in an immediate sale, e.g., a forced transaction. Additionally, the valuation of investments is more subjective when markets are less liquid due to the lack of market based inputs, which may increase the potential that the estimated fair value of an investment is not reflective of the price at which an actual transaction would occur.

For investments that have quoted market prices in active markets, the Company uses the unadjusted quoted market prices as fair value and includes these prices in the amounts disclosed in Level 1 of the hierarchy. The Company receives the quoted market prices from third party, nationally recognized pricing services. When quoted market prices are unavailable, the Company utilizes these pricing services to determine an estimate of fair value. The fair value estimates provided from these pricing services are included in the amount disclosed in Level 2 of the hierarchy. If quoted market prices and an estimate from a pricing service are unavailable, the Company produces an estimate of fair value based on internally developed valuation techniques, which, depending on the level of observable market inputs, will render the fair value estimate as Level 2 or Level 3. The Company bases all of its estimates of fair value for assets on the bid price as it represents what a third-party market participant would be willing to pay in an arm's length transaction.

Fixed Maturities

The Company utilized a pricing service to estimate fair value measurements for approximately 99% and 98% of its fixed maturities at December 31, 2018 and 2017, respectively. The pricing service utilizes market quotations for fixed maturity securities that have quoted prices in active markets. Since fixed maturities other than U.S. Treasury securities generally do not trade on a daily basis, the pricing service prepares estimates of fair value measurements for these securities using its proprietary pricing applications, which include available relevant market information, benchmark curves, benchmarking of like securities, sector groupings and matrix pricing. Additionally, the pricing service uses an Option Adjusted Spread model to develop prepayment and interest rate scenarios.

The pricing service evaluates each asset class based on relevant market information, relevant credit information, perceived market movements and sector news. The market inputs utilized in the pricing evaluation, listed in the approximate order of priority, include: benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, reference data, and industry and economic events. The extent

of the use of each market input depends on the asset class

and the market conditions. Depending on the security, the priority of the use of inputs may change or some market inputs may not be relevant. For some securities, additional inputs may be necessary.

The pricing service utilized by the Company has indicated that it will only produce an estimate of fair value if there is objectively verifiable information to produce a valuation. If the pricing service discontinues pricing an investment, the Company would be required to produce an estimate of fair value using some of the same methodologies as the pricing service but would have to make assumptions for any market-based inputs that were unavailable due to market conditions. The Company reviews the estimates of fair value provided by the pricing service and compares the estimates to the Company's knowledge of the market to determine if the estimates obtained are representative of the prices in the market. In addition, the Company has periodic discussions with the pricing service to discuss and understand any changes in process and their responsiveness to changes occurring in the markets. The Company also monitors all monthly price changes and further evaluates any securities whose value changed more than 10% from the prior month. The Company has implemented various other processes including randomly selecting purchased or sold securities and comparing execution prices to the estimates from the pricing service as well as reviewing securities whose valuation did not change from their previous valuation (stale price review). The Company also uses a second independent pricing service to further test the primary pricing service's valuation of the Company's fixed maturity portfolio. These processes have not highlighted any significant issues with the fair value estimates received from the primary pricing service.

The fair value estimates of most fixed maturity investments are based on observable market information rather than market quotes. Accordingly, the estimates of fair value for such fixed maturities, other than U.S. Treasury securities, provided by the pricing service are included in the amount disclosed in Level 2 of the hierarchy. The estimated fair value of U.S. Treasury securities is included in the amount disclosed in Level 1 as the estimates are based on unadjusted market prices.

The Company also holds certain fixed maturity investments which are not priced by the pricing service and, accordingly, estimates the fair value of such fixed maturities using an internal matrix that is based on market information regarding interest rates, credit spreads and liquidity. The underlying source data for calculating the matrix of credit spreads relative to the U.S. Treasury curve are observable market-based indices that relate to corporate and high-yield fixed maturity investments. The Company includes the fair value estimates of these corporate bonds in Level 2, since all significant inputs are market observable.

While the vast majority of the Company's fixed maturities are included in Level 2, the Company holds a number of municipal bonds and corporate bonds which are not valued by the pricing service and also estimates the fair value of these bonds using another internal pricing matrix that includes some unobservable inputs that are significant to the valuation. Due to the limited amount of observable market information, the Company includes the fair value estimates for these particular bonds in Level 3. The fair value of the fixed maturities for which the Company used this internal pricing matrix was $82 million and $127 million at December 31, 2018 and 2017, respectively. Additionally, the Company holds a small amount of other fixed maturity investments that have characteristics that make them unsuitable for matrix pricing. For these fixed maturities, the Company obtains a quote from a broker (primarily the market maker). The fair value of the fixed maturities for which the Company received a broker quote was $104 million and $77 million at December 31, 2018 and 2017, respectively. Due to the disclaimers on the quotes that indicate that the price is indicative only, the Company includes these fair value estimates in Level 3.

Equity Securities — Public Common Stock and Non-Redeemable Preferred Stock

For public common stock and non-redeemable preferred stocks, the Company receives prices from pricing services that are based on observable market transactions and includes these estimates in the amount disclosed in Level 1. When current market quotes in active markets are unavailable for certain non-redeemable preferred stocks held by the Company, the Company receives an estimate of fair value from the pricing services. The services utilize similar methodologies to price the non-redeemable preferred stocks as they do for the fixed maturities. The Company includes

the fair value estimate for these non-redeemable preferred stocks in the amount disclosed in Level 2.

Other Investments

The Company holds investments in various publicly-traded securities which are reported in other investments. These investments include mutual funds and other small holdings. The $16 million and $19 million fair value of these investments at December 31, 2018 and 2017, respectively, was disclosed in Level 1. At December 31, 2018 and 2017, the Company held investments in non-public common and preferred equity securities, with fair value estimates of $36 million and $38 million, respectively, reported in other investments, where the fair value estimate is determined either internally or by an external fund manager based on recent

filings, operating results, balance sheet stability, growth and other business and market sector fundamentals. Due to the significant unobservable inputs in these valuations, the Company includes the total fair value estimate for all of these investments at December 31, 2018 and 2017 in the amount disclosed in Level 3.

Other Liabilities

The Company has a put/call option that was entered into in connection with a business acquisition that allows the Company to acquire the remaining shares of the acquired company at a future date. The fair value of the put/call at December 31, 2018 was $10 million and was determined using an internal model and is based on the acquired company's financial performance, adjusted for a risk margin and discounted to present value. The Company includes the fair value estimate of the put/call in Level 3.

Fair Value Hierarchy

The following tables present the level within the fair value hierarchy at which the Company’s financial assets and financial liabilities are measured on a recurring basis. An investment transferred between levels during a period is transferred at its fair value as of the beginning of that period.

(at December 31, 2018, in millions)	Total	Level 1	Level 2	Level 3
Invested assets:				
Fixed maturities				
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$2,064	$2,064	$—	$ —
Obligations of states, municipalities and political subdivisions	28,611	—	28,599	12
Debt securities issued by foreign governments	1,257	—	1,257	—
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,573	—	2,554	19
All other corporate bonds	28,880	—	28,725	155
Redeemable preferred stock	79	3	76	—
Total fixed maturities	63,464	2,067	61,211	186
Equity securities				
Public common stock	316	316	—	—
Non-redeemable preferred stock	52	30	22	—
Total equity securities	368	346	22	—
Other investments	52	16	—	36
Total	$63,884	$2,429	$61,233	$ 222
Other liabilities	$10	$—	$—	$ 10

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
4. FAIR VALUE MEASUREMENTS (Continued)

(at December 31, 2017, in millions)	Total	Level 1	Level 2	Level 3
Invested assets:				
Fixed maturities				
U.S. Treasury securities and obligations of U.S. government and government agencies and authorities	$2,076	$2,076	$—	$ —
Obligations of states, municipalities and political subdivisions	30,915	—	30,910	5
Debt securities issued by foreign governments	1,509	—	1,509	—
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	2,410	—	2,371	39
All other corporate bonds	25,689	11	25,518	160
Redeemable preferred stock	95	3	92	—
Total fixed maturities	62,694	2,090	60,400	204
Equity securities				
Public common stock	339	339	—	—
Non-redeemable preferred stock	114	45	69	—
Total equity securities	453	384	69	—
Other investments	57	19	—	38
Total	$63,204	$2,493	$60,469	$ 242

During the years ended December 31, 2018 and 2017, the Company's transfers between Level 1 and Level 2 were not significant.

The following tables present the changes in the Level 3 fair value category for the years ended December 31, 2018 and 2017.

(in millions)	Fixed Maturities	Other Investments	Total
Balance at December 31, 2017	$ 204	$ 38	$242
Total realized and unrealized investment gains (losses):			
Reported in net realized investment gains [1]	2	7	9
Reported in increases in other comprehensive income (loss)	(4)	—	(4)
Purchases, sales and settlements/maturities:			
Purchases	146	3	149
Sales	(11)	(12)	(23)
Settlements/maturities	(71)	—	(71)
Gross transfers into Level 3	11	—	11
Gross transfers out of Level 3	(91)	—	(91)
Balance at December 31, 2018	$ 186	$ 36	$222
Amount of total realized investment gains (losses) for the period included in the consolidated statement of income attributable to changes in the fair value of assets still held at the reporting date	$ —	$ —	$—

(1) Includes impairments on investments held at the end of the period as well as amortization on fixed maturities.

The Company also includes in Level 3 the put/call option entered into in connection with a business combination that is reported in other liabilities and had a fair value of $10 million at December 31, 2018.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. FAIR VALUE MEASUREMENTS (Continued)

(in millions)	Fixed Maturities	Other Investments	Total
Balance at December 31, 2016	$ 184	$ 36	$220
Total realized and unrealized investment gains (losses):			
Reported in net realized investment gains [1]	—	(1)	(1)
Reported in increases in other comprehensive income (loss)	1	3	4
Purchases, sales and settlements/maturities:			
Purchases	312	—	312
Sales	(2)	—	(2)
Settlements/maturities	(47)	—	(47)
Gross transfers into Level 3	21	—	21
Gross transfers out of Level 3	(265)	—	(265)
Balance at December 31, 2017	$ 204	$ 38	$242
Amount of total realized investment gains (losses) for the period included in the consolidated statement of income attributable to changes in the fair value of assets still held at the reporting date	$ —	$ (1)	$(1)

(1) Includes impairments on investments held at the end of the period as well as amortization on fixed maturities.

Financial Instruments Disclosed, But Not Carried, At Fair Value

The following tables present the carrying value and fair value of the Company's financial assets and financial liabilities disclosed, but not carried, at fair value, and the level within the fair value hierarchy at which such assets and liabilities are categorized.

(at December 31, 2018, in millions)	Carrying Value	Fair Value	Level 1	Level 2	Level 3
Financial assets:					
Short-term securities	$ 3,985	$3,985	$ 632	$3,316	$ 37
Financial liabilities:					
Debt	$ 6,464	$7,128	$ —	$7,128	$ —
Commercial paper	100	100	—	100	—

(at December 31, 2017, in millions)	Carrying Value	Fair Value	Level 1	Level 2	Level 3
Financial assets:					
Short-term securities	$ 4,895	$4,895	$1,238	$3,622	$ 35
Financial liabilities:					
Debt	$ 6,471	$7,702	$—	$7,702	$ —
Commercial paper	100	100	—	100	—

The Company had no material assets or liabilities that were measured at fair value on a non-recurring basis during the years ended December 31, 2018 and 2017.

5. REINSURANCE

The Company's consolidated financial statements reflect the effects of assumed and ceded reinsurance transactions. Assumed reinsurance refers to the acceptance of certain insurance risks that other insurance companies have underwritten. Ceded reinsurance involves transferring certain insurance risks (along with the related written and earned premiums) the Company has underwritten

to other insurance companies who agree to share these risks. The primary purpose of ceded reinsurance is to protect the Company, at a cost, from losses in excess of the amount it is prepared to accept and to protect the Company's capital. Reinsurance is placed on both a quota-share and excess-of-loss basis. Ceded reinsurance arrangements do not discharge the Company as the primary insurer, except for instances where the primary policy or policies have been novated, such as in certain structured settlement agreements.

The Company utilizes a corporate catastrophe excess-of-loss reinsurance treaty with unaffiliated reinsurers to manage its exposure to losses resulting from catastrophes and to protect its capital. In addition to the coverage provided under this treaty, the Company also utilizes catastrophe bonds to protect against certain weather-related and earthquake losses in the Northeastern United States, and a Northeast catastrophe reinsurance treaty to protect against losses resulting from weather-related and earthquake catastrophes in the Northeastern United States. The Company also utilizes excess-of-loss treaties to protect against earthquake losses up to a certain threshold in Business Insurance (for certain markets) and for Personal Insurance, and several reinsurance treaties specific to its international operations.

The Company monitors the financial condition of its reinsurers under voluntary reinsurance arrangements to evaluate the collectability of amounts due from reinsurers and as a basis for determining the reinsurers with which the Company conducts ongoing business. In addition, in the ordinary course of business, the Company may become involved in coverage disputes with its reinsurers. Some of these disputes could result in lawsuits and arbitrations brought by or against the reinsurers to determine the Company's rights and obligations under the various reinsurance agreements. The Company employs dedicated specialists and strategies to manage reinsurance collections and disputes.

Included in reinsurance recoverables are amounts related to involuntary reinsurance arrangements. The Company is required to participate in various involuntary reinsurance arrangements through assumed reinsurance, principally with regard to residual market mechanisms in workers' compensation and automobile insurance, as well as homeowners' insurance in certain coastal areas. In addition, the Company provides services for several of these involuntary arrangements (mandatory pools and associations) under which it writes such residual market business directly, then cedes 100% of this business to the mandatory pool. Such participations and servicing arrangements are arranged to mitigate credit risk to the Company, as any ceded balances are jointly backed by all the pool members.

Also included in reinsurance recoverables are amounts related to certain structured settlements. Structured settlements are annuities purchased from various life insurance companies to settle certain personal physical injury claims, of which workers' compensation claims comprise a significant portion. In cases where the Company did not receive a release from the claimant, the structured settlement is included in reinsurance recoverables and the related claim cost is included in the liability for claims and claim adjustment expense reserves, as the Company retains the contingent liability to the claimant. If it is expected that the life insurance company is not able to pay, the Company would recognize an impairment of the related reinsurance recoverable if, and to the extent, the purchased annuities are not covered by state guaranty associations. In the event that the life insurance company fails to make the required annuity payments, the Company would be required to make such payments.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
5. REINSURANCE (Continued)

The following is a summary of reinsurance financial data reflected in the consolidated statement of income:

(for the year ended December 31, in millions)	2018	2017	2016
Written premiums			
Direct	$28,210	$26,648	$25,567
Assumed	1,042	1,000	928
Ceded	(1,544)	(1,429)	(1,537)
Total net written premiums	$27,708	$26,219	$24,958
Earned premiums			
Direct	$27,536	$26,189	$25,262
Assumed	1,024	965	875
Ceded	(1,501)	(1,471)	(1,603)
Total net earned premiums	$27,059	$25,683	$24,534
Percentage of assumed earned premiums to net earned premiums	3.8 %	3.8 %	3.6 %
Ceded claims and claim adjustment expenses incurred	$1,293	$1,225	$762

Ceded premiums include the premiums paid for coverage provided by the Company's catastrophe bonds.

Reinsurance recoverables include amounts recoverable on both paid and unpaid claims and claim adjustment expenses and were as follows:

(at December 31, in millions)	2018	2017
Gross reinsurance recoverables on paid and unpaid claims and claim adjustment expenses	$3,485	$3,303
Allowance for uncollectible reinsurance	(110)	(111)
Net reinsurance recoverables	3,375	3,192
Mandatory pools and associations	2,005	2,011
Structured settlements	2,990	3,106
Total reinsurance recoverables	$8,370	$8,309

Terrorism Risk Insurance Program

The Terrorism Risk Insurance Program is a Federal program administered by the Department of the Treasury authorized through December 31, 2020 that provides for a system of shared public and private compensation for certain insured losses resulting from certified acts of terrorism.

In order for a loss to be covered under the program (subject losses), the loss must meet certain aggregate industry loss minimums and must be the result of an event that is certified as an act of terrorism by the U.S. Secretary of the Treasury, in consultation with the Secretary of Homeland Security and the Attorney General of the United States. The annual aggregate industry loss minimum under the program is $180 million for 2019 and will increase to $200 million for 2020. The program excludes from participation the following types of insurance: Federal crop insurance, private mortgage insurance, financial guaranty insurance, medical malpractice insurance, health or life insurance, flood insurance, reinsurance, commercial automobile, professional liability (other than directors' and officers'), surety, burglary and theft, and farm-owners multi-peril. In the case of a war declared by Congress, only workers' compensation losses are covered by the program. All commercial property and casualty insurers licensed in the United States are generally required to participate in the program. Under the program, a participating insurer, in exchange for making terrorism insurance available, is entitled to be reimbursed by the Federal Government for 81% of subject losses in 2019, after an insurer deductible, subject to an annual cap. This reimbursement percentage will decrease to 80% of subject losses in 2020.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

5. REINSURANCE (Continued)

The deductible for any calendar year is equal to 20% of the insurer's direct earned premiums for covered lines for the preceding calendar year. The Company's estimated deductible under the program is $2.52 billion for 2019. The annual cap limits the amount of aggregate subject losses for all participating insurers to $100 billion. Once subject losses have reached the $100 billion aggregate during a program year, participating insurers will not be liable under the program for additional covered terrorism losses for that program year. There have been no terrorism-related losses that have triggered program coverage since the program was established. Since the law is untested, there is substantial uncertainty as to how it will be applied if an act of terrorism is certified under the program. It is also possible that future legislative action could change or eliminate the program. Further, given the unpredictable frequency and severity of terrorism losses, as well as the limited terrorism coverage in the Company's own reinsurance program, future losses from acts of terrorism, particularly involving nuclear, biological, chemical or radiological events, could be material to the Company's operating results, financial position and/or liquidity in future periods. In addition, the Company may not have sufficient resources to respond to claims arising from a high frequency of high severity natural catastrophes and/or of man-made catastrophic events involving conventional means. While the Company seeks to manage its exposure to man-made catastrophic events involving conventional means, the Company may not have sufficient resources to respond to claims arising out of one or more man-made catastrophic events involving nuclear, biological, chemical or radiological means.

6. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

The following table presents the carrying amount of the Company's goodwill by segment. Each reportable segment includes goodwill associated with the Company's international business which is subject to the impact of changes in foreign currency exchange rates.

(at December 31, in millions)	2018	2017
Business Insurance [1]	$2,585	$2,585
Bond & Specialty Insurance	550	550
Personal Insurance	776	790
Other	26	26
Total	$3,937	$3,951

(1) Goodwill at December 31, 2018 included $26 million associated with a business acquisition in 2018, none of which will be deductible for tax purposes.

Other Intangible Assets

The following tables present a summary of the Company's other intangible assets by major asset class:

(at December 31, 2018, in millions)	Gross Carrying Amount	Accumulated Amortization	Net
Subject to amortization			
Customer-related	$ 98	$ 12	$86
Contract-based [1]	208	175	33
Total subject to amortization	306	187	119
Not subject to amortization	226	—	226
Total	$ 532	$ 187	$345

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
6. GOODWILL AND OTHER INTANGIBLE ASSETS (Continued)

(at December 31, 2017, in millions)	Gross Carrying Amount	Accumulated Amortization	Net
Subject to amortization			
Customer-related	$ 77	$ 4	$73
Contract-based [1]	209	167	42
Total subject to amortization	286	171	115
Not subject to amortization	227	—	227
Total	$ 513	$ 171	$342

(1) Contract-based intangible assets subject to amortization are comprised of fair value adjustments on claims and claim adjustment expense reserves, reinsurance recoverables and other contract-related intangible assets. Fair value adjustments recorded in connection with insurance acquisitions were based on management's estimate of nominal claims and claim adjustment expense reserves and reinsurance recoverables. The method used calculated a risk adjustment to a risk-free discounted reserve that would, if reserves ran off as expected, produce results that yielded the assumed cost-of-capital on the capital supporting the loss reserves. The fair value adjustments are reported as other intangible assets on the consolidated balance sheet, and the amounts measured in accordance with the acquirer's accounting policies for insurance contracts have been reported as part of the claims and claim adjustment expense reserves and reinsurance recoverables. The intangible assets are being recognized into income over the expected payment pattern. Because the time value of money and the risk adjustment (cost of capital) components of the intangible assets run off at different rates, the amount recognized in income may be a net benefit in some periods and a net expense in other periods.

Amortization expense of intangible assets was $17 million, $13 million and $11 million for the years ended December 31, 2018, 2017 and 2016, respectively. Amortization expense for all intangible assets subject to amortization is estimated to be $16 million in 2019, $15 million in 2020, $14 million in 2021, $13 million in 2022 and $12 million in 2023. Amortization expense for intangible assets arising from insurance contracts acquired in a business combination is estimated to be $6 million in 2019, $5 million in 2020, $4 million in 2021, $3 million in 2022 and $3 million in 2023.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

7. INSURANCE CLAIM RESERVES

Claims and claim adjustment expense reserves were as follows:

(at December 31, in millions)	2018	2017
Property-casualty	$50,653	$49,633
Accident and health	15	17
Total	$50,668	$49,650

The following table presents a reconciliation of beginning and ending property casualty reserve balances for claims and claim adjustment expenses:

(at and for the year ended December 31, in millions)	2018	2017	2016
Claims and claim adjustment expense reserves at beginning of year	$49,633	$47,929	$48,272
Less reinsurance recoverables on unpaid losses	8,123	7,981	8,449
Net reserves at beginning of year	41,510	39,948	39,823
Estimated claims and claim adjustment expenses for claims arising in the current year	18,614	17,846	15,675
Estimated decrease in claims and claim adjustment expenses for claims arising in prior years	(406)	(458)	(680)
Total increases	18,208	17,388	14,995
Claims and claim adjustment expense payments for claims arising in:			
Current year	7,697	7,335	6,220
Prior years	9,363	8,708	8,576
Total payments	17,060	16,043	14,796
Unrealized foreign exchange loss (gain)	(187)	217	(74)
Net reserves at end of year	42,471	41,510	39,948
Plus reinsurance recoverables on unpaid losses	8,182	8,123	7,981
Claims and claim adjustment expense reserves at end of year	$50,653	$49,633	$47,929

Gross claims and claim adjustment expense reserves at December 31, 2018 increased by $1.02 billion over December 31, 2017, primarily reflecting the impacts of (i) higher volumes of insured exposures and loss cost trends for the current accident year and (ii) catastrophe losses in 2018, partially offset by the impacts of (iii) payments related to catastrophe losses incurred in 2017 and (iv) net favorable prior year reserve development. Gross claims and claim adjustment expense reserves at December 31, 2017 increased by $1.70 billion over December 31, 2016, primarily reflecting the impacts of (i) catastrophe losses in the second half of 2017 and (ii) higher volumes of insured exposures and loss cost trends for the current accident year, partially offset by the impacts of (iii) payments related to operations in runoff and (iv) net favorable prior year reserve development.

Reinsurance recoverables on unpaid losses at December 31, 2018 increased by $59 million over December 31, 2017, primarily reflecting the 2018 impacts of catastrophe losses and the asbestos reserve increase, partially offset by cash collections. Reinsurance recoverables on unpaid losses at December 31, 2017 increased by $142 million from December 31, 2016, primarily reflecting the impacts of catastrophe losses and the asbestos reserve increase in the second half of 2017, partially offset by cash collections in 2017, including the settlement of certain disputes as discussed in more detail in note 16.

Included in the claims and claim adjustment expense reserves are reserves for long-term disability and annuity claim payments, primarily arising from workers' compensation insurance and workers' compensation excess insurance policies, that are discounted to the present value of the estimated future payments. The discount rate used was 5% at both December 31, 2018 and 2017. Total reserves net of the discount were $2.45 billion and $2.32 billion, and the related amount of discount was $1.16 billion and $1.10

billion, at December 31, 2018 and 2017, respectively. Accretion of the discount is reported as part of "claims and claim adjustment expenses" in the consolidated statement of income and was $49 million, $50 million and $50 million in 2018, 2017 and 2016, respectively.

Prior Year Reserve Development

The following disclosures regarding reserve development are on a "net of reinsurance" basis.

2018

In 2018, estimated claims and claim adjustment expenses incurred included $406 million of net favorable development for claims arising in prior years, including $517 million of net favorable prior year reserve development and $49 million of accretion of discount that impacted the Company's results of operations.

Business Insurance. Net favorable prior year reserve development in 2018 totaled $142 million, primarily driven by better than expected loss experience in the segment's domestic operations in (i) the workers' compensation product line for multiple accident years and (ii) the commercial property product line for recent accident years, partially offset by higher than expected loss experience in the segment's domestic operations in (iii) the general liability product line for both primary and excess coverages for multiple accident years, including a $225 million increase to asbestos reserves and a $55 million increase to environmental reserves and (iv) the commercial automobile product line for recent accident years.

Bond & Specialty Insurance. Net favorable prior year reserve development in 2018 totaled $266 million, primarily driven by better than expected loss experience in the segment's domestic operations in the general liability product line for management liability coverages for multiple accident years.

Personal Insurance. Net favorable prior year reserve development in 2018 totaled $109 million, primarily driven by better than expected loss experience in the segment's domestic operations in the automobile product line for recent accident years.

2017

In 2017, estimated claims and claim adjustment expenses incurred included $458 million of net favorable development for claims arising in prior years, including $592 million of net favorable prior year reserve development and $50 million of accretion of discount that impacted the Company's results of operations.

Business Insurance. Net favorable prior year reserve development in 2017 totaled $439 million, primarily driven by better than expected loss experience in the segment's domestic operations in (i) the workers' compensation product line for multiple accident years, (ii) the general liability product line (excluding an increase to asbestos and environmental reserves) for both primary and excess coverages for multiple accident years and (iii) the commercial multi-peril product line for liability coverages for multiple accident years, partially offset by (iv) a $225 million increase to asbestos reserves, (v) the impact of higher than expected loss experience in the commercial automobile product line for recent accident years and (vi) a $65 million increase to environmental reserves. The net favorable prior year reserve development in the segment's domestic operations was partially offset by net unfavorable prior year reserve development in the segment's international operations in Europe primarily due to the U.K. Ministry of Justice's "Ogden" discount rate adjustment applied to lump sum bodily injury payouts.

Bond & Specialty Insurance. Net favorable prior year reserve development in 2017 totaled $140 million, primarily driven by better than expected loss experience in the segment's domestic operations in the general liability product line for management liability coverages for multiple accident years.

Personal Insurance. Net favorable prior year reserve development in 2017 was not significant and totaled $13 million.

2016

In 2016, estimated claims and claim adjustment expenses incurred included $680 million of net favorable development for claims arising in prior years, including $771 million of net favorable prior year reserve development and $50 million of accretion of discount that impacted the Company's results of operations.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Business Insurance. Net favorable prior year reserve development in 2016 totaled $424 million, primarily driven by better than expected loss experience in the Company's domestic operations in (i) the workers' compensation product line for multiple accident years and (ii) the general liability product line (excluding an increase to asbestos and environmental reserves), related to both primary and excess coverages for multiple accident years, partially offset by (iii) a $225 million increase to asbestos reserves and (iv) a $82 million increase to environmental reserves, as well as net favorable prior year reserve development in the segment's international operations in Europe.
Bond & Specialty Insurance. Net favorable prior year reserve development in 2016 totaled $350 million, primarily driven by better than expected loss experience in the Company's domestic operations in (i) the fidelity and surety product line for multiple accident years and (ii) the general liability product line for management liability coverages for multiple accident years.
Personal Insurance. Net unfavorable prior year reserve development in 2016 was not significant and totaled $3 million.
Claims Development
The following is a summary of claims and claim adjustment expense reserves, including certain components, for the Company's major product lines by reporting segment at December 31, 2018.

(at December 31, 2018, in mllions)	Net Undiscounted Claims and Claim Adjustment Expense Reserves	Discount (Net of Reinsurance)	Subtotal: Net Claims and Claim Adjustment Expense Reserves	Reinsurance Recoverables on Unpaid Losses (4)	Claims and Claim Adjustment Expense Reserves
Business Insurance					
General liability	$ 7,159	$ (174)	$ 6,985	$ 854	$ 7,839
Commercial property	973	—	973	429	1,402
Commercial multi-peril	3,535	—	3,535	181	3,716
Commercial automobile	2,861	—	2,861	226	3,087
Workers' compensation[1]	16,039	(909)	15,130	698	15,828
Bond & Specialty Insurance					
General liability	1,833	—	1,833	152	1,985
Fidelity and surety	419	—	419	7	426
Personal Insurance					
Automobile	2,776	—	2,776	480	3,256
Homeowners (excluding Other)	1,376	—	1,376	3	1,379
International - Canada	710	—	710	26	736
Subtotal — claims and allocated claim adjustment expenses for the products presented in the development tables below	37,681	(1,083)	36,598	3,056	39,654
Other insurance contracts [2]	3,762	(5)	3,757	2,116	5,873
Unallocated loss adjustment expense reserves	2,053	—	2,053	37	2,090
Structured settlements [3]	—	—	—	2,990	2,990
Other	63	—	63	(17)	46
Total property-casualty	43,559	(1,088)	42,471	8,182	50,653
Accident and health	—	—	—	15	15
Total	$ 43,559	$ (1,088)	$ 42,471	$ 8,197	$ 50,668

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(1) Net discount amount includes discount of $70 million on reinsurance recoverables for long-term disability and annuity claim payments.

(2) Primarily includes residual market, international (other than operations in Canada within the Personal Insurance segment) and runoff assumed reinsurance business.

(3) Includes structured settlements in cases where the Company did not receive a release from the claimant.

(4) Total reinsurance recoverables (on paid and unpaid losses) at December 31, 2018 were $8.37 billion.

The claim development tables that follow present, by accident year, incurred and cumulative paid claims and allocated claim adjustment expense on a historical basis. This claim development information is presented on an undiscounted, net of reinsurance basis for ten years, or the number of years for which claims incurred typically remain outstanding if less than ten years. The claim development tables also provide the historical average annual percentage payout of incurred claims by age, net of reinsurance, as supplementary information (identified as unaudited in the tables below). For Personal Insurance - International - Canada, the claim development information reflects the acquisition of The Dominion of Canada General Insurance Company (Dominion) in November 2013 on a retrospective basis (includes Dominion data for years prior to the Company's acquisition of Dominion).

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Business Insurance
General Liability

(dollars in millions)
For the Years Ended December 31,
Incurred Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance
Unaudited

Accident Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	IBNR Reserves Dec 31, 2018	Cumulative Number of Reported Claims
2009	$ 1,060	$ 1,071	$ 1,028	$ 960	$ 869	$ 837	$ 809	$ 796	$ 783	$ 775	$ 56	25,702
2010		1,028	1,031	1,021	959	927	912	918	908	911	79	27,911
2011			1,004	1,074	1,065	998	972	935	913	908	80	27,444
2012				989	985	935	913	892	905	917	98	24,801
2013					965	975	958	940	927	933	101	22,446
2014						976	989	983	948	956	177	22,108
2015							998	956	923	967	222	21,033
2016								1,075	1,058	1,087	439	19,190
2017									1,133	1,143	717	16,464
2018										1,253	1,080	13,107
									Total	$ 9,850		

Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance
Unaudited

Accident Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
2009	$35	$167	$314	$446	$543	$613	$643	$667	$689	$701		
2010		35	139	324	487	629	702	756	781	800		
2011			47	187	355	539	660	725	762	799		
2012				32	150	295	489	589	699	754	Liability for Claims	
2013					35	175	363	498	639	745	And Allocated Claim	
2014						37	163	321	515	640	Adjustment Expenses,	
2015							36	137	336	558	Net of Reinsurance	
2016								35	191	421		
2017									40	180	2009 -	Before
2018										42	2018	2009
									Total	$5,640	$4,210	$2,949
										Total net liability		$7,159

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance
Unaudited

Years	1	2	3	4	5	6	7	8	9	10
	3.8 %	13.6 %	19.0 %	19.1 %	13.4 %	9.5 %	5.0 %	3.2 %	2.5 %	1.5 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Commercial Property

(dollars in millions)

For the Years Ended December 31,

Incurred Claims and Allocated Claims Adjustment Expenses, Net of Reinsurance
Unaudited

Accident Year	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
2014	$ 936	$ 860	$ 836	$ 835	$ 834	$ 6	21,568
2015		786	750	741	731	6	20,143
2016			896	863	820	22	22,267
2017				1,209	1,177	30	24,855
2018					1,093	73	21,547
				Total	$ 4,655		

Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance
Unaudited

Accident Year	2014	2015	2016	2017	2018	Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2014	$ 464	$ 710	$ 775	$ 803	$ 817		
2015		376	615	681	699		
2016			441	685	745		
2017				618	1,003	2014 - 2018	Before 2014
2018					561		
				Total	$ 3,825	$ 830	$ 143
					Total net liability		$ 973

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance
Unaudited

Years	1	2	3	4	5
	52.9 %	31.2 %	8.0 %	2.9 %	1.7 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Commercial Multi-Peril
(dollars in millions)
For the Years Ended December 31,

Accident Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$1,484	$1,506	$1,501	$1,498	$1,511	$1,514	$1,514	$1,509	$1,500	$1,493	$ 21	103,448
2010		1,711	1,826	1,832	1,861	1,895	1,892	1,898	1,885	1,881	32	111,931
2011			2,235	2,244	2,269	2,286	2,296	2,287	2,283	2,279	38	125,743
2012				1,885	1,883	1,903	1,888	1,888	1,867	1,859	42	104,800
2013					1,615	1,623	1,620	1,609	1,591	1,600	51	83,667
2014						1,663	1,627	1,625	1,617	1,626	72	78,097
2015							1,568	1,625	1,593	1,597	110	71,242
2016								1,662	1,623	1,598	204	68,024
2017									1,872	1,928	357	69,218
2018										1,976	605	58,784
									Total	$17,837		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$603	$958	$1,121	$1,264	$1,360	$1,408	$1,436	$1,449	$1,457	$1,466		
2010		709	1,180	1,395	1,579	1,698	1,763	1,798	1,819	1,834		
2011			1,060	1,573	1,803	1,979	2,088	2,156	2,193	2,222		
2012				795	1,246	1,424	1,590	1,699	1,752	1,780	Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2013					644	987	1,167	1,304	1,410	1,475		
2014						628	956	1,154	1,328	1,448		
2015							595	970	1,144	1,310		
2016								585	950	1,133		
2017									716	1,199	2009 - 2018	Before 2009
2018										792		
									Total	$14,659	$3,178	$357
										Total net liability		$3,535

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited

Years	1	2	3	4	5	6	7	8	9	10
	39.7 %	23.2 %	11.0 %	9.4 %	6.2 %	3.3 %	1.7 %	1.1 %	0.7 %	0.6 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Commercial Automobile

(dollars in millions)

Accident Year	For the Years Ended December 31, 2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claims Adjustment Expenses, Net of Reinsurance Unaudited						
2014	$ 1,156	$ 1,153	$ 1,155	$ 1,171	$ 1,193	$ 36	177,493
2015		1,188	1,202	1,234	1,283	83	173,333
2016			1,278	1,303	1,371	191	182,647
2017				1,386	1,501	401	190,126
2018					1,645	736	185,419
				Total	$ 6,993		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited					Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2014	$ 394	$ 611	$ 812	$ 977	$ 1,089		
2015		405	650	885	1,058		
2016			412	688	931		
2017				456	746	2014 - 2018	Before 2014
2018					515		
				Total	$ 4,339	$ 2,654	$ 207
					Total net liability		$ 2,861

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited

Years	1	2	3	4	5
	31.3 %	19.2 %	17.6 %	13.7 %	9.3 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Workers' Compensation
(dollars in millions)

Accident Year	For the Years Ended December 31, 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$1,799	$1,778	$1,746	$1,753	$1,753	$1,766	$1,775	$1,750	$1,736	$1,728	$ 221	104,789
2010		1,886	2,042	2,035	2,056	2,049	2,052	2,055	2,021	2,003	271	117,368
2011			2,284	2,303	2,347	2,350	2,379	2,385	2,363	2,348	356	136,728
2012				2,447	2,456	2,457	2,456	2,445	2,453	2,416	404	137,922
2013					2,553	2,545	2,540	2,506	2,463	2,423	473	132,424
2014						2,554	2,553	2,547	2,476	2,430	563	124,507
2015							2,644	2,585	2,505	2,441	751	122,388
2016								2,768	2,690	2,569	863	122,493
2017									2,779	2,681	1,179	119,890
2018										2,744	1,738	109,002
									Total	$23,783		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$288	$623	$828	$961	$1,065	$1,137	$1,193	$1,235	$1,274	$1,303		
2010		341	750	978	1,133	1,246	1,321	1,385	1,430	1,465		
2011			420	911	1,185	1,365	1,487	1,583	1,652	1,696		
2012				443	940	1,217	1,394	1,536	1,629	1,689	Liability for Claims	
2013					458	954	1,237	1,413	1,525	1,604	And Allocated Claim	
2014						455	944	1,224	1,399	1,505	Adjustment Expenses,	
2015							430	893	1,154	1,310	Net of Reinsurance	
2016								421	873	1,118		
2017									433	890	2009 -	Before
2018										440	2018	2009
									Total	$13,020	$10,763	$5,276
										Total net liability		$16,039

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited

Years	1	2	3	4	5	6	7	8	9	10
	17.4 %	19.5 %	11.2 %	7.3 %	5.3 %	3.8 %	3.0 %	2.2 %	2.0 %	1.7 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Bond & Specialty Insurance
General Liability

(dollars in millions)

Accident Year	For the Years Ended December 31, 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$ 592	$ 624	$ 665	$ 686	$ 680	$ 660	$ 655	$ 641	$ 631	$ 626	$ 11	6,297
2010		571	612	679	679	661	668	653	653	657	18	5,673
2011			565	596	639	632	601	545	520	508	(12)	5,212
2012				538	591	614	605	601	599	605	97	4,853
2013					510	565	606	630	654	607	103	4,442
2014						549	571	563	518	473	67	4,335
2015							528	524	486	437	92	4,155
2016								512	511	504	153	4,235
2017									534	517	266	4,128
2018										530	406	2,894
									Total	$ 5,464		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited									
2009	$36	$167	$310	$390	$460	$497	$563	$592	$595	$597
2010		33	152	291	396	482	565	597	623	631
2011			33	143	249	324	414	447	476	490
2012				38	160	255	342	383	419	436
2013					34	154	252	352	400	434
2014						38	150	239	312	367
2015							38	141	234	310
2016								30	141	233
2017									38	155
2018										49
									Total	$3,702

	2009 - 2018	Before 2009
Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	$1,762	$71
Total net liability		$1,833

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited

Years	1	2	3	4	5	6	7	8	9	10

6.8 %	21.4 %	19.4 %	15.3 %	11.4 %	7.3 %	6.0 %	3.7 %	0.9 %	0.2 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Fidelity and Surety

(dollars in millions)

	For the Years Ended December 31,						
	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claims Adjustment Expenses, Net of Reinsurance						
Accident Year	Unaudited						
2014	$ 223	$ 212	$ 165	$ 136	$ 130	$ (4)	1,069
2015		217	191	179	145	38	827
2016			226	239	205	12	866
2017				244	271	64	863
2018					220	121	595
				Total	$ 971		

	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance						
Accident Year	Unaudited					Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2014	$ 58	$ 96	$ 111	$ 127	$ 124		
2015		32	75	87	86		
2016			54	121	142		
2017				70	166	2014 - 2018	Before 2014
2018					64		
				Total	$ 582	$ 389	$ 30
					Total net liability		$ 419

	Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited				
Years	1	2	3	4	5
	29.5%	31.8%	9.9%	6.1%	(2.7)%

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Personal Insurance
Automobile

(dollars in millions)

	For the Years Ended December 31,						
	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claims Adjustment Expenses, Net of Reinsurance						
Accident Year	Unaudited						
2014	$ 2,014	$ 1,994	$ 1,981	$ 1,985	$ 1,980	$ 14	670,431
2015		2,186	2,244	2,236	2,222	35	757,837
2016			2,779	2,791	2,772	126	921,479
2017				3,323	3,256	341	1,059,610
2018					3,281	825	960,293
				Total	$ 13,511		

	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance						
Accident Year	Unaudited					Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2014	$ 1,193	$ 1,564	$ 1,763	$ 1,879	$ 1,936		
2015		1,319	1,768	1,985	2,109		
2016			1,610	2,203	2,466		
2017				1,912	2,575	2014 - 2018	Before 2014
2018					1,889		
				Total	$ 10,975	$ 2,536	$ 240
					Total net liability		$ 2,776

	Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited				
Years	1	2	3	4	5
	58.8 %	20.2 %	9.8 %	5.7 %	2.9 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Homeowners (excluding Other)

(dollars in millions)

	For the Years Ended December 31,						
	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
Accident Year	Incurred Claims and Allocated Claims Adjustment Expenses, Net of Reinsurance Unaudited						
2014	$ 1,515	$ 1,450	$ 1,453	$ 1,457	$ 1,451	$ 7	151,705
2015		1,438	1,454	1,461	1,452	10	145,088
2016			1,556	1,547	1,525	27	143,797
2017				2,312	2,340	101	168,357
2018					2,610	568	165,780
				Total	$ 9,378		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited					Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	
2014	$ 1,053	$ 1,338	$ 1,402	$ 1,425	$ 1,433		
2015		994	1,333	1,395	1,421		
2016			1,049	1,392	1,455		
2017				1,471	2,059	2014 - 2018	Before 2014
2018					1,657		
				Total	$ 8,025	$ 1,353	$ 23
					Total net liability		$ 1,376

	Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance Unaudited				
Years	1	2	3	4	5
	67.2 %	22.7 %	4.3 %	1.7 %	0.5 %

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

International - Canada
(dollars in millions)

Accident Year	For the Years Ended December 31, 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	IBNR Reserves December 31, 2018	Cumulative Number of Reported Claims
	Incurred Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited											
2009	$ 454	$ 442	$ 450	$ 456	$ 464	$ 456	$ 449	$ 449	$ 442	$ 440	$ —	55,162
2010		463	464	475	488	477	469	465	459	457	5	54,919
2011			436	416	424	420	412	406	401	396	4	55,783
2012				413	393	394	378	377	361	355	12	51,226
2013					461	455	446	435	422	421	14	54,231
2014						408	422	423	412	405	(3)	52,291
2015							343	342	342	339	16	45,201
2016								343	389	389	32	45,728
2017									329	362	26	46,545
2018										418	89	46,883
									Total	$ 3,982		

Accident Year	Cumulative Paid Claims and Allocated Claim Adjustment Expenses, Net of Reinsurance Unaudited									
2009	$189	$283	$323	$350	$379	$403	$419	$430	$433	$434
2010		182	278	313	351	380	409	425	437	442
2011			167	237	266	299	332	353	370	378
2012				157	219	249	274	300	317	325
2013					184	258	289	320	351	368
2014						180	252	287	314	344
2015							154	215	241	269
2016								201	269	294
2017									173	244
2018										208
									Total	$3,306

	2009 - 2018	Before 2009
Liability for Claims And Allocated Claim Adjustment Expenses, Net of Reinsurance	$676	$ 34
Total net liability		$ 710

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance
Unaudited

Years	1	2	3	4	5	6	7	8	9	10
	45.2 %	18.7 %	7.8 %	7.4 %	7.3 %	5.2 %	3.5 %	2.2 %	1.0 %	0.2 %

The incurred and paid amounts have been translated from the local currency to U.S. dollars using the December 31, 2018 spot rate for all years presented in the table above in order to isolate changes in foreign exchange rates from loss development.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Methodology for Estimating Incurred But Not Reported (IBNR) Reserves

Claims and claim adjustment expense reserves represent management's estimate of the ultimate liability for unpaid losses and loss adjustment expenses for claims that have been reported and claims that have been incurred but not yet reported as of the balance sheet date. Claims and claim adjustment expense reserves do not represent an exact calculation of the liability, but instead represent management estimates, primarily utilizing actuarial expertise and projection methods that develop estimates for the ultimate cost of claims and claim adjustment expenses. Because the establishment of claims and claims adjustment expense reserves is an inherently uncertain process involving estimates and judgment, currently estimated claims and claim adjustment expense reserves may change. The Company reflects changes to the reserves in the results of operations in the period the estimates are changed.

Cumulative amounts paid and case reserves held as of the balance sheet date are subtracted from the estimate of the ultimate cost of claims and claim adjustment expenses to derive incurred but not reported (IBNR) reserves. Accordingly, IBNR reserves include the cost of unreported claims, development on known claims and re-opened claims. This approach to estimating IBNR reserves has been in place for many years, with no material changes in methodology in the past year.

Detailed claim data is typically insufficient to produce a reliable indication of the initial estimate for ultimate claims and claim adjustment expenses for an accident year. As a result, the initial estimate for an accident year is generally based on an exposure-based method using either the loss ratio projection or the expected loss method. The loss ratio projection method, which is typically used for guaranteed-cost business, develops an initial estimate of ultimate claims and claim adjustment expenses for an accident year by multiplying earned premium for the accident year by a projected loss ratio. The projected loss ratio is determined by analyzing prior period experience, and adjusting for loss cost trends, rate level differences, mix of business changes and other known or observed factors influencing the accident year relative to prior accident years. The expected loss method, which is typically used for loss sensitive business, develops an initial estimate of ultimate claims and claim adjustment expenses for an accident year by analyzing exposures by account.

For prior accident years, the following estimation and analysis methods are principally used by the Company's actuaries to estimate the ultimate cost of claims and claim adjustment expenses. These estimation and analysis methods are typically referred to as conventional actuarial methods.

- The paid loss development method assumes that the future change (positive or negative) in cumulative paid losses for a given cohort of claims will occur in a stable, predictable pattern from year-to-year, consistent with the pattern observed in past cohorts.
- The case incurred development method is the same as the paid loss development method but is based on cumulative case-incurred losses rather than paid losses.
- The Bornhuetter-Ferguson method uses an initial estimate of ultimate losses for a given product line reserve component, typically expressed as a ratio to earned premium. The method assumes that the ratio of additional claim activity to earned premium for that component is relatively stable and predictable over time and that actual claim activity to date is not a credible predictor of further activity for that component. The method is used most often for more recent accident years where claim data is sparse and/or volatile, with a transition to other methods as the underlying claim data becomes more voluminous and therefore more credible.
- The average value analysis combined with the reported claim development method assumes that average claim values are stable and predictable over time for a particular cohort of claims. It is typically limited to analysis at more granular levels, such as coverage or hazard/peril, where a more homogeneous subset of claims produce a more stable and fairly predictable average value. The reported claim development method is the same as the paid loss development method but uses changes in cumulative claim counts to produce estimates of ultimate claim counts rather than ultimate dollars. The resulting estimate of ultimate claim counts by cohort is multiplied by an average value per claim from an average value analysis to obtain estimated ultimate claims and claim adjustment expenses.

While these are the principal methods utilized, the Company's actuaries have available to them the full range of actuarial methods developed by the casualty actuarial profession. The Company's actuaries are also continually monitoring developments within the profession for advances in existing techniques or the creation of new techniques that might improve current and future estimates. Most actuarial methods assume that past patterns demonstrated in the data will repeat themselves in the future. For certain reserve components where this assumption may not hold, such as asbestos and environmental reserves, conventional actuarial methods are not utilized by the Company.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
7. INSURANCE CLAIM RESERVES (Continued)

Methodology for Determining Cumulative Number of Reported Claims

A claim file is created when the Company is notified of an actual demand for payment, notified of an event that may lead to a demand for payment or when it is determined that a demand for payment could possibly lead to a future demand for payment on another coverage on the same policy or on another policy. Claim files are generally created for a policy at the claimant by coverage level, depending on the particular facts and circumstances of the underlying event.

For Business Insurance and for Personal Insurance, claim file information is summarized such that the Company generally recognizes one count for each policy claim event by internal regulatory line of business, regardless of the number of claimants or coverages involved. The claims counts are then accumulated and reported by product line. While the methodology is generally consistent within each segment for the product lines displayed, there are some minor differences between and within segments. For Bond & Specialty Insurance, the Company generally recognizes one count per coverage per policy claim event and one count per bond per surety claim event.

For purposes of the claims development tables above, claims reported for direct business are counted even if they eventually close with no loss payment, except in the case of (i) deductible business, where the claim is not counted until the case incurred claim estimate is above the deductible, and (ii) International-Canada reported claim counts where claims closed with no loss payment are not counted. Note that claims with zero claim dollars may still generate some level of claim adjustment expenses. Claim counts for assumed business are included only to the extent such counts are available. The Company generally does not receive claim count information for which the underlying claim activity is handled by others, including pools and associations. The Company does not generate claim counts for ceded business. The methods used to summarize claim counts have not changed significantly over the time periods reported in the tables above.

The Company cautions against using the summarized claim count information provided in this disclosure in attempting to project ultimate loss payouts by product line. The Company generally finds claim count data to be useful only on a more granular basis than the aggregated basis disclosed in the claim development tables above, as the risks, average values and other dynamics of the claim process can vary materially by the cause of loss and coverage within product line. For example, in Personal Automobile, the introduction of a new roadside assistance coverage feature several years ago resulted in a significant increase in claim counts with a low average claim cost. For this reason the Company varies its approach to, and in many cases the level of aggregation for, counting claims for internal analysis purposes depending on the particular granular analysis performed.

Asbestos and Environmental Reserves

At December 31, 2018 and 2017, the Company's claims and claim adjustment expense reserves included $1.62 billion and $1.64 billion, respectively, for asbestos and environmental-related claims, net of reinsurance.

It is difficult to estimate the reserves for asbestos and environmental-related claims due to the vagaries of court coverage decisions, plaintiffs' expanded theories of liability, the risks inherent in complex litigation and other uncertainties, including, without limitation, those which are set forth below.

Asbestos Reserves. Because each policyholder presents different liability and coverage issues, the Company generally reviews the exposure presented by each policyholder at least annually. Among the factors which the Company may consider in the course of this review are: available insurance coverage, including the role of any umbrella or excess insurance the Company has issued to the policyholder; limits and deductibles; an analysis of the policyholder's potential liability; the jurisdictions involved; past and anticipated future claim activity and loss development on pending claims; past settlement values of similar claims; allocated claim adjustment expense; the potential role of other insurance; the role, if any, of non-asbestos claims or potential non-asbestos claims in any resolution process; and applicable coverage defenses or determinations, if any, including the determination as to whether or not an asbestos claim is a products/completed operation claim subject to an aggregate limit and the available coverage, if any, for that claim.

In the third quarter of 2018, the Company completed its annual in-depth asbestos claim review, including a review of active policyholders and litigation cases for potential product and “non-product” liability, and noted the continuation of the following trends:

- a high level of litigation activity in certain jurisdictions involving individuals alleging serious asbestos-related illness, primarily involving mesothelioma claims;
- while overall payment patterns have been generally stable, there has been an increase in severity for certain policyholders due to the high level of litigation activity; and
- a moderate level of asbestos-related bankruptcy activity.

In the home office and field office category, which accounts for the vast majority of policyholders with active asbestos-related claims, the number of policyholders tendering asbestos claims for the first time, the number of policyholders with open asbestos claims and net asbestos-related payments declined slightly when compared to 2017. Payments on behalf of policyholders in this category continue to be influenced by a high level of litigation activity in a limited number of jurisdictions where individuals alleging serious asbestos-related injury, primarily mesothelioma, continue to target defendants who were not traditionally primary targets of asbestos litigation.

The Company's quarterly asbestos reserve reviews include an analysis of exposure and claim payment patterns by policyholder category, as well as recent settlements, policyholder bankruptcies, judicial rulings and legislative actions. The Company also analyzes developing payment patterns among policyholders in the home office and field office category and the assumed reinsurance and other category as well as projected reinsurance billings and recoveries. In addition, the Company reviews its historical gross and net loss and expense paid experience, year-by-year, to assess any emerging trends, fluctuations, or characteristics suggested by the aggregate paid activity. Conventional actuarial methods are not utilized to establish asbestos reserves and the Company's evaluations have not resulted in a reliable method to determine a meaningful average asbestos defense or indemnity payment.

The completion of these reviews and analyses in 2018, 2017 and 2016 resulted in $225 million increases in each year to the Company's net asbestos reserves. In each year, the reserve increases were primarily driven by increases in the Company's estimate of projected settlement and defense costs related to a broad number of policyholders in the home office and field office category. The increase in the estimate of projected settlement and defense costs resulted from payment trends that continue to be higher than previously anticipated due to the impact of the current litigation environment surrounding mesothelioma claims discussed above. Over the past decade, the property and casualty insurance industry, including the Company, has experienced net unfavorable prior year reserve development with regard to asbestos reserves, but the Company believes that over that period there has been a reduction in the volatility associated with the Company's overall asbestos exposure as the overall asbestos environment has evolved from one dominated by exposure to significant litigation risks, particularly coverage disputes relating to policyholders in bankruptcy who were asserting that their claims were not subject to the aggregate limits contained in their policies, to an environment primarily driven by a frequency of litigation related to individuals with mesothelioma. The Company's overall view of the current underlying asbestos environment is essentially unchanged from recent periods and there remains a high degree of uncertainty with respect to future exposure to asbestos claims.

Net asbestos paid loss and loss expenses in 2018, 2017 and 2016 were $225 million, $271 million and $708 million, respectively. Net payments in 2016 included the $458 million net payment related to PPG Industries, Inc. Approximately 9%, 4% and 69% of total net paid losses in 2018, 2017 and 2016, respectively, related to policyholders with whom the Company entered into settlement agreements that limit those policyholders' ability to present future claims to the Company.

Environmental Reserves. In establishing environmental reserves, the Company evaluates the exposure presented by each policyholder and the anticipated cost of resolution, if any. These claims are mainly brought pursuant to various state or federal statutes that require a liable party to undertake or pay for environmental remediation. Liability under these statutes may be joint and several with other responsible parties. In the course of its analysis, the Company

generally considers the probable liability, available coverage and relevant judicial interpretations. In addition, the Company considers the many variables presented, such as: the nature of the alleged activities of the policyholder at each site; the number of sites; the total number of potentially responsible parties at each site; the nature of the alleged environmental harm and the corresponding remedy at each site; the nature of government enforcement activities at each site; the ownership and general use of each site; the overall nature of the insurance relationship between the Company and the policyholder, including the role of any umbrella or excess insurance the Company has issued to the policyholder; the involvement of other insurers; the potential for other available coverage, including the number of years of coverage; the role, if any, of non-environmental claims or potential non-environmental claims in any resolution process; and the applicable law in each jurisdiction. The evaluation of the exposure presented by a policyholder can change as information concerning that policyholder and the many variables presented is developed. Conventional actuarial methods are not used to estimate these reserves.

The Company continues to receive notices from policyholders tendering claims for the first time, frequently under policies issued prior to the mid-1980s. These policyholders continue to present smaller exposures, have fewer sites and are lower tier defendants. Further, in many instances, clean-up costs have been reduced because regulatory agencies are willing to accept risk-based site analyses and more efficient clean-up technologies. Over the past several years, the Company has experienced generally favorable trends in the number of new policyholders tendering environmental claims for the first time and in the number of pending declaratory judgment actions relating to environmental matters. However, the degree to which those favorable trends have continued has been less than anticipated. In addition, reserve development on existing environmental claims has been greater than anticipated, driven by claims and legal developments in a limited number of jurisdictions. As a result of these factors, in 2018, 2017 and 2016, the Company increased its net environmental reserves by $55 million, $65 million and $82 million, respectively.

Asbestos and Environmental Reserves. As a result of the processes and procedures discussed above, management believes that the reserves carried for asbestos and environmental claims are appropriately established based upon known facts, current law and management's judgment. However, the uncertainties surrounding the final resolution of these claims continue, and it is difficult to determine the ultimate exposure for asbestos and environmental claims and related litigation. As a result, these reserves are subject to revision as new information becomes available and as claims develop. Changes in the legal, regulatory and legislative environment may impact the future resolution of asbestos and environmental claims and result in adverse loss reserve development. The emergence of a greater number of asbestos or environmental claims beyond that which is anticipated may result in adverse loss reserve development. Changes in applicable legislation and future court and regulatory decisions and interpretations, including the outcome of legal challenges to legislative and/or judicial reforms establishing medical criteria for the pursuit of asbestos claims, could affect the settlement of asbestos and environmental claims. It is also difficult to predict the ultimate outcome of complex coverage disputes until settlement negotiations near completion and significant legal questions are resolved or, failing settlement, until the dispute is adjudicated. This is particularly the case with policyholders in bankruptcy where negotiations often involve a large number of claimants and other parties and require court approval to be effective. As part of its continuing analysis of asbestos and environmental reserves, the Company continues to study the implications of these and other developments.

Because of the uncertainties set forth above, additional liabilities may arise for amounts in excess of the Company's current reserves. In addition, the Company's estimate of claims and claim adjustment expenses may change. These additional liabilities or increases in estimates, or a range of either, cannot now be reasonably estimated and could result in income statement charges that could be material to the Company's operating results in future periods.

Catastrophe Exposure

The Company has geographic exposure to catastrophe losses, which can be caused by a variety of events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, wildfires, severe winter weather, floods, tsunamis, volcanic eruptions and other naturally-occurring events, such as solar flares. Catastrophes can also result from terrorist attacks and other intentionally destructive acts including those involving nuclear, biological, chemical and radiological events, cyber events, explosions and destruction of infrastructure. The incidence and severity of catastrophes are inherently unpredictable. The extent of losses from a catastrophe is a function of both the total amount of insured exposure in the area affected by the event and the severity of the event. Most catastrophes are restricted to small geographic areas; however, hurricanes, earthquakes and wildfires may produce significant damage in larger areas, especially those that are heavily populated. The Company generally seeks to mitigate its exposure to catastrophes through individual risk selection and the purchase of catastrophe reinsurance.

There are also risks which impact the estimation of ultimate costs for catastrophes. For example, the estimation of reserves related to hurricanes can be affected by the inability of the Company and its insureds to access portions of the impacted areas, the complexity of factors contributing to the losses, the legal and regulatory uncertainties and the

nature of the information available to establish the reserves. Complex factors include, but are not limited to: determining whether damage was caused by flooding versus wind; evaluating general liability and pollution exposures; estimating additional living expenses; the impact of demand surge; the potential impact of changing climate conditions, including higher frequency and severity of weather-related events; infrastructure disruption; fraud; the effect of mold damage and business income interruption costs; and reinsurance collectibility. The timing of a catastrophe's occurrence, such as at or near the end of a reporting period, can also affect the information available to the Company in estimating reserves for that reporting period. The estimates related to catastrophes are adjusted as actual claims emerge.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. DEBT

Debt outstanding was as follows:

(at December 31, in millions)	2018	2017
Short-term:		
Commercial paper	$100	$100
5.90% Senior notes due June 2, 2019	500	—
5.80% Senior notes due May 15, 2018	—	500
Total short-term debt	600	600
Long-term:		
5.90% Senior notes due June 2, 2019	—	500
3.90% Senior notes due November 1, 2020	500	500
7.75% Senior notes due April 15, 2026	200	200
7.625% Junior subordinated debentures due December 15, 2027	125	125
6.375% Senior notes due March 15, 2033	500	500
6.75% Senior notes due June 20, 2036	400	400
6.25% Senior notes due June 15, 2037	800	800
5.35% Senior notes due November 1, 2040	750	750
4.60% Senior notes due August 1, 2043	500	500
4.30% Senior notes due August 25, 2045	400	400
8.50% Junior subordinated debentures due December 15, 2045	56	56
3.75% Senior notes due May 15, 2046	500	500
8.312% Junior subordinated debentures due July 1, 2046	73	73
4.00% Senior notes due May 30, 2047	700	700
4.05% Senior notes due March 7, 2048	500	—
Total long-term debt	6,004	6,004
Total debt principal	6,604	6,604
Unamortized fair value adjustment	44	46
Unamortized debt issuance costs	(84)	(79)
Total debt	$6,564	$6,571

2018 Debt Issuance. On March 7, 2018, the Company issued $500 million aggregate principal amount of 4.05% senior notes that will mature on March 7, 2048. The net proceeds of the issuance, after the deduction of the underwriting discount and expenses payable by the Company, totaled approximately $491 million. Interest on the senior notes is payable semi-annually in arrears on March 7 and September 7. Prior to September 7, 2047, the senior notes may be redeemed, in whole or in part, at the Company’s option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values of the remaining scheduled payments of principal and interest to but excluding September 7, 2047 on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury rate (as defined in the senior notes), plus 15 basis points. On or after September 7, 2047, the senior notes may be redeemed, in whole or in part, at the Company’s option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

2018 Debt Repayment. On May 15, 2018, the Company's $500 million, 5.80% senior notes matured and were fully paid.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
8. DEBT (Continued)

2017 Debt Issuance. On May 22, 2017, the Company issued $700 million aggregate principal amount of 4.00% senior notes that will mature on May 30, 2047. The net proceeds of the issuance, after the deduction of the underwriting discount and expenses payable by the Company, totaled approximately $689 million. Interest on the senior notes is payable semi-annually in arrears on May 30 and November 30. Prior to November 30, 2046, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values of the remaining scheduled payments of principal and interest to November 30, 2046 on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury rate (as defined in the senior notes), plus 15 basis points. On or after November 30, 2046, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

2017 Debt Redemption and Repayment. On June 2, 2017, the Company redeemed the remaining $107 million aggregate principal amount of its 6.25% Fixed-to-Floating Rate Junior Subordinated Debentures due 2067 at a price per debenture of 100% of the principal amount thereof, plus accrued and unpaid interest to the redemption date. On December 15, 2017, the Company's $450 million, 5.75% senior notes matured and were fully paid.

2016 Debt Issuance. On May 11, 2016, the Company issued $500 million aggregate principal amount of 3.75% senior notes that will mature on May 15, 2046. The net proceeds of the issuance, after the deduction of underwriting and other expenses, totaled approximately $491 million. Interest on the senior notes is payable semi-annually in arrears on May 15 and November 15. Prior to November 15, 2045, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to the greater of (a) 100% of the principal amount of any senior notes to be redeemed or (b) the sum of the present values of the remaining scheduled payments of principal and interest on any senior notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the then current Treasury Rate (as defined in the senior notes), plus 20 basis points. On or after November 15, 2045, the senior notes may be redeemed, in whole or in part, at the Company's option, at any time or from time to time, at a redemption price equal to 100% of the principal amount of any senior notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.
2016 Debt Repayment. On June 20, 2016, the Company's $400 million, 6.25% senior notes matured and were fully paid.
Description of Debt
Commercial Paper—The Company maintains an $800 million commercial paper program. (See "Credit Agreement" discussion that follows.) Interest rates on commercial paper issued in 2018 ranged from 1.47% to 2.37%, and in 2017 ranged from 0.65% to 1.17%.
Senior Notes—The Company's various senior debt issues are unsecured obligations that rank equally with one another. Interest payments are made semi-annually. The Company generally may redeem some or all of the notes prior to maturity in accordance with terms unique to each debt instrument.
Junior Subordinated Debentures—The Company's three junior subordinated debenture instruments are all similar in nature to each other. Three separate business trusts issued preferred securities to investors and used the proceeds to purchase the Company's junior subordinated debentures. Interest on each of the instruments is paid semi-annually. The Company's consolidated balance sheet includes the debt instruments acquired in a business acquisition, which were recorded at fair value as of the acquisition date. The resulting fair value adjustment is being amortized over the remaining life of the respective debt instruments using the effective-interest method. The amortization of the fair value

adjustment reduced interest expense by $2 million and $1 million for the years ended December 31, 2018 and 2017, respectively.

The following table presents merger-related unamortized fair value adjustments and the related effective interest rate:

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. DEBT (Continued)

(in millions)	Issue Rate	Maturity Date	Unamortized Fair Value Purchase Adjustment at December 31, 2018	2017	Effective Interest Rate to Maturity
Junior subordinated debentures	7.625 %	Dec. 2027	$ 12	$ 13	6.147 %
	8.500 %	Dec. 2045	14	15	6.362 %
	8.312 %	Jul. 2046	18	18	6.362 %
Total			$ 44	$ 46	

The Travelers Companies, Inc. fully and unconditionally guarantees the payment of all principal, premiums, if any, and interest on certain debt obligations of its subsidiaries Travelers Property Casualty Corp. and Travelers Insurance Group Holdings, Inc. The guarantees pertain to the $200 million 7.75% notes due 2026 and the $500 million 6.375% notes due 2033.

Maturities—The amount of debt obligations, other than commercial paper, that become due in each of the next five years is as follows: 2019, $500 million; 2020, $500 million; 2021, $0; 2022, $0; and 2023, $0.

Credit Agreement

On June 4, 2018, the Company entered into a five-year, $1.0 billion revolving credit agreement with a syndicate of financial institutions, replacing its five-year, $1.0 billion credit agreement that was due to expire on June 7, 2018. Pursuant to the credit agreement covenants, the Company must maintain a minimum consolidated net worth, defined as shareholders' equity determined in accordance with GAAP (excluding accumulated other comprehensive income (loss)) plus (a) trust preferred securities (not to exceed 15% of total capital) and (b) mandatorily convertible securities (combined with trust preferred securities, not to exceed 25% of total capital) less goodwill and other intangible assets. The threshold is adjusted downward by an amount equal to 70% of the aggregate amount of common stock repurchased by the Company after March 31, 2018, up to a maximum deduction of $1.75 billion. The threshold was $13.60 billion at December 31, 2018 and could decline to a minimum of $12.494 billion during the term of the credit agreement, subject to the Company repurchasing an additional $1.58 billion of its common stock. In addition, the credit agreement contains other customary restrictive covenants as well as certain customary events of default, including with respect to a change in control, which is defined to include the acquisition of 35% or more of the Company's voting stock and certain changes in the composition of the Company's board of directors. At December 31, 2018, the Company was in compliance with these covenants. Generally, the cost of borrowing under this agreement will range from LIBOR plus 75 basis points to LIBOR plus 137.5 basis points, depending on the Company's credit ratings. At December 31, 2018, that cost would have been LIBOR plus 100 basis points, had there been any amounts outstanding under the credit agreement. In the event that LIBOR is no longer available, the credit agreement provides that the Company and the syndicate of financial institutions use commercially reasonable efforts to jointly agree upon an alternate rate of interest.

Shelf Registration

The Company has a shelf registration statement filed with the Securities and Exchange Commission that expires on June 17, 2019 which permits it to issue securities from time to time at prices and on other terms to be determined at the time of offering.

9. SHAREHOLDERS' EQUITY AND DIVIDEND AVAILABILITY

Authorized Shares

The number of authorized shares of the Company is 1.755 billion, consisting of five million shares of preferred stock, 1.745 billion shares of voting common stock and five million undesignated shares. The Company's Articles of Incorporation authorize the Board of Directors to establish, from the undesignated shares, one or more classes and series of shares, and to further designate the type of shares and terms thereof.

Preferred Stock

The Company's Articles of Incorporation provide authority to issue up to five million shares of preferred stock.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
9. SHAREHOLDERS' EQUITY AND DIVIDEND AVAILABILITY (Continued)

Common Stock
The Company is governed by the Minnesota Business Corporation Act. All authorized shares of voting common stock have no par value. Shares of common stock reacquired are considered authorized and unissued shares.
Restricted Stock

In August 2017, the Company issued 95,953 shares of restricted stock valued at approximately $12 million in connection with a business acquisition to certain employees of the acquired business, of which 92,995 shares remained outstanding and unvested at December 31, 2018. The restricted stock is subject to service conditions and as such is recognized as share-based compensation; 50% of the restricted stock will vest two years from the issuance date and the remainder will vest three years from the issuance date. The value is being recognized over the respective vesting periods and included with the share-based compensation cost of awards that are issued under the Company's share-based incentive compensation plan (see note 13). The recipients generally have all the rights of a shareholder of the Company including the right to vote the applicable shares of common stock and to receive dividends on such shares, if and as declared by the Board of Directors. The restricted stock is held under the Company's control with the Company's transfer agent and will be released upon vesting.

Treasury Stock
The Company's Board of Directors has approved common share repurchase authorizations under which repurchases may be made from time to time in the open market, pursuant to pre-set trading plans meeting the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, in private transactions or otherwise. The authorizations do not have a stated expiration date. The timing and actual number of shares to be repurchased in the future will depend on a variety of factors, including the Company's financial position, earnings, share price, catastrophe losses, maintaining capital levels commensurate with the Company's desired ratings from independent rating agencies, funding of the Company's qualified pension plan, capital requirements of the Company's operating subsidiaries, legal requirements, regulatory constraints, other investment opportunities (including mergers and acquisitions and related financings), market conditions and other factors. In April 2017, the Board of Directors approved a share repurchase authorization that added an additional $5.0 billion of repurchase capacity. The following table summarizes repurchase activity in 2018 and remaining repurchase capacity at December 31, 2018.

(in millions, except per share amounts) Quarterly Period Ending	Number of shares repurchased	Cost of shares repurchased	Average price paid per share	Remaining capacity under share repurchase authorization
March 31, 2018	2.5	$ 350	$ 141.84	$ 4,206
June 30, 2018	2.7	350	129.66	3,856
September 30, 2018	3.0	400	130.22	3,456
December 31, 2018	1.4	170	125.09	3,286
Total	9.6	$ 1,270	132.33	3,286

The Company's Amended and Restated 2004 Stock Incentive Plan and the Amended and Restated 2014 Stock Incentive Plan provide settlement alternatives to employees in which the Company retains shares to cover payroll withholding taxes in connection with the vesting of restricted stock unit awards and performance share awards, and to cover the price of certain stock options that were exercised. During the years ended December 31, 2018 and 2017, the Company acquired $51 million and $62 million, respectively, of its common stock under these plans.
Common shares acquired are reported as treasury stock in the consolidated balance sheet.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
9. SHAREHOLDERS' EQUITY AND DIVIDEND AVAILABILITY (Continued)

Dividend Availability

The Company's U.S. insurance subsidiaries, domiciled principally in the State of Connecticut, are subject to various regulatory restrictions that limit the maximum amount of dividends available to be paid by each insurance subsidiary to its respective parent company without prior approval of insurance regulatory authorities. A maximum of $2.52 billion is available by the end of 2019 for such dividends to the holding company, TRV, without prior approval of the Connecticut Insurance Department. The Company may choose to accelerate the timing within 2019 and/or increase the amount of dividends from its insurance subsidiaries in 2019, which could result in certain dividends being subject to approval by the Connecticut Insurance Department.

In addition to the regulatory restrictions on the availability of dividends that can be paid by the Company's U.S. insurance subsidiaries, the maximum amount of dividends that may be paid to the Company's shareholders is limited, to a lesser degree, by certain covenants contained in its line of credit agreement with a syndicate of financial institutions that require the Company to maintain a minimum consolidated net worth as described in note 8.

TRV is not dependent on dividends or other forms of repatriation from its foreign operations to support its liquidity needs. The undistributed earnings of the Company's foreign operations are intended to be permanently reinvested in those operations, and such earnings were not material to the Company's financial position or liquidity at December 31, 2018.

TRV and its two non-insurance holding company subsidiaries received dividends of $2.30 billion, $2.33 billion and $3.05 billion from their U.S. insurance subsidiaries in 2018, 2017 and 2016, respectively.

For the years ended December 31, 2018, 2017 and 2016, TRV declared cash dividends per common share of $3.03, $2.83 and $2.62, respectively, and paid cash dividends of $814 million, $785 million and $757 million, respectively.

Statutory Net Income and Statutory Capital and Surplus

Statutory net income of the Company's domestic and international insurance subsidiaries was $2.61 billion, $2.30 billion and $3.20 billion for the years ended December 31, 2018, 2017 and 2016, respectively. Statutory capital and surplus of the Company's domestic and international insurance subsidiaries was $20.77 billion and $20.45 billion at December 31, 2018 and 2017, respectively.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. OTHER COMPREHENSIVE INCOME AND ACCUMULATED OTHER COMPREHENSIVE INCOME

The following table presents the changes in the Company's accumulated other comprehensive income (AOCI) for the years ended December 31, 2018, 2017 and 2016.

(in millions)	Changes in Net Unrealized Gains on Investment Securities		Net Benefit Plans	Net Unrealized Foreign Currency Translation	Total Accumulated Other Comprehensive Income (Loss)
	Having No Credit Losses Recognized in the Consolidated Statement of Income	Having Credit Losses Recognized in the Consolidated Statement of Income	Assets and Obligations Recognized in Shareholders' Equity		
Balance, December 31, 2015	$ 1,100	$ 189	$ (713)	$ (733)	$ (157)
Other comprehensive income (loss) (OCI) before reclassifications	(530)	4	(30)	(49)	(605)
Amounts reclassified from AOCI, net of tax	(42)	9	40	—	7
Net OCI, current period	(572)	13	10	(49)	(598)
Balance, December 31, 2016	528	202	(703)	(782)	(755)
OCI before reclassifications	367	4	(24)	171	518
Amounts reclassified from AOCI, net of tax	(148)	1	41	—	(106)
Net OCI, current period	219	5	17	171	412
Balance, December 31, 2017	747	207	(686)	(611)	(343)
Cumulative effect of adoption of updated accounting guidance for equity financial instruments at January 1, 2018	(34)	—	—	—	(34)
Income tax benefit	(12)	—	—	—	(12)
Net of taxes	(22)	—	—	—	(22)
Reclassification of certain tax effects from accumulated other comprehensive income at January 1, 2018	145	7	(141)	(35)	(24)
Total effect of adoption of new guidance at January 1, 2018, net of tax	123	7	(141)	(35)	(46)
OCI before reclassifications, net of tax	(1,151)	(21)	(114)	(227)	(1,513)
Amounts reclassified from AOCI, net of tax	(25)	—	68	—	43
Net OCI, current period	(1,176)	(21)	(46)	(227)	(1,470)
Balance, December 31, 2018	$ (306)	$ 193	$ (873)	$ (873)	$ (1,859)

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. OTHER COMPREHENSIVE INCOME AND ACCUMULATED OTHER COMPREHENSIVE INCOME (Continued)

The following table presents the pre-tax components of the Company's other comprehensive income (loss) and the related income tax expense (benefit).

(for the year ended December 31, in millions)	2018	2017	2016
Changes in net unrealized gains on investment securities:			
Having no credit losses recognized in the consolidated statement of income	$(1,489)	$294	$(883)
Income tax expense (benefit)	(313)	75	(311)
Net of taxes	(1,176)	219	(572)
Having credit losses recognized in the consolidated statement of income	(27)	8	21
Income tax expense (benefit)	(6)	3	8
Net of taxes	(21)	5	13
Net changes in benefit plan assets and obligations	(56)	29	16
Income tax expense (benefit)	(10)	12	6
Net of taxes	(46)	17	10
Net changes in unrealized foreign currency translation	(247)	191	(41)
Income tax expense (benefit)	(20)	20	8
Net of taxes	(227)	171	(49)
Total other comprehensive income (loss)	(1,819)	522	(887)
Total income tax expense (benefit)	(349)	110	(289)
Total other comprehensive income (loss), net of taxes	$(1,470)	$412	$(598)

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
10. OTHER COMPREHENSIVE INCOME AND ACCUMULATED OTHER COMPREHENSIVE INCOME (Continued)

The following table presents the pre-tax and related income tax (expense) benefit components of the amounts reclassified from the Company's AOCI to the Company's consolidated statement of income.

(for the year ended December 31, in millions)	2018	2017	2016
Reclassification adjustments related to unrealized gains on investment securities:			
Having no credit losses recognized in the consolidated statement of income [1]	$(32)	$(228)	$(64)
Income tax expense [2]	(7)	(80)	(22)
Net of taxes	(25)	(148)	(42)
Having credit losses recognized in the consolidated statement of income [1]	—	1	13
Income tax benefit [2]	—	—	4
Net of taxes	—	1	9
Reclassification adjustment related to benefit plan assets and obligations:			
Claims and claim adjustment expenses [3]	35	32	25
General and administrative expenses [3]	51	48	37
Total	86	80	62
Income tax benefit [2]	18	39	22
Net of taxes	68	41	40
Reclassification adjustment related to foreign currency translation [1]	—	—	—
Income tax benefit [2]	—	—	—
Net of taxes	—	—	—
Total reclassifications	54	(147)	11
Total income tax (expense) benefit	11	(41)	4
Total reclassifications, net of taxes	$43	$(106)	$7

(1) (Increases) decreases net realized investment gains on the consolidated statement of income.
(2) (Increases) decreases income tax expense on the consolidated statement of income.
(3) Increases (decreases) expenses on the consolidated statement of income.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

11. EARNINGS PER SHARE

Basic earnings per share was computed by dividing net income available to common shareholders by the weighted average number of common shares outstanding during the period. The computation of diluted earnings per share reflected the effect of potentially dilutive securities.

The following is a reconciliation of the income and share data used in the basic and diluted earnings per share computations:

(for the year ended December 31, in millions, except per share amounts)	2018	2017	2016
Basic and Diluted			
Net income, as reported	$2,523	$2,056	$3,014
Participating share-based awards — allocated income	(19)	(15)	(22)
Net income available to common shareholders — basic and diluted	$2,504	$2,041	$2,992
Common Shares			
Basic			
Weighted average shares outstanding	267.4	276.0	288.1
Diluted			
Weighted average shares outstanding	267.4	276.0	288.1
Weighted average effects of dilutive securities:			
Stock options and performance shares	2.4	2.6	2.9
Total	269.8	278.6	291.0
Net income Per Common Share			
Basic	$9.37	$7.39	$10.39
Diluted	$9.28	$7.33	$10.28

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

12. INCOME TAXES

Tax Cuts and Jobs Act of 2017

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act of 2017 (TCJA) which, among other changes, reduced the U.S. federal tax rate from 35% to 21% beginning on January 1, 2018 and imposed a tax on undistributed and previously untaxed post-1986 foreign earnings and profits (accumulated foreign earnings). Total income tax expense for 2017 included a net charge of $129 million to reflect the estimated impacts of the changes in tax laws and tax rates included in TCJA at the date of enactment, primarily reflecting the revaluation of the Company's deferred tax assets and liabilities at the new statutory federal tax rate of 21%, and the recognition of tax imposed on accumulated foreign earnings. The estimated effects of enactment of TCJA were reflected in the Company's net deferred tax asset and current income tax receivable reported on the Company’s consolidated balance sheet at December 31, 2017.

Components of Income Tax Expense

The following table presents the components of income tax expense included in the amounts reported in the Company’s consolidated financial statements:

(for the year ended December 31, in millions)	2018	2017	2016
Composition of income tax expense included in the consolidated statement of income			
Current expense:			
Federal	$424	$314	$899
Impact of TCJA at enactment	—	21	—
Foreign	41	56	21
State	8	4	8
Total current tax expense	473	395	928
Deferred expense (benefit):			
Federal	(13)	229	110
Impact of TCJA at enactment	—	108	—
Foreign	(22)	(58)	1
Total deferred tax expense (benefit)	(35)	279	111
Total income tax expense included in the consolidated statement of income	438	674	1,039
Composition of income tax expense (benefit) included in shareholders’ equity			
Expense (benefit) relating to changes in the unrealized gain (loss) on investments, unrealized loss on foreign exchange and other items in other comprehensive income (loss)	(349)	110	(289)
Total income tax expense included in the consolidated financial statements	$89	$784	$750

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
12. INCOME TAXES (Continued)

The following is a reconciliation of income tax expense at the U.S. federal statutory income tax rate to the income tax expense reported in the Company's consolidated statement of income:

(for the year ended December 31, in millions)	2018	2017	2016
Income (loss) before income taxes			
U.S.	$3,039	$2,798	$3,946
Foreign	(78)	(68)	107
Total income before income taxes	2,961	2,730	4,053
Effective tax rate			
Statutory tax rate	21 %	35 %	35 %
Expected federal income tax expense	622	956	1,419
Tax effect of:			
Nontaxable investment income	(150)	(297)	(323)
TCJA at enactment	—	129	—
Other, net	(34)	(114)	(57)
Total income tax expense	$438	$674	$1,039
Effective tax rate	15 %	25 %	26 %

The Company paid income taxes of $408 million, $514 million and $892 million during the years ended December 31, 2018, 2017 and 2016, respectively. The current income tax receivable of $12 million and $65 million at December 31, 2018 and 2017, respectively, was included in other assets in the consolidated balance sheet.

In computing taxable income, property and casualty insurers reduce underwriting income by claims and claim adjustment expenses incurred. The deduction for claims incurred is discounted at the interest rates and for the claim payment patterns prescribed by the U.S. Treasury. TCJA changed the prescribed interest rates to rates based on corporate bond yield curves and extended the applicable time periods for the claim payment pattern. These changes were effective for tax years beginning after 2017 and are subject to a transition rule that spreads the additional tax payment from the amount determined by applying these changes over the subsequent eight years beginning in 2018. This item is a taxable temporary difference and had no direct impact on total tax expense for 2017 and will not directly impact total tax expense in future years. The required additional tax payments are currently estimated to approximate $23 million per year over the eight-year period through 2025 and will result in a modest reduction in net investment income over that period.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
12. INCOME TAXES (Continued)

The net deferred tax asset comprises the tax effects of temporary differences related to the following assets and liabilities:

(at December 31, in millions)	2018	2017
Deferred tax assets		
Claims and claim adjustment expense reserves	$571	$930
Unearned premium reserves	503	478
Compensation-related liabilities	92	61
Other	200	191
Total gross deferred tax assets	1,366	1,660
Less: valuation allowance	8	6
Adjusted gross deferred tax assets	1,358	1,654
Deferred tax liabilities		
Claims and claim adjustment expense reserve discounting (transition rule)	159	560
Deferred acquisition costs	397	376
Investments	152	454
Internally developed software	92	97
Depreciation	67	57
Other	46	40
Total gross deferred tax liabilities	913	1,584
Net deferred tax asset	$445	$70

If the Company determines that any of its deferred tax assets will not result in future tax benefits, a valuation allowance must be established for the portion of these assets that are not expected to be realized. The net change in the valuation allowance for deferred tax assets was an increase of $2 million in 2018 relating to the Company's consolidated Brazilian subsidiary. Based upon a review of the Company's anticipated future taxable income, and also including all other available evidence, both positive and negative, the Company's management concluded that it is more likely than not that the net deferred tax assets will be realized.

For tax return purposes, as of December 31, 2018, the Company had net operating loss (NOL) carryforwards in the United States, Brazil, Canada and the United Kingdom. The amount and timing of realizing the benefits of NOL carryforwards depend on future taxable income and limitations imposed by tax laws. Only the benefits of the United Kingdom NOL carryforwards have been recognized in the consolidated financial statements and are included in net deferred tax assets. The NOL amounts by jurisdiction and year of expiration are as follows:

(in millions)	Amount	Year of expiration
United States	$ 2	2035 - 2036
Brazil	$ 19	None
Canada	$ 1	2037 - 2038
United Kingdom	$ 146	None

The Company recognized $41 million of tax expense resulting from deemed repatriation of foreign earnings as part of the net charge of $129 million to record the effect of TCJA at enactment during December 2017. These undistributed foreign earnings are intended to be permanently reinvested in those operations.

Provisional Tax Amounts

During the fourth quarter of 2017, the Company recorded provisional amounts for the tax imposed on accumulated foreign earnings and partnership investments, as well as the amount due under the transition rule relating to the change in discounting of claims incurred, based on information available at December 31, 2017. In 2018, the Company made

minor adjustments to the provisional

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
12. INCOME TAXES (Continued)

amounts for taxes related to accumulated foreign earnings based upon final earnings from its foreign operations and the proposed regulations issued by the U.S. Treasury. These minor adjustments were consistent with final regulations issued by the U.S. Treasury in January 2019. The Company also made minor adjustments to the provisional amount for taxes related to partnership investments based upon the latest available information associated with those investments (Form K-1s) that were received in 2018.

In November 2018, the U.S. Treasury issued proposed regulations which would establish the interest rate and discounting methodology to be used in determining the tax discount on claims and claim adjustment expense reserves under TCJA. The proposed regulations significantly reduce the deferred tax assets and liabilities related to the transition rule for discounting of reserves and reduced the estimated additional tax payments associated with the transition rule from $70 million to $23 million per year over the eight years beginning in 2018 as discussed above.

The Company estimated the amounts payable related to the transition rules for discounting of loss reserves using the regulations proposed by the U.S. Treasury during 2018. These amounts are subject to change once the final regulations are issued, which is expected to occur in 2019.

Unrecognized Tax Benefits

The following is a reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2018 and 2017:

(in millions)	2018	2017
Balance at January 1	$ 6	$13
Additions for tax positions of prior years	25	—
Reductions for tax positions of prior years	—	(1)
Reductions based on tax positions related to current year	—	(6)
Balance at December 31	$ 31	$6

Included in the balances at December 31, 2018 and 2017 were $29 million and $3 million, respectively, of unrecognized tax benefits that, if recognized, would affect the annual effective tax rate. Also included in the balances at those dates were $2 million and $3 million, respectively, of tax positions for which the ultimate deductibility is certain, but for which there is uncertainty about the timing of deductibility. The timing of such deductibility could affect the annual effective tax rate depending on the year of deduction and tax rate at the time.

The Company recognizes accrued interest and penalties, if any, related to unrecognized tax benefits in income taxes. During the years ended December 31, 2018, 2017 and 2016, the Company recognized approximately $(10) million, $(33) million and $31 million in interest, respectively. The Company had approximately $14 million and $25 million accrued for the payment of interest at December 31, 2018 and 2017, respectively.

The IRS has completed examinations of the Company's U.S. income tax returns for all years through 2014. The Company does not expect any significant changes to its liability for unrecognized tax benefits during the next twelve months.

13. SHARE-BASED INCENTIVE COMPENSATION

The Company has a share-based incentive compensation plan, The Travelers Companies, Inc. Amended and Restated 2014 Stock Incentive Plan (the 2014 Incentive Plan), the purposes of which are to align the interests of the Company's non-employee directors, executive officers and other employees with those of the Company's shareholders and to attract and retain personnel by providing incentives in the form of share-based awards. The 2014 Incentive Plan permits grants of nonqualified stock options, incentive stock options, stock appreciation rights, restricted stock, restricted stock units, deferred stock, deferred stock units, performance awards and other share-based or share-denominated awards with respect to the Company's common stock. The Company has a policy of issuing new

shares to settle the exercise of stock option awards and the vesting of other equity awards.

13. SHARE-BASED INCENTIVE COMPENSATION (Continued)

In connection with the adoption of the 2014 Incentive Plan, The Travelers Companies, Inc. Amended and Restated 2004 Stock Incentive Plan, as amended (the 2004 Incentive Plan) was terminated, joining several other legacy share-based incentive compensation plans that had been terminated in prior years (together, the legacy plans). Outstanding grants were not affected by the termination of the legacy plans. The 2014 Incentive Plan is currently the only plan pursuant to which future stock-based awards may be granted.

The number of shares of the Company's common stock initially authorized for grant under the 2014 Incentive Plan was 10 million shares. In May 2017 and 2016, the Company's shareholders authorized an additional 2.5 million and 4.4 million shares of the Company's common stock, respectively, for grant under the 2014 Incentive Plan. The following are not counted towards the combined 16.9 million shares available and will be available for future grants under the 2014 Incentive Plan: (i) shares of common stock subject to awards that expire unexercised, that are forfeited, terminated or canceled, that are settled in cash or other forms of property, or otherwise do not result in the issuance of shares of common stock, in whole or in part; (ii) shares that are used to pay the exercise price of stock options and shares used to pay withholding taxes on awards generally; and (iii) shares purchased by the Company on the open market using cash option exercise proceeds; provided, however, that the increase in the number of shares of common stock available for grant pursuant to such market purchases shall not be greater than the number that could be repurchased at fair market value on the date of exercise of the stock option giving rise to such option proceeds. In addition, the 16.9 million shares authorized by shareholders for issuance under the 2014 Incentive Plan will be increased by any shares subject to awards under the 2004 Incentive Plan that were outstanding as of May 27, 2014 and subsequently expire, are forfeited, canceled, settled in cash or otherwise terminate without the issuance of shares.

The Company also has a compensation program for non-employee directors (the Director Compensation Program). Under the Director Compensation Program, non-employee directors' compensation consists of an annual retainer, a deferred stock award, committee chair fees and a lead director fee. Each non-employee director may choose to receive all or a portion of his or her annual retainer, committee chair fee and lead director fee in the form of cash or deferred stock units which vest upon grant. The annual deferred stock awards vest in full one day prior to the date of the Company's annual meeting of shareholders occurring in the year following the year of the grant date, subject to continued service. The deferred stock awards, including dividend equivalents, accumulate until distribution either in a lump sum six months after termination of service as a director or, if the director so elects, in annual installments beginning at least six months following termination of service as a director. The deferred stock units issued under the Director Compensation Program are awarded under the 2014 Incentive Plan.

Stock Option Awards

Stock option awards granted to eligible officers and key employees have a ten-year term. All stock options are granted with an exercise price equal to the closing price of the Company's common stock on the date of grant. The stock options granted generally vest upon meeting certain years of service criteria. Except as the Compensation Committee of the Board of Directors may allow in the future, stock options cannot be sold or transferred by the participant. Stock options outstanding under the 2014 Incentive Plan and the 2004 Incentive Plan generally vest three years after grant date (cliff vest).

The fair value of each option award is estimated on the date of grant by application of a variation of the Black-Scholes option pricing model using the assumptions noted in the following table. The expected term of newly granted stock options is the time to vest plus half the remaining time to expiration. This considers the vesting restriction and represents an even pattern of exercise behavior over the remaining term. The expected volatility assumption is based on the historical volatility of the Company's common stock for the same period as the estimated option term generally using the volatility of the week prior to the stock option grant. The expected dividend is based upon the Company's current quarter dividend annualized and assumed to be constant over the expected option term. The risk-free interest rate for each option is the interpolated market yield of a U.S. Treasury bill with a term comparable to the expected option term for the same week used for measuring volatility. The following table provides information about options granted:

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
13. SHARE-BASED INCENTIVE COMPENSATION (Continued)

(for the year ended December 31,)	2018	2017	2016
Assumptions used in estimating fair value of options on grant date			
Expected term of stock options	6 years	6 years	5 – 6 years
Expected volatility of Company's stock	14.94 %	16.50 %	15.14% – 16.80%
Weighted average volatility	14.94 %	16.50 %	16.79 %
Expected annual dividend per share	$2.88	$2.68	$2.44 – $2.68
Risk-free rate	2.68 %	2.08 %	1.36% – 2.23%
Additional information			
Weighted average grant-date fair value of options granted (per share)	$20.13	$16.15	$13.29
Total intrinsic value of options exercised during the year (in millions)	$67	$90	$167

A summary of stock option activity under the 2014 Incentive Plan and the legacy plans as of and for the year ended December 31, 2018 is as follows:

Stock Options	Number	Weighted Average Exercise Price	Weighted Average Contractual Life Remaining	Aggregate Intrinsic Value ($ in millions)
Outstanding, beginning of year	8,712,467	$ 97.45		
Original grants	1,632,361	140.85		
Exercised	(1,229,850)	83.74		
Forfeited or expired	(120,622)	117.39		
Outstanding, end of year	8,994,356	$ 106.93	6.2 years	$ 149
Vested at end of year [1]	5,861,909	$ 99.28	5.3 years	$ 134
Exercisable at end of year	3,889,013	$ 88.83	3.9 years	$ 123

(1) Represents awards for which the requisite service has been rendered, including those that are retirement eligible.

On February 5, 2019, the Company, under the 2014 Incentive Plan, granted 2,051,673 stock option awards with an exercise price of $126.18 per share. The fair value attributable to the stock option awards on the date of grant was $16.65 per share.

Restricted Stock Units, Deferred Stock Units and Performance Share Award Programs

The Company issues restricted stock unit awards to eligible officers and key employees under the Equity Awards program established pursuant to the 2014 Incentive Plan. A restricted stock unit represents the right to receive a share of common stock. These restricted stock unit awards are granted at market price, generally vest three years from the date of grant, do not have voting rights and the underlying shares of common stock are not issued until the vesting criteria is satisfied. In addition, members of the Company's Board of Directors can be issued deferred stock units from (i) an annual award; (ii) deferred compensation (in lieu of cash retainer, committee chair fees and lead director fees); and (iii) dividend equivalents earned on outstanding deferred compensation.

The Company also has a Performance Share Awards Program established pursuant to the 2004 Incentive Plan and which continues pursuant to the 2014 Incentive Plan. Under the program, the Company may issue performance share awards to certain employees of the Company who hold positions of Vice President (or its equivalent) or above. The performance share awards provide the recipient the right to earn shares of the Company's common stock based upon the Company's attainment of certain performance goals and the recipient meeting certain years of service criteria. The

performance goals for performance share awards are based on the Company's adjusted return on equity over a three-year performance period. Vesting of performance shares is contingent upon the Company attaining the relevant performance period minimum threshold return on equity and the recipient meeting certain

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
13. SHARE-BASED INCENTIVE COMPENSATION (Continued)

years of service criteria, generally three years for full vesting, subject to proration for certain termination conditions. If the performance period return on equity is below the minimum threshold, none of the performance shares will vest. If performance meets or exceeds the minimum performance threshold, a range of performance shares will vest (50% to 150% for awards granted in 2017, 2018 and 2019), depending on the actual return on equity attained.

The fair value of restricted stock units, deferred stock units and performance shares is measured at the market price of the Company stock at date of grant. Under terms of the 2014 Incentive Plan, holders of deferred stock units and performance shares may receive dividend equivalents.

The total fair value of shares that vested during the years ended December 31, 2018, 2017 and 2016 was $135 million, $166 million and $175 million, respectively.

A summary of restricted stock units, deferred stock units and performance share activity under the 2014 Incentive Plan and the legacy plans as of and for the year ended December 31, 2018 is as follows:

	Restricted and Deferred Stock Units		Performance Shares	
Other Equity Instruments	Number	Weighted Average Grant-Date Fair Value	Number	Weighted Average Grant-Date Fair Value
Nonvested, beginning of year	1,286,970	$ 111.74	787,732	$ 112.40
Granted	559,807	139.20	319,408	140.85
Vested	(554,640) (1)	114.77	(385,604) (2)	106.06
Forfeited	(75,461)	122.29	(68,593)	123.01
Performance-based adjustment	—	—	31,946 (3)	126.29
Nonvested, end of year	1,216,676 (4)	$ 122.34	684,889	$ 128.83

(1) Represents awards for which the requisite service has been rendered.

(2) Reflects the number of performance shares attributable to the performance goals attained over the completed performance period (three years) and for which service conditions have been met.

(3) Represents the current year change in estimated performance shares to reflect the attainment of performance goals for the awards that were granted in each of the years 2016 through 2018.

(4) 95,953 shares of restricted common stock were also issued outside of the 2014 Incentive Plan in 2017 in connection with the acquisition of Simply Business, of which 92,995 shares remain unvested and are not included in this table. See note 9.

In addition to the nonvested shares presented in the above table, there are related nonvested dividend equivalent shares. The number of nonvested dividend equivalent shares related to deferred stock units was 379 at the beginning of the year and 329 at the end of the year and the number of nonvested dividend equivalent shares related to performance shares was 26,584 at the beginning of the year and 24,876 at the end of the year. The dividend equivalent shares are subject to the same vesting terms as the deferred stock units and performance shares.

On February 5, 2019, the Company, under the 2014 Incentive Plan, granted 929,391 common stock awards in the form of restricted stock units, deferred stock units and performance share awards to participating officers, non-employee directors and other key employees. The restricted stock units and deferred stock units totaled 557,637 shares while the performance share awards totaled 371,754 shares. The fair value per share attributable to the common stock awards on the date of grant was $126.18.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. SHARE-BASED INCENTIVE COMPENSATION (Continued)

Share-Based Compensation Cost Recognition

The amount of compensation cost for awards subject to a service condition is based on the number of shares expected to be issued and is recognized over the time period for which service is to be provided (requisite service period). Awards granted to retiree-eligible employees or to employees who become retiree-eligible before an award's vesting date are considered to have met the requisite service condition. The compensation cost for awards subject to a performance condition is based upon the probable outcome of the performance condition, which on the grant date reflects an estimate of attaining 100% of the performance shares granted. The compensation cost reflects an estimated annual forfeiture rate from 3.5% to 4.5% over the requisite service period of the awards. That estimate is revised if subsequent information indicates that the actual number of instruments expected to vest is likely to differ from previous estimates. Compensation costs for awards are recognized on a straight-line basis over the requisite service period. For awards that have graded vesting terms, the compensation cost is recognized on a straight-line basis over the requisite service period for each separate vesting portion of the award as if the award was, in substance, multiple awards. The total compensation cost for all share-based incentive compensation awards recognized in earnings for the years ended December 31, 2018, 2017 and 2016 was $140 million, $136 million and $155 million, respectively. Included in these amounts are compensation cost adjustments of $3 million, $3 million and $11 million, for the years ended December 31, 2018, 2017 and 2016, respectively, that reflected the cost associated with the updated estimate of performance shares due to attaining certain performance levels from the date of the initial grant of the performance awards. The related tax benefits recognized in earnings were $26 million, $45 million and $52 million for the years ended December 31, 2018, 2017 and 2016, respectively.

At December 31, 2018, there was $141 million of total unrecognized compensation cost related to all nonvested share-based incentive compensation awards. This includes stock options, restricted and deferred stock units and performance shares granted under the 2014 Incentive Plan and restricted common stock issued in connection with a 2017 business acquisition. The unrecognized compensation cost is expected to be recognized over a weighted-average period of 1.8 years. Cash received from the exercise of employee stock options under share-based compensation plans totaled $132 million and $173 million in 2018 and 2017, respectively. The tax benefit for tax deductions from employee stock options exercised during 2018 and 2017 totaled $14 million and $31 million, respectively.

14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS

The Company sponsors a qualified non-contributory defined benefit pension plan (the qualified domestic pension plan), which covers substantially all U.S. domestic employees and provides benefits under a cash balance formula, except that certain limited groups of legacy participants are covered by a prior traditional final average pay formula. In addition, the Company sponsors a nonqualified defined benefit pension plan which covers certain highly-compensated employees, pension plans for employees of its foreign subsidiaries, and a postretirement health and life insurance benefit plan for employees satisfying certain age and service requirements and for certain retirees.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

Obligations and Funded Status

The following tables summarize the funded status, obligations and amounts recognized in the consolidated balance sheet for the Company's benefit plans. The Company uses a December 31 measurement date for its pension and postretirement benefit plans.

(at and for the year ended December 31, in millions)	Qualified Domestic Pension Plan		Nonqualified and Foreign Pension Plans		Total	
	2018	2017	2018	2017	2018	2017
Change in projected benefit obligation:						
Benefit obligation at beginning of year	$3,679	$3,367	$ 230	$ 225	$3,909	$3,592
Benefits earned	126	112	7	7	133	119
Interest cost on benefit obligation	119	120	7	7	126	127
Actuarial (gain) loss	(273)	258	(11)	1	(284)	259
Benefits paid	(207)	(178)	(12)	(9)	(219)	(187)
Settlement	—	—	—	(11)	—	(11)
Foreign currency exchange rate change	—	—	(6)	10	(6)	10
Benefit obligation at end of year	$3,444	$3,679	$ 215	$ 230	$3,659	$3,909
Change in plan assets:						
Fair value of plan assets at beginning of year	$3,957	$3,387	$ 113	$ 106	$4,070	$3,493
Actual return on plan assets	(179)	448	(1)	11	(180)	459
Company contributions	200	300	10	7	210	307
Benefits paid	(207)	(178)	(12)	(9)	(219)	(187)
Settlement	—	—	—	(12)	—	(12)
Foreign currency exchange rate change	—	—	(7)	10	(7)	10
Fair value of plan assets at end of year	3,771	3,957	103	113	3,874	4,070
Funded status of plan at end of year	$327	$278	$ (112)	$ (117)	$215	$161
Amounts recognized in the consolidated balance sheet consist of:						
Accrued over-funded benefit plan assets	$327	$278	$ 4	$ 6	$331	$284
Accrued under-funded benefit plan liabilities	—	—	(116)	(123)	(116)	(123)
Total	$327	$278	$ (112)	$ (117)	$215	$161
Amounts recognized in accumulated other comprehensive income consist of:						
Net actuarial loss	$1,113	$1,035	$ 36	$ 47	$1,149	$1,082
Prior service benefit	(5)	(6)	1	—	(4)	(6)
Total	$1,108	$1,029	$ 37	$ 47	$1,145	$1,076

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

	Postretirement Benefit Plans	
(at and for the year ended December 31, in millions)	2018	2017
Change in projected benefit obligation:		
Benefit obligation at beginning of year	$225	$214
Benefits earned	—	—
Interest cost on benefit obligation	7	7
Actuarial (gain) loss	(18)	13
Benefits paid	(10)	(10)
Foreign currency exchange rate change	(1)	1
Benefit obligation at end of year	$203	$225
Change in plan assets:		
Fair value of plan assets at beginning of year	$13	$14
Actual return on plan assets	—	—
Company contributions	9	9
Benefits paid	(10)	(10)
Fair value of plan assets at end of year	12	13
Funded status of plan at end of year	$(191)	$(212)
Amounts recognized in the consolidated balance sheet consist of:		
Accrued under-funded benefit plan liability	$(191)	$(212)
Amounts recognized in accumulated other comprehensive income consist of:		
Net actuarial gain	$(17)	$—
Prior service benefit	(25)	(28)
Total	$(42)	$(28)

The total accumulated benefit obligation for the Company's defined benefit pension plans was $3.53 billion and $3.77 billion at December 31, 2018 and 2017, respectively. The qualified domestic pension plan accounted for $3.32 billion and $3.55 billion of the total accumulated benefit obligation at December 31, 2018 and 2017, respectively, whereas the nonqualified and foreign plans accounted for $0.21 billion and $0.22 billion of the total accumulated benefit obligation at December 31, 2018 and 2017, respectively.

For pension plans with a projected benefit obligation in excess of plan assets, the aggregate projected benefit obligation was $203 million and $183 million at December 31, 2018 and 2017, respectively, and the aggregate plan assets were $87 million and $60 million at December 31, 2018 and 2017, respectively. For pension plans with an accumulated benefit obligation in excess of plan assets, the aggregate accumulated benefit obligation was $195 million and $174 million at December 31, 2018 and 2017, respectively, and the aggregate plan assets were $87 million and $60 million at December 31, 2018 and 2017, respectively. For postretirement benefit plans with an accumulated benefit obligation in excess of plan assets, the aggregate accumulated benefit obligation was $203 million and $225 million at December 31, 2018 and 2017, respectively, and the aggregate plan assets were $12 million and $13 million at December 31, 2018 and 2017, respectively.

The $273 million actuarial gain experienced in 2018 for the qualified domestic pension plan was largely driven by the increase in the assumed discount rate from the prior year that was used to determine the projected benefit obligation at December 31, 2018. The $258 million actuarial loss experienced in 2017 for the qualified domestic pension plan was largely driven by the decrease in the assumed discount rate from the prior year that was used to determine the projected benefit obligation at December 31, 2017.

The Company has discretion regarding whether to provide additional funding and when to provide such funding to its qualified domestic pension plan. In 2018, 2017 and 2016, there were no required contributions to the qualified domestic pension plan. In 2018, 2017 and 2016, the Company voluntarily made contributions totaling $200 million,

$300 million and $200 million, respectively, to the qualified domestic pension plan. There is no required contribution to the qualified domestic pension plan

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

during 2019, and the Company has not determined whether or not additional funding will be made during 2019. With respect to the Company's foreign pension plans, there are no significant required contributions in 2019.

The following table summarizes the components of net periodic benefit cost and other amounts recognized in other comprehensive income related to the benefit plans.

	Pension Plans			Postretirement Benefit Plans		
(for the year ended December 31, in millions)	2018	2017	2016	2018	2017	2016
Net Periodic Benefit Cost:						
Service cost	$133	$119	$118	$ —	$ —	$ —
Non-service cost:						
Interest cost on benefit obligation	126	127	122	7	7	8
Expected return on plan assets	(264)	(240)	(230)	—	—	—
Settlement	—	3	1	—	—	—
Amortization of unrecognized:						
Prior service benefit	(1)	(1)	(1)	(4)	(4)	(3)
Net actuarial loss	91	85	66	—	—	—
Total non-service cost (benefit)	(48)	(26)	(42)	3	3	5
Net periodic benefit cost	85	93	76	3	3	5
Other Changes in Benefit Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income:						
Prior service benefit	—	—	—	—	—	—
Net actuarial loss (gain)	160	40	66	(18)	13	(17)
Foreign currency exchange rate change	(1)	2	(2)	—	(1)	1
Settlement	—	(2)	(1)	—	—	—
Amortization of prior service benefit	1	1	1	4	4	3
Amortization of net actuarial loss	(91)	(85)	(66)	—	—	—
Total other changes recognized in other comprehensive income	69	(44)	(2)	(14)	16	(13)
Total other changes recognized in net periodic benefit cost and other comprehensive income	$154	$49	$74	$ (11)	$ 19	$ (8)

The following table indicates the line items in which the respective service costs and non-service costs are presented in the consolidated statement of income for the years ended December 31, 2018, 2017 and 2016.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

	Pension Plans			Postretirement Benefit Plans		
(for the year ended December 31, in millions)	2018	2017	2016	2018	2017	2016
Service Cost:						
Net investment income	$1	$—	$—	$ —	$ —	$ —
Claims and claim adjustment expenses	54	48	48	—	$ —	—
General and administrative expenses	78	71	70	—	—	—
Total service cost	133	119	118	—	—	—
Non-Service Cost:						
Claims and claim adjustment expenses	(19)	(11)	(18)	1	1	2
General and administrative expenses	(29)	(15)	(24)	2	2	3
Total non-service cost (benefit)	(48)	(26)	(42)	3	3	5
Net periodic benefit cost	$85	$93	$76	$ 3	$ 3	$ 5

Assumptions
The following table summarizes assumptions used with regard to the Company’s qualified and nonqualified domestic pension plans and the domestic postretirement benefit plans.

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

(at and for the year ended December 31,)	2018	2017
Assumptions used to determine benefit obligations		
Discount rate:		
Qualified domestic pension plan	4.39 %	3.71 %
Nonqualified domestic pension plan	4.33 %	3.66 %
Domestic postretirement benefit plan	4.26 %	3.60 %
Cash balance interest crediting rate	4.01 %	4.01 %
Future compensation increase rate	4.00 %	4.00 %
Assumptions used to determine net periodic benefit cost		
Discount rate:		
Qualified domestic pension plan:		
Service cost	3.87 %	4.52 %
Interest cost	3.34 %	3.55 %
Nonqualified domestic pension plan:		
Service cost	3.73 %	4.24 %
Interest cost	3.26 %	3.43 %
Domestic postretirement benefit plan:		
Interest cost	3.21 %	3.42 %
Expected long-term rate of return on assets:		
Pension plan	7.00 %	7.00 %
Postretirement benefit plan	4.00 %	4.00 %
Assumed health care cost trend rates		
Following year:		
Medical (before age 65)	7.50 %	7.50 %
Medical (age 65 and older)	8.75 %	8.75 %
Rate to which the cost trend rate is assumed to decline (ultimate trend rate)	4.50 %	4.50 %
Year that the rate reaches the ultimate trend rate:		
Medical (before age 65)	2026	2026
Medical (age 65 and older)	2026	2026

The discount rate assumption used to determine the benefit obligation is based on a yield-curve approach. Under this approach, individual spot rates from the yield curve of a hypothetical portfolio of high quality fixed maturity corporate bonds (rated Aa) available at the year-end valuation date, for which the timing and amount of cash outflows correspond with the timing and amount of the estimated benefit payouts of the Company’s benefit plan, are applied to expected future benefits payments in measuring the projected benefit obligation. The discount rate assumption used to determine benefit obligations disclosed above represents the weighted average of the individual spot rates.

The discount rate assumption used to determine the net periodic benefit cost is the single weighted average discount rate derived from the yield curve used to measure the benefit obligation at the beginning of the year.

In choosing the expected long-term rate of return on plan assets, the Company selected the rate that was set as the return objective by the Company’s Benefit Plans Investment Committee, which had considered the historical returns of equity and fixed maturity markets in conjunction with prevailing economic and financial market conditions.

The assumptions made for the Company’s foreign pension and foreign postretirement benefit plans are not materially different from those of the Company’s qualified domestic pension plan and the domestic postretirement benefit plan.

Plan Assets

The qualified domestic pension plan assets are invested for the exclusive benefit of the plan participants and beneficiaries and are intended, over time, to satisfy the benefit obligations under the plan. Risk tolerance is established through consideration of plan liabilities, plan funded status and corporate financial position. The asset mix guidelines have been established and are reviewed quarterly. These guidelines are intended to serve as tools to facilitate the investment of plan assets to maximize long-term total return and the ongoing oversight of the plan's investment performance. Investment risk is measured and monitored on an ongoing basis through daily and monthly investment portfolio reviews, annual liability measurements and periodic asset/liability studies.

The Company's overall investment strategy for the qualified domestic pension plan is to achieve a mix of approximately 85% to 90% of investments for long-term growth and 10% to 15% for near-term benefit payments with a diversification of asset types, fund strategies and fund managers. The current target allocations for plan assets are 55% to 65% equity securities and 20% to 40% fixed income securities, with the remainder allocated to short-term securities. Equity securities primarily include investments in large, medium and small-cap companies primarily located in the United States. Fixed income securities include corporate bonds of companies from diversified industries, mortgage-backed securities, U.S. Treasury securities and debt securities issued by foreign governments. Assets of the Company's foreign pension plans are not significant.

Fair Value Measurement — Pension Plans and Other Postretirement Benefit Assets

For a discussion of the methods employed by the Company to measure the fair value of invested assets, see note 4. The following discussion of fair value measurements applies exclusively to the Company's pension plans and other postretirement benefit assets.

Fair value estimates for equity and bond mutual funds held by the pension plans reflect prices received from an external pricing service that are based on observable market transactions. These estimates are primarily included in Level 1.

Short-term securities are carried at fair value which approximates cost plus accrued interest or amortized discount. The fair value or market value of these is periodically compared to this amortized cost and is based on significant observable inputs as determined by an external pricing service. Accordingly, the estimates of fair value for such short-term securities, other than U.S. Treasury securities and money market mutual funds, provided by an external pricing service are included in the amount disclosed in Level 2 of the hierarchy. The estimated fair value of U.S. Treasury securities and money market mutual funds is included in the amount disclosed in Level 1 as the estimates are based on unadjusted market prices.

Fair Value Hierarchy — Pension Plans

The following tables present the level within the fair value hierarchy at which the financial assets of the Company's pension plans are measured on a recurring basis.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

(at December 31, 2018, in millions)	Total	Level 1	Level 2	Level 3
Invested assets:				
Fixed maturities				
Obligations of states, municipalities and political subdivisions	$3	$—	$3	$ —
Debt securities issued by foreign governments	27	—	27	—
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	30	—	30	—
All other corporate bonds	712	—	712	—
Total fixed maturities	772	—	772	—
Mutual funds				
Equity mutual funds	1,288	1,282	6	—
Bond mutual funds	760	757	3	—
Total mutual funds	2,048	2,039	9	—
Equity securities	783	783	—	—
Other investments	1	—	—	1
Cash and short-term securities				
U.S. Treasury securities	30	30	—	—
Other	240	19	221	—
Total cash and short-term securities	270	49	221	—
Total	$3,874	$2,871	$1,002	$ 1

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

(at December 31, 2017, in millions)	Total	Level 1	Level 2	Level 3
Invested assets:				
Fixed maturities				
Obligations of states, municipalities and political subdivisions	$3	$—	$ 3	$ —
Debt securities issued by foreign governments	16	—	16	—
Mortgage-backed securities, collateralized mortgage obligations and pass-through securities	10	—	10	—
All other corporate bonds	514	—	514	—
Total fixed maturities	543	—	543	—
Mutual funds				
Equity mutual funds	1,335	1,328	7	—
Bond mutual funds	822	819	3	—
Total mutual funds	2,157	2,147	10	—
Equity securities	883	882	1	—
Other investments	1	—	—	1
Cash and short-term securities				
U.S. Treasury securities	241	241	—	—
Money market mutual funds	27	27	—	—
Other	218	27	191	—
Total cash and short-term securities	486	295	191	—
Total	$4,070	$3,324	$ 745	$ 1

Other Postretirement Benefit Plans

The Company's overall investment strategy is to achieve a mix of approximately 35% to 65% of investments for long-term growth and 35% to 60% for near-term insurance payments with a wide diversification of asset types, fund strategies and fund managers. The current target allocations for plan assets are 25% to 75% fixed income securities, with the remainder allocated to short-term securities. Fixed income securities include corporate bonds of companies from diversified industries, mortgage-backed securities and U.S. Treasuries.

Fair Value — Other Postretirement Benefit Plans

The Company's other postretirement benefit plans had financial assets of $12 million and $13 million at December 31, 2018 and 2017, respectively, which are measured at fair value on a recurring basis. The assets are primarily corporate bonds and short-term securities and categorized as level 2 in the fair value hierarchy.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. PENSION PLANS, RETIREMENT BENEFITS AND SAVINGS PLANS (Continued)

Estimated Future Benefit Payments

The following table presents the estimated benefits expected to be paid by the Company's pension and postretirement benefit plans for the next ten years (reflecting estimated future employee service).

	Benefits Expected to be Paid	
(in millions)	Pension Plans	Postretirement Benefit Plans
2019	$ 239	$ 13
2020	246	14
2021	255	15
2022	260	15
2023	268	15
2024 through 2028	1,361	72

Savings Plan

The Company has a savings plan, The Travelers 401(k) Savings Plan (the Savings Plan), in which substantially all U.S. domestic Company employees are eligible to participate. Under the Savings Plan, the Company matches employee contributions up to 5% of eligible pay, with a maximum annual match of $6,500 which becomes 100% vested after three years of service. The Company's matching contribution is made in cash and invested according to the employee's current investment elections and can be reinvested into other investment options in accordance with the terms of the Savings Plan. The Company's non-U.S. employees participate in separate savings plans. The total expense related to all of the savings plans was $118 million, $119 million and $114 million for the years ended December 31, 2018, 2017 and 2016, respectively.

All common shares held by the Savings Plan are considered outstanding for basic and diluted EPS computations and dividends paid on all shares are charged to retained earnings.

15. LEASES

Rent expense was $185 million, $188 million and $197 million in 2018, 2017 and 2016, respectively.

Future minimum annual rental payments under noncancellable operating leases for 2019, 2020, 2021, 2022 and 2023 are $127 million, $105 million, $89 million, $61 million and $41 million, respectively, and $77 million for 2024 and thereafter. Future sublease rental income aggregating approximately $1 million will partially offset these commitments.

16. CONTINGENCIES, COMMITMENTS AND GUARANTEES

Contingencies

The major pending legal proceedings, other than ordinary routine litigation incidental to the business, to which the Company or any of its subsidiaries is a party or to which any of the Company's properties is subject are described below.

Asbestos and Environmental Claims and Litigation

In the ordinary course of its insurance business, the Company has received and continues to receive claims for insurance arising under policies issued by the Company asserting alleged injuries and damages from asbestos- and environmental-related exposures that are the subject of related coverage litigation. The Company is defending asbestos- and environmental-related litigation vigorously and believes that it has meritorious defenses; however, the outcomes of these disputes are uncertain. In this regard, the Company employs dedicated specialists and comprehensive resolution strategies to manage asbestos and environmental loss exposure, including settling litigation under appropriate circumstances. Currently, it is not possible to predict legal outcomes and their impact on future loss development for claims and litigation relating to asbestos and environmental claims. Any such development could be affected by future court decisions and interpretations, as well as future changes, if any, in applicable

legislation. Because of these uncertainties, additional liabilities may arise for amounts in excess of the Company's current insurance reserves. In addition, the Company's estimate of ultimate claims and claim adjustment expenses may change. These additional liabilities or changes in estimates, or a range of either, cannot now be reasonably estimated and could result in income statement charges that could be material to the Company's results of operations in future periods.

Other Proceedings Not Arising Under Insurance Contracts or Reinsurance Agreements

The Company is involved in other lawsuits, including lawsuits alleging extra-contractual damages relating to insurance contracts or reinsurance agreements, that do not arise under insurance contracts or reinsurance agreements. The legal costs associated with such lawsuits are expensed in the period in which the costs are incurred. Based upon currently available information, the Company does not believe it is reasonably possible that any such lawsuit or related lawsuits would be material to the Company's results of operations or would have a material adverse effect on the Company's financial position or liquidity.

Gain Contingency

On August 17, 2010, in a reinsurance dispute in New York state court captioned United States Fidelity & Guaranty Company v. American Re-Insurance Company, et al., the trial court granted summary judgment for United States Fidelity and Guaranty Company (USF&G), a subsidiary of the Company, and denied summary judgment for the reinsurers. The Court of Appeals largely affirmed the entry of summary judgment, but remanded two discrete issues for trial.

On November 7, 2016, the Company agreed to a settlement with one of the three defendants then remaining in this dispute. The Company received payment under the settlement in the fourth quarter of 2016 and, as a result, recognized a $126 million pre-tax ($82 million after-tax) gain in the fourth quarter, which was included in "other revenues" in the consolidated statement of income for the year ended December 31, 2016. In connection with that settlement, the reinsurance recoverable balance related to this case was reduced from approximately $238 million to approximately $31 million in the Company's consolidated balance sheet. At March 31, 2017, the claim related to the remaining defendants totaled $71 million, comprising the $31 million of reinsurance recoverable plus interest amounting to $40 million as of that date. The interest was treated for accounting purposes as a gain contingency in accordance with FASB Topic 450, Contingencies, and accordingly was not recognized in the Company's consolidated financial statements.

On May 1, 2017, the Company agreed to a settlement of this dispute with the two remaining defendants, along with the settlement of several other disputes with these same parties. As a result of the settlement of all of these matters, the Company recorded an immaterial gain in "other revenues" in its consolidated statement of income for the three months ended June 30, 2017, and the reinsurance recoverable of $31 million in the Company's balance sheet was fully satisfied.

Other Commitments and Guarantees

Commitments

Investment Commitments — The Company has unfunded commitments to private equity limited partnerships and real estate partnerships in which it invests. These commitments totaled $1.60 billion and $1.56 billion at December 31, 2018 and 2017, respectively.

Guarantees

In the ordinary course of selling businesses to third parties, the Company has agreed to indemnify purchasers for losses arising out of breaches of representations and warranties with respect to the businesses being sold, covenants and obligations of the Company and/or its subsidiaries and, in certain cases, obligations arising from certain liabilities. Such indemnification provisions generally are applicable from the closing date to the expiration of the relevant statutes of limitations, although, in some cases, there may be agreed upon term limitations or no term

limitations. Certain of these contingent obligations are subject to deductibles which have to be incurred by the obligee before the Company is obligated to make payments. The maximum amount of the Company's contingent obligation for indemnifications related to the sale of businesses that are quantifiable was $358 million at December 31, 2018, of which $2 million was recognized on the balance sheet at that date.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. CONTINGENCIES, COMMITMENTS AND GUARANTEES (Continued)

The Company also has contingent obligations for guarantees related to certain investments, third-party loans related to certain investments, certain insurance policy obligations of former insurance subsidiaries and various other indemnifications. The Company also provides standard indemnifications to service providers in the normal course of business. The indemnification clauses are often standard contractual terms. The maximum amount of the Company's obligation for guarantees of certain investments and third-party loans related to certain investments that are quantifiable was $45 million at December 31, 2018, approximately $23 million of which is indemnified by a third party. The maximum amount of the Company's obligation related to the guarantee of certain insurance policy obligations of a former insurance subsidiary was $480 million at December 31, 2018, all of which is indemnified by a third party.

Certain of the guarantees and indemnifications described above have no stated or notional amounts or limitation to the maximum potential future payments, and, accordingly, the Company is unable to provide an estimate of the maximum potential payments for such arrangements.

17. NONCASH INVESTING AND FINANCING ACTIVITIES

There were no material noncash financing or investing activities during the years ended December 31, 2018, 2017 and 2016.

18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES

The following consolidating financial statements of the Company have been prepared pursuant to Rule 3-10 of Regulation S-X. These consolidating financial statements have been prepared from the Company's financial information on the same basis of accounting as the consolidated financial statements. The Travelers Companies, Inc. (excluding its subsidiaries, TRV) has fully and unconditionally guaranteed certain debt obligations of Travelers Property Casualty Corp. (TPC) and Travelers Insurance Group Holdings, Inc. (TIGHI), which totaled $700 million at December 31, 2018.

Prior to the merger of TPC and The St. Paul Companies, Inc. in 2004, TPC fully and unconditionally guaranteed the payment of all principal, premiums, if any, and interest on certain debt obligations of its wholly-owned subsidiary, TIGHI. Concurrent with the merger, TRV fully and unconditionally assumed such guarantee obligations of TPC. TPC is deemed to have no assets or operations independent of TIGHI. Consolidating financial information for TIGHI has not been presented herein because such financial information would be substantially the same as the financial information provided for TPC.

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF INCOME (Unaudited)
For the year ended December 31, 2018

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Revenues					
Premiums	$18,508	$ 8,551	$—	$ —	$ 27,059
Net investment income	1,704	738	32	—	2,474
Fee income	432	—	—	—	432
Net realized investment gains (losses) [1]	118	9	(13)	—	114
Other revenues	96	112	—	(5)	203
Total revenues	20,858	9,410	19	(5)	30,282
Claims and expenses					
Claims and claim adjustment expenses	12,344	5,947	—	—	18,291
Amortization of deferred acquisition costs	2,972	1,409	—	—	4,381
General and administrative expenses	2,947	1,335	20	(5)	4,297
Interest expense	48	—	304	—	352
Total claims and expenses	18,311	8,691	324	(5)	27,321
Income (loss) before income taxes	2,547	719	(305)	—	2,961
Income tax expense (benefit)	437	115	(114)	—	438
Net income of subsidiaries	—	—	2,714	(2,714)	—
Net income	$2,110	$ 604	$2,523	$ (2,714)	$ 2,523

(1) Total other-than-temporary impairments (OTTI) for the year ended December 31, 2018, and the amounts comprising total OTTI that were recognized in net realized investment gains (losses) and in other comprehensive income (OCI), were as follows:

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Total OTTI losses	$(1)	$ —	$ —	$ —	$ (1)
OTTI losses recognized in net realized investment gains (losses)	$(1)	$ —	$ —	$ —	$ (1)
OTTI losses recognized in OCI	$—	$ —	$ —	$ —	$ —

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF INCOME (Unaudited)
For the year ended December 31, 2017

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Revenues					
Premiums	$17,562	$ 8,121	$—	$ —	$ 25,683
Net investment income	1,627	759	24	(13)	2,397
Fee income	447	—	—	—	447
Net realized investment gains [1]	19	131	66	—	216
Other revenues	101	68	—	(10)	159
Total revenues	19,756	9,079	90	(23)	28,902
Claims and expenses					
Claims and claim adjustment expenses	11,735	5,732	—	—	17,467
Amortization of deferred acquisition costs	2,820	1,346	—	—	4,166
General and administrative expenses	2,906	1,249	25	(10)	4,170
Interest expense	48	—	321	—	369
Total claims and expenses	17,509	8,327	346	(10)	26,172
Income (loss) before income taxes	2,247	752	(256)	(13)	2,730
Income tax expense (benefit)	519	290	(130)	(5)	674
Net income of subsidiaries	—	—	2,190	(2,190)	—
Net income	$1,728	$ 462	$2,064	$ (2,198)	$ 2,056

(1) Total other-than-temporary impairments (OTTI) for the year ended December 31, 2017, and the amounts comprising total OTTI that were recognized in net realized investment gains and in other comprehensive income (OCI), were as follows:

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Total OTTI losses	$(4)	$ (9)	$ —	$ —	$ (13)
OTTI losses recognized in net realized investment gains	$(5)	$ (9)	$ —	$ —	$ (14)
OTTI gains recognized in OCI	$1	$ —	$ —	$ —	$ 1

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF INCOME (Unaudited)
For the year ended December 31, 2016

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Revenues					
Premiums	$16,788	$ 7,746	$—	$ —	$ 24,534
Net investment income	1,569	720	13	—	2,302
Fee income	458	—	—	—	458
Net realized investment gains (losses) (1)	30	39	(1)	—	68
Other revenues	248	36	—	(21)	263
Total revenues	19,093	8,541	12	(21)	27,625
Claims and expenses					
Claims and claim adjustment expenses	10,232	4,838	—	—	15,070
Amortization of deferred acquisition costs	2,702	1,283	—	—	3,985
General and administrative expenses	2,928	1,242	5	(21)	4,154
Interest expense	48	—	315	—	363
Total claims and expenses	15,910	7,363	320	(21)	23,572
Income (loss) before income taxes	3,183	1,178	(308)	—	4,053
Income tax expense (benefit)	999	208	(168)	—	1,039
Net income of subsidiaries	—	—	3,154	(3,154)	—
Net income	$2,184	$ 970	$3,014	$ (3,154)	$ 3,014

(1) Total other-than-temporary impairments (OTTI) for the year ended December 31, 2016, and the amounts comprising total OTTI that were recognized in net realized investment gains (losses) and in other comprehensive income (OCI), were as follows:

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Total OTTI losses	$(19)	$ (20)	$(1)	$ —	$ (40)
OTTI losses recognized in net realized investment gains (losses)	$(13)	$ (15)	$(1)	$ —	$ (29)
OTTI losses recognized in OCI	$(6)	$ (5)	$—	$ —	$ (11)

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (Unaudited)
For the year ended December 31, 2018

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Net income	$2,110	$ 604	$2,523	$ (2,714)	$ 2,523
Other comprehensive loss:					
Changes in net unrealized gains on investment securities:					
Having no credit losses recognized in the consolidated statement of income	(1,028)	(461)	—	—	(1,489)
Having credit losses recognized in the consolidated statement of income	(20)	(7)	—	—	(27)
Net changes in benefit plan assets and obligations	1	(4)	(53)	—	(56)
Net changes in unrealized foreign currency translation	(144)	(103)	—	—	(247)
Other comprehensive loss before income taxes and other comprehensive loss of subsidiaries	(1,191)	(575)	(53)	—	(1,819)
Income tax benefit	(231)	(101)	(17)	—	(349)
Other comprehensive loss, net of taxes, before other comprehensive loss of subsidiaries	(960)	(474)	(36)	—	(1,470)
Other comprehensive loss of subsidiaries	—	—	(1,434)	1,434	—
Other comprehensive loss	(960)	(474)	(1,470)	1,434	(1,470)
Comprehensive income	$1,150	$ 130	$1,053	$ (1,280)	$ 1,053

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (Unaudited)
For the year ended December 31, 2017

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Net income	$1,728	$ 462	$2,064	$ (2,198)	$ 2,056
Other comprehensive income (loss):					
Changes in net unrealized gains on investment securities:					
Having no credit losses recognized in the consolidated statement of income	313	25	(44)	—	294
Having credit losses recognized in the consolidated statement of income	6	2	—	—	8
Net changes in benefit plan assets and obligations	(1)	8	22	—	29
Net changes in unrealized foreign currency translation	83	108	—	—	191
Other comprehensive income (loss) before income taxes and other comprehensive income of subsidiaries	401	143	(22)	—	522
Income tax expense	98	10	2	—	110
Other comprehensive income (loss), net of taxes, before other comprehensive income of subsidiaries	303	133	(24)	—	412
Other comprehensive income of subsidiaries	—	—	436	(436)	—
Other comprehensive income	303	133	412	(436)	412
Comprehensive income	$2,031	$ 595	$2,476	$ (2,634)	$ 2,468

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF COMPREHENSIVE INCOME (Unaudited)
For the year ended December 31, 2016

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Net income	$2,184	$ 970	$3,014	$ (3,154)	$ 3,014
Other comprehensive loss:					
Changes in net unrealized gains on investment securities:					
Having no credit losses recognized in the consolidated statement of income	(696)	(198)	11	—	(883)
Having credit losses recognized in the consolidated statement of income	11	10	—	—	21
Net changes in benefit plan assets and obligations	25	11	(20)	—	16
Net changes in unrealized foreign currency translation	73	(114)	—	—	(41)
Other comprehensive loss before income taxes and other comprehensive loss of subsidiaries	(587)	(291)	(9)	—	(887)
Income tax benefit	(222)	(66)	(1)	—	(289)
Other comprehensive loss, net of taxes, before other comprehensive loss of subsidiaries	(365)	(225)	(8)	—	(598)
Other comprehensive loss of subsidiaries	—	—	(590)	590	—
Other comprehensive loss	(365)	(225)	(598)	590	(598)
Comprehensive income	$1,819	$ 745	$2,416	$ (2,564)	$ 2,416

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING BALANCE SHEET (Unaudited)
At December 31, 2018

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Assets					
Fixed maturities, available for sale, at fair value (amortized cost $63,601)	$43,683	$ 19,697	$84	$ —	$ 63,464
Equity securities, at fair value (cost $382)	105	92	171	—	368
Real estate investments	2	902	—	—	904
Short-term securities	1,855	759	1,371	—	3,985
Other investments	2,746	810	1	—	3,557
Total investments	48,391	22,260	1,627	—	72,278
Cash	181	192	—	—	373
Investment income accrued	434	187	3	—	624
Premiums receivable	5,089	2,417	—	—	7,506
Reinsurance recoverables	5,904	2,466	—	—	8,370
Ceded unearned premiums	522	56	—	—	578
Deferred acquisition costs	1,930	190	—	—	2,120
Deferred taxes	167	302	(24)	—	445
Contractholder receivables	3,867	918	—	—	4,785
Goodwill	2,578	1,368	—	(9)	3,937
Other intangible assets	224	121	—	—	345
Investment in subsidiaries	—	—	26,993	(26,993)	—
Other assets	2,220	15	669	(32)	2,872
Total assets	$71,507	$ 30,492	$29,268	$ (27,034)	$ 104,233
Liabilities					
Claims and claim adjustment expense reserves	$34,093	$ 16,575	$—	$ —	$ 50,668
Unearned premium reserves	9,414	4,141	—	—	13,555
Contractholder payables	3,867	918	—	—	4,785
Payables for reinsurance premiums	169	120	—	—	289
Debt	693	32	5,871	(32)	6,564
Other liabilities	4,133	849	496	—	5,478
Total liabilities	52,369	22,635	6,367	(32)	81,339
Shareholders' equity					
Common stock (1,750.0 shares authorized; 263.7 shares issued and 263.6 shares outstanding)	—	401	23,144	(401)	23,144
Additional paid-in capital	11,634	7,023	—	(18,657)	—
Retained earnings	8,065	879	35,211	(8,951)	35,204
Accumulated other comprehensive loss	(561)	(446)	(1,859)	1,007	(1,859)
Treasury stock, at cost (510.9 shares)	—	—	(33,595)	—	(33,595)
Total shareholders' equity	19,138	7,857	22,901	(27,002)	22,894
Total liabilities and shareholders' equity	$71,507	$ 30,492	$29,268	$ (27,034)	$ 104,233

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING BALANCE SHEET (Unaudited)
At December 31, 2017

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Assets					
Fixed maturities, available for sale, at fair value (amortized cost $61,316)	$43,240	$ 19,372	$82	$ —	$ 62,694
Equity securities, available for sale, at fair value (cost $440)	161	111	181	—	453
Real estate investments	54	878	—	—	932
Short-term securities	2,751	914	1,230	—	4,895
Other investments	2,673	854	1	—	3,528
Total investments	48,879	22,129	1,494	—	72,502
Cash	157	187	—	—	344
Investment income accrued	418	183	5	—	606
Premiums receivable	4,852	2,292	—	—	7,144
Reinsurance recoverables	5,842	2,467	—	—	8,309
Ceded unearned premiums	493	58	—	—	551
Deferred acquisition costs	1,835	190	—	—	2,025
Deferred taxes	(89)	173	(14)	—	70
Contractholder receivables	3,854	921	—	—	4,775
Goodwill	2,592	1,368	—	(9)	3,951
Other intangible assets	202	140	—	—	342
Investment in subsidiaries	—	—	27,946	(27,946)	—
Other assets	2,181	(3)	700	(14)	2,864
Total assets	$71,216	$ 30,105	$30,131	$ (27,969)	$ 103,483
Liabilities					
Claims and claim adjustment expense reserves	$33,386	$ 16,264	$—	$ —	$ 49,650
Unearned premium reserves	8,957	3,958	—	—	12,915
Contractholder payables	3,854	921	—	—	4,775
Payables for reinsurance premiums	165	109	—	—	274
Debt	693	14	5,878	(14)	6,571
Other liabilities	4,161	882	524	—	5,567
Total liabilities	51,216	22,148	6,402	(14)	79,752
Shareholders' equity					
Common stock (1,750.0 shares authorized; 271.5 shares issued and 271.4 shares outstanding)	—	390	22,886	(390)	22,886
Additional paid-in capital	11,634	6,972	—	(18,606)	—
Retained earnings	8,036	594	33,460	(8,628)	33,462
Accumulated other comprehensive income (loss)	330	1	(343)	(331)	(343)
Treasury stock, at cost (500.9 shares)	—	—	(32,274)	—	(32,274)
Total shareholders' equity	20,000	7,957	23,729	(27,955)	23,731
Total liabilities and shareholders' equity	$71,216	$ 30,105	$30,131	$ (27,969)	$ 103,483

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF CASH FLOWS (Unaudited)
For the year ended December 31, 2018

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Cash flows from operating activities					
Net income	$2,110	$ 604	$2,523	$ (2,714)	$ 2,523
Net adjustments to reconcile net income to net cash provided by operating activities	1,141	605	(363)	474	1,857
Net cash provided by operating activities	3,251	1,209	2,160	(2,240)	4,380
Cash flows from investing activities					
Proceeds from maturities of fixed maturities	5,158	1,906	22	—	7,086
Proceeds from sales of investments:					
Fixed maturities	2,449	1,096	1	—	3,546
Equity securities	65	107	6	—	178
Real estate investments	66	8	—	—	74
Other investments	403	108	—	—	511
Purchases of investments:					
Fixed maturities	(9,404)	(4,096)	(26)	—	(13,526)
Equity securities	(8)	(99)	(10)	—	(117)
Real estate investments	(1)	(73)	—	—	(74)
Other investments	(454)	(83)	—	—	(537)
Net sales (purchases) of short-term securities	895	154	(141)	—	908
Securities transactions in course of settlement	(80)	24	—	—	(56)
Acquisition, net of cash acquired	—	(4)	—	—	(4)
Other	(310)	(8)	—	—	(318)
Net cash used in investing activities	(1,221)	(960)	(148)	—	(2,329)
Cash flows from financing activities					
Treasury stock acquired — share repurchase authorization	—	—	(1,270)	—	(1,270)
Treasury stock acquired — net employee share-based compensation	—	—	(51)	—	(51)
Dividends paid to shareholders	—	—	(814)	—	(814)
Payment of debt	—	—	(600)	—	(600)
Issuance of debt	—	18	591	(18)	591
Issuance of common stock — employee share options	—	—	132	—	132
Dividends paid to parent company	(2,003)	(255)	—	2,258	—
Net cash used in financing activities	(2,003)	(237)	(2,012)	2,240	(2,012)
Effect of exchange rate changes on cash	(3)	(7)	—	—	(10)
Net increase in cash	24	5	—	—	29
Cash at beginning of year	157	187	—	—	344
Cash at end of year	$181	$ 192	$—	$ —	$ 373
Supplemental disclosure of cash flow information					
Income taxes paid (received)	$437	$ 254	$(283)	$ —	$ 408
Interest paid	$47	$ —	$300	$ —	$ 347

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF CASH FLOWS (Unaudited)
For the year ended December 31, 2017

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Cash flows from operating activities					
Net income	$1,728	$ 462	$2,064	$ (2,198)	$ 2,056
Net adjustments to reconcile net income to net cash provided by operating activities	1,500	701	(32)	(77)	2,092
Net cash provided by operating activities	3,228	1,163	2,032	(2,275)	4,148
Cash flows from investing activities					
Proceeds from maturities of fixed maturities	6,576	2,168	6	—	8,750
Proceeds from sales of investments:					
Fixed maturities	1,007	846	1	—	1,854
Equity securities	97	414	254	—	765
Real estate investments	—	23	—	—	23
Other investments	357	124	—	(13)	468
Purchases of investments:					
Fixed maturities	(8,513)	(3,697)	(40)	—	(12,250)
Equity securities	(68)	(133)	(258)	—	(459)
Real estate investments	(1)	(58)	—	—	(59)
Other investments	(444)	(97)	—	—	(541)
Net sales (purchases) of short-term securities	(303)	(120)	397	—	(26)
Securities transactions in course of settlement	(55)	5	3	—	(47)
Acquisition, net of cash acquired	—	25	(477)	13	(439)
Other	(244)	3	—	—	(241)
Net cash used in investing activities	(1,591)	(497)	(114)	—	(2,202)
Cash flows from financing activities					
Treasury stock acquired — share repurchase authorization	—	—	(1,378)	—	(1,378)
Treasury stock acquired — net employee share-based compensation	—	—	(62)	—	(62)
Dividends paid to shareholders	—	—	(785)	—	(785)
Payment of debt	—	—	(657)	—	(657)
Issuance of debt	—	14	789	(14)	789
Issuance of common stock — employee share options	—	—	173	—	173
Dividends paid to parent company	(1,624)	(665)	—	2,289	—
Net cash used in financing activities	(1,624)	(651)	(1,920)	2,275	(1,920)
Effect of exchange rate changes on cash	3	8	—	—	11
Net increase (decrease) in cash	16	23	(2)	—	37
Cash at beginning of year	141	164	2	—	307
Cash at end of year	$157	$ 187	$—	$ —	$ 344
Supplemental disclosure of cash flow information					
Income taxes paid (received)	$481	$ 206	$(173)	$ —	$ 514
Interest paid	$47	$ —	$320	$ —	$ 367

Table of Contents

THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
18. CONSOLIDATING FINANCIAL STATEMENTS OF THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES (Continued)

CONSOLIDATING STATEMENT OF CASH FLOWS (Unaudited)
For the year ended December 31, 2016

(in millions)	TPC	Other Subsidiaries	TRV	Eliminations	Consolidated
Cash flows from operating activities					
Net income	$2,184	$ 970	$3,014	$ (3,154)	$ 3,014
Net adjustments to reconcile net income to net cash provided by operating activities	1,282	139	(122)	156	1,455
Net cash provided by operating activities	3,466	1,109	2,892	(2,998)	4,469
Cash flows from investing activities					
Proceeds from maturities of fixed maturities	6,589	2,380	6	—	8,975
Proceeds from sales of investments:					
Fixed maturities	768	647	2	—	1,417
Equity securities	47	45	—	—	92
Real estate investments	—	69	—	—	69
Other investments	386	180	—	—	566
Purchases of investments:					
Fixed maturities	(7,921)	(3,676)	(12)	—	(11,609)
Equity securities	(6)	(42)	(3)	—	(51)
Real estate investments	(1)	(47)	—	—	(48)
Other investments	(453)	(127)	—	—	(580)
Net sales (purchases) of short-term securities	(501)	383	(81)	—	(199)
Securities transactions in course of settlement	12	(32)	(1)	—	(21)
Other	(331)	(10)	3	—	(338)
Net cash used in investing activities	(1,411)	(230)	(86)	—	(1,727)
Cash flows from financing activities					
Treasury stock acquired — share repurchase authorization	—	—	(2,400)	—	(2,400)
Treasury stock acquired — net employee share-based compensation	—	—	(72)	—	(72)
Dividends paid to shareholders	—	—	(757)	—	(757)
Payment of debt	—	—	(400)	—	(400)
Issuance of debt	—	—	491	—	491
Issuance of common stock — employee share options	—	—	332	—	332
Dividends paid to parent company	(2,140)	(858)	—	2,998	—
Net cash used in financing activities	(2,140)	(858)	(2,806)	2,998	(2,806)
Effect of exchange rate changes on cash	1	(10)	—	—	(9)
Net increase (decrease) in cash	(84)	11	—	—	(73)
Cash at beginning of year	225	153	2	—	380
Cash at end of year	$141	$ 164	$2	$ —	$ 307
Supplemental disclosure of cash flow information					
Income taxes paid (received)	$737	$ 287	$(132)	$ —	$ 892
Interest paid	$47	$ —	$311	$ —	$ 358

Table of Contents
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

19. SELECTED QUARTERLY FINANCIAL DATA (Unaudited)

2018 (in millions, except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Total revenues	$7,286	$7,477	$7,723	$7,796	$30,282
Total expenses	6,508	6,846	6,917	7,050	27,321
Income before income taxes	778	631	806	746	2,961
Income tax expense	109	107	97	125	438
Net income	$669	$524	$709	$621	$2,523
Net income per share [1]:					
Basic	$2.45	$1.93	$2.65	$2.33	$9.37
Diluted	2.42	1.92	2.62	2.32	9.28

2017 (in millions, except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Total revenues	$6,942	$7,184	$7,325	$7,451	$28,902
Total expenses	6,182	6,394	7,005	6,591	26,172
Income before income taxes	760	790	320	860	2,730
Income tax expense [2]	143	195	27	309	674
Net income	$617	$595	$293	$551	$2,056
Net income per share [1]:					
Basic	$2.19	$2.13	$1.06	$2.00	$7.39
Diluted	2.17	2.11	1.05	1.98	7.33

(1) Due to the use of an average number of shares for each quarter, the sum of the quarterly earnings per share may not equal the total earnings per share for the full year.

(2) Income tax expense for the fourth quarter and full year of 2017 included a net charge of $129 million to reflect the change in tax laws and tax rates enacted in the U.S. on December 22, 2017 as part of the Tax Cuts and Jobs Act of 2017, resulting primarily from revaluing the Company's deferred tax assets and liabilities and the tax imposed on accumulated foreign earnings.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not Applicable.

Item 9A. CONTROLS AND PROCEDURES

The Company maintains disclosure controls and procedures (as that term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act)) that are designed to ensure that information required to be disclosed in the Company's reports under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. The Company's management, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures as of December 31, 2018. Based upon that evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2018, the design and operation of the Company's disclosure controls and procedures were effective to accomplish their objectives at the reasonable assurance level.

In addition, there was no change in the Company's internal control over financial reporting (as that term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

The Company regularly seeks to identify, develop and implement improvements to its technology systems and business processes, some of which may affect its internal control over financial reporting. These changes may include such activities as implementing new, more efficient systems, updating existing systems or platforms, automating manual processes or utilizing technology developed by third parties. These systems changes are often phased in over multiple periods in order to limit the implementation risk in any one period, and as each change is implemented the Company monitors its effectiveness as part of its internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is designed to provide reasonable assurances regarding the reliability of financial reporting and the preparation of the consolidated financial statements of the Company in accordance with U.S. generally accepted accounting principles. The Company's accounting policies and internal controls over financial reporting, established and maintained by management, are under the general oversight of the Company's Audit Committee.

The Company's internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- 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 are being made only in accordance with authorizations of the Company's management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of 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.

Management has assessed the Company's internal control over financial reporting as of December 31, 2018. The standard measures adopted by management in making its evaluation are the measures in the Internal Control Integrated Framework (2013) published by the Committee of Sponsoring Organizations of the Treadway Commission.

Based upon its assessment, management has concluded that the Company's internal control over financial reporting was effective at December 31, 2018, and that there were no material weaknesses in the Company's internal control over financial reporting as of that date.

KPMG LLP, an independent registered public accounting firm, which has audited and reported on the consolidated financial statements contained in this Form 10-K, has issued its report on the effectiveness of the Company's internal control over financial reporting which follows this report.

Table of Contents

Report of Independent Registered Public Accounting Firm
To the Shareholders and Board of Directors
The Travelers Companies, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited The Travelers Companies, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheet of the Company as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes and financial statement schedules as listed in the index to consolidated financial statements and schedules (collectively, the consolidated financial statements), and our report dated February 14, 2019 expressed an unqualified opinion on those consolidated financial statements.

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 of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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/ KPMG LLP
KPMG LLP
New York, New York
February 14, 2019

Item 9B. OTHER INFORMATION

Executive Ownership and Sales. All of the Company's executive officers are subject to the Company's executive stock ownership policy. For a summary of this policy as currently in effect, see "Compensation Discussion and Analysis - Stock Ownership Guidelines, Anti-Hedging and Pledging Policies, and Other Trading Restrictions" in the Company's proxy statement filed with the SEC on April 6, 2018. From time to time, some of the Company's executives may determine that it is advisable to diversify their investments for personal financial planning reasons, or may seek liquidity for other reasons, and may, in compliance with the stock ownership policy, sell shares of common stock of the Company on the open market, in private transactions or to the Company. To effect such sales, from time to time, some of the Company's executives may enter into trading plans designed to comply with the Company's Securities Trading Policy and the provisions of Rule 10b5-1 under the Securities Exchange Act of 1934. The trading plans will not reduce any of the executives' ownership of the Company's shares below the applicable executive stock ownership guidelines. The Company does not undertake any obligation to report Rule 10b5-1 plans that may be adopted by any employee or director of the Company in the future, or to report any modifications or termination of any publicly announced plan.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Executive Officers of the Company

Set forth below is information concerning the Company's executive officers and any person identified to become an executive officer as of February 14, 2019.

Name	Age	Office
Alan D. Schnitzer	53	Chairman of the Board of Directors and Chief Executive Officer
Jay S. Benet	66	Vice Chairman
William H. Heyman	70	Vice Chairman and Chief Investment Officer
Avrohom J. Kess	50	Vice Chairman and Chief Legal Officer
Daniel S. Frey	54	Executive Vice President and Chief Financial Officer
Diane D. Bengston	63	Executive Vice President and Chief Enterprise Human Resources Officer
Andy F. Bessette	65	Executive Vice President and Chief Administrative Officer
Michael F. Klein	51	Executive Vice President and President, Personal Insurance
Thomas M. Kunkel	60	Executive Vice President and President, Bond & Specialty Insurance
Mojgan M. Lefebvre	53	Executive Vice President and Chief Information Officer, Enterprise Operations and eBusiness
Maria Olivo	54	Executive Vice President, Strategic Development and President, International
Gregory C. Toczydlowski	52	Executive Vice President and President, Business Insurance

Alan D. Schnitzer, 53, has been Chairman of the Board of Directors since August 2017 and Chief Executive Officer and Director since December 2015. He previously served as Vice Chairman and Chief Executive Officer, Business and International Insurance from July 2014. Mr. Schnitzer was Vice Chairman - Financial, Professional & International Insurance and Field Management; Chief Legal Officer from May 2012 until July 2014 and Vice Chairman and Chief Legal Officer and Executive Vice President - Financial, Professional and International Insurance from May 2008 until May 2012. He was Vice Chairman and Chief Legal Officer from April 2007 until May 2008. Prior to joining the Company, he was a partner at the law firm of Simpson Thacher & Bartlett LLP.

Jay S. Benet, 66, has been Vice Chairman since September 2018. Prior to that, he was Vice Chairman and Chief Financial Officer since August 2005. He previously served as Executive Vice President and Chief Financial Officer of the Company from April 2004, and held the same position at Travelers Property Casualty Corp. from February 2002. Mr. Benet was the worldwide head of financial planning, analysis and reporting at Citigroup from March 2001 until January 2002, and Chief Financial Officer for Citigroup's Global Consumer Europe, Middle East and Africa unit from April 2000 until March 2001. Previously, he spent ten years in various positions with Travelers Life & Annuity, including Chief Financial Officer of Travelers Life & Annuity and Executive Vice President, Group Annuity. Prior to joining Travelers Life & Annuity, Mr. Benet was a partner of Coopers & Lybrand (now PricewaterhouseCoopers).

Table of Contents

William H. Heyman, 70, has been Vice Chairman and Chief Investment Officer since May 2005. He previously served as Executive Vice President and Chief Investment Officer from May 2002. Mr. Heyman held various positions with Citigroup from 1995 until 2002, including the position of chairman of Citigroup Investments from 2000 until 2002. Prior to joining Citigroup in 1995, Mr. Heyman was, successively: a managing director of Salomon Brothers; Director of the Division of Market Regulation of the U.S. Securities and Exchange Commission; and a managing director of Smith Barney.

Avrohom J. Kess, 50, has been Vice Chairman and Chief Legal Officer since December 2016. Prior to that, Mr. Kess was a partner, member of the Corporate Department and Head of the Public Company Advisory Practice at the law firm of Simpson Thacher & Bartlett LLP, which he joined in 1995.

Daniel S. Frey, 54, has been Executive Vice President and Chief Financial Officer since August 2018. Mr. Frey has held various financial management roles since joining a predecessor to the Company in 2003, including Senior Vice President and Chief Financial Officer, Personal Insurance from September 2014 to August 2018, Senior Vice President Finance, Business Insurance from August 2010 to September 2014 and Senior Vice President and Chief Financial Officer, Claim Services from June 2006 to August 2010. Prior to that, Mr. Frey held the position of Chief Financial Officer at Spalding Sports Worldwide from 1999 to 2003 and held various financial management positions at Duracell International, Inc. from 1994 to 1999. Mr. Frey began his career at Deloitte in 1986.

Diane D. Bengston, 63, has been Executive Vice President and Chief Enterprise Human Resources Officer since March 2018. Prior to that, she was Executive Vice President, Enterprise Human Resources from October 2016. Ms. Bengston previously held various management positions since 1979 with the Company and a predecessor, including leading Enterprise Diversity and Inclusion and Talent Management.

Andy F. Bessette, 65, has been Executive Vice President and Chief Administrative Officer since January 2002. Mr. Bessette previously held various management positions with predecessors of the Company since 1980, including Vice President, Corporate Real Estate and Services at Travelers Property Casualty Corp.

Michael F. Klein, 51, has been Executive Vice President and President, Personal Insurance, and Head of Enterprise Business Intelligence & Analytics since May 2016. He previously served as Executive Vice President and President, Personal Insurance from July 2015, Executive Vice President and Co-President, Business Insurance from July 2014, Executive Vice President, Middle Market from November 2012, President of Middle Market from March 2010, President of Commercial Accounts from September 2007, and Senior Vice President, Industry and Product Group from June 2007. Prior to that, Mr. Klein held various positions with the Company since 1990.

Thomas M. Kunkel, 60, has been Executive Vice President and President of Bond & Specialty Insurance since May 2015. He previously served as President of the Bond & Financial Products organization from 2005. Prior to that, Mr. Kunkel held various positions with the Company or its predecessors since 1984, including Regional Chief Underwriting Officer for Bond's Construction Surety business, head of Bond's field management organization, and head of Bond's Commercial Surety business.

Mojgan M. Lefebvre, 53, has been Executive Vice President and Chief Information Officer, Enterprise Operations and eBusiness since joining the Company in September 2018. Prior to that, Ms. Lefebvre held various information technology roles at Liberty Mutual, where she was most recently Senior Vice President and Chief Information Officer for the Global Risk Solutions business, from 2010 to 2018, at bioMerieux from 2007 to 2010 and at TeleTech Holdings from 2004 to 2007.

Maria Olivo, 54, has been Executive Vice President, Strategic Development and President, International since October 2018. Prior to that, she was Executive Vice President, Strategic Development and Corporate Treasurer since July 2010. She previously served as Executive Vice President and Treasurer from June 2009 and Executive Vice President, Market Development from October 2007. Prior to that Ms. Olivo held various positions with the Company or its predecessors since 2002, including leading Corporate Development, Investor Relations and Corporate Communications. Ms. Olivo was deputy head of Strategic Investments at Swiss Re Capital Partners from April 2000 until June 2002. Prior to joining Swiss Re Capital Partners, she was a director in Salomon Smith Barney’s Investment Bank.

Gregory C. Toczydlowski, 52, has been Executive Vice President and President of Business Insurance since June 2016. He previously served as Executive Vice President and President, Small Commercial and Business Insurance Technology and Operations from July 2015 and Executive Vice President and President of Personal Insurance from July 2009. Prior to that, Mr. Toczydlowski held various positions with the Company or its predecessors since 1990, including Chief Operating Officer of Personal Insurance and Chief Financial Officer for the independent agency distribution channel within Personal Insurance.

Table of Contents

Code of Ethics

The Company has adopted a Code of Business Conduct and Ethics (Code of Ethics) that applies to all employees, including executive officers, and to directors. The Code of Ethics is available on the Corporate Governance page of the Company's website at www.travelers.com. If the Company ever were to amend or waive any provision of its Code of Ethics that applies to the Company's principal executive officer, principal financial officer, principal accounting officer or any person performing similar functions, the Company intends to satisfy its disclosure obligations, if any, with respect to any such waiver or amendment by posting such information on its website set forth above rather than by filing a Current Report on Form 8-K.

Other

The following sections of the Company's definitive Proxy Statement relating to its 2019 Annual Meeting of Shareholders, which will be filed with the SEC no later than 120 days after the end of the Company's fiscal year on December 31, 2018 (the Proxy Statement), are incorporated herein by reference: "Nominees for Election of Directors," "Governance of Your Company - Specific Considerations Regarding 2019 Nominees," "Governance of Your Company - Committees of the Board and Meetings - Audit Committee" and "Share Ownership Information - Section 16(a) Beneficial Ownership Reporting Compliance."

Item 11. EXECUTIVE COMPENSATION

The following sections of the Proxy Statement are incorporated herein by reference: "Compensation Discussion and Analysis," "Compensation Committee Report," "Summary Compensation Table," "Grants of Plan-Based Awards in 2018," "Narrative Supplement to Summary Compensation Table and Grants of Plan-Based Awards in 2018," "Option Exercises and Stock Vested in 2018," "Outstanding Equity Awards at December 31, 2018," "Post-Employment Compensation," "Potential Payments to Named Executive Officers Upon Termination of Employment or Change in Control," "Non-Employee Director Compensation," "Governance of Your Company - Risk Management and Compensation" and "CEO Pay Ratio."

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS

The "Share Ownership Information - 5% Owners" and "Share Ownership Information - Directors and Executive Officers" sections of the Proxy Statement are incorporated herein by reference.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth information as of December 31, 2018 regarding the Company's equity compensation plans. The only plan pursuant to which the Company may currently make additional equity grants is The Travelers Companies, Inc. Amended and Restated 2014 Stock Incentive Plan (the 2014 Incentive Plan).

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders(1)	12,070,725 (2)	$106.83 per share (3)	6,690,568 (4)

(1) In addition to the 2014 Incentive Plan, also included are The Travelers Companies, Inc. Amended and Restated 2004 Stock Incentive Plan, as amended (the 2004 Incentive Plan), which was replaced by the 2014 Incentive Plan, and certain plans for employees in the United Kingdom and the Republic of Ireland and The Travelers Deferred Compensation Plan for Non-Employee Directors. Shares delivered under these plans are issued pursuant to the 2004 Incentive Plan and the 2014 Incentive Plan.

(2) Total includes (i) 9,069,162 stock options, (ii) 1,045,050 performance shares and dividend equivalents accrued thereon (assuming issuance of 100% of performance shares granted), (iii) 1,648,048 restricted stock units, (iv) 281,495 director deferred stock awards and dividend equivalents accrued thereon and (v) 26,970 common stock units credited to the deferred compensation accounts of certain non-employee directors in lieu of cash compensation, at the election of such directors.

Table of Contents

(3) The weighted average exercise prices for both the 2004 Incentive Plan and the 2014 Incentive Plan relate only to stock options. The calculation of the weighted average exercise price does not include outstanding equity awards that are received or exercised for no consideration and also does not include common stock units credited to the deferred compensation accounts of certain non-employee directors at fair market value in lieu of cash compensation at the election of such directors.

(4) These shares are available for grant as of December 31, 2018 under the 2014 Incentive Plan pursuant to which the Compensation Committee of the Board of Directors may make various stock-based awards including nonqualified stock options, incentive stock options, stock appreciation rights, restricted stock, restricted stock units, deferred stock, deferred stock units, performance awards and other stock-based or stock-denominated awards with respect to the Company's common stock. This includes 10 million shares initially authorized for issuance under the 2014 Incentive Plan and an additional 2.5 million shares and 4.4 million shares authorized by shareholders in May 2017 and May 2016, respectively, and shares subject to awards under the 2004 Incentive Plan and the 2014 Incentive Plan that expired, were cancelled, forfeited, settled in cash or otherwise terminated without the issuance of shares.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The "Governance of Your Company - Transactions with Related Persons," "Nominees for Election of Directors" and "Governance of Your Company - Directors Independence and Independence Determinations" sections of the Proxy Statement are incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The "Audit and Non-Audit Fees" section of the Proxy Statement is incorporated herein by reference.

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Documents filed as a part of the report:

(1) Financial Statements and Schedules. See Index to Consolidated Financial Statements and Schedules on page 123 hereof.

(2) Exhibits:

Exhibit Number	Description of Exhibit
3.1	Amended and Restated Articles of Incorporation of The Travelers Companies, Inc. (the "Company"), as amended and restated May 23, 2013, were filed as Exhibit 3.1 to the Company's current report on Form 8-K filed on May 24, 2013, and are incorporated herein by reference.
3.2	Bylaws of The Travelers Companies, Inc. as Amended and Restated November 3, 2016 were filed as Exhibit 3.2 to the Company's current report on Form 8-K filed on November 9, 2016, and are incorporated herein by reference
10.1	Revolving Credit Agreement, dated June 4, 2018, between the Company and a syndicate of financial institutions, was filed as Exhibit 10.1 to the Company's current report on Form 8-K filed on June 6, 2018, and is incorporated herein by reference.
10.2*	The Travelers Companies, Inc. Policy Regarding Executive Incentive Compensation Recoupment was filed as Exhibit 10.42 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2009, and is incorporated herein by reference.
10.3*	Letter Agreement between Alan D. Schnitzer and the Company, dated April 15, 2007, was filed as Exhibit 10.1 to the Company's quarterly report on Form 10-Q for the fiscal quarter ended June 30, 2007, and is incorporated herein by reference.
10.4*	Letter Agreement between Alan D. Schnitzer and the Company, dated August 4, 2015, was filed as Exhibit 10.2 to the Company's quarterly report on Form 10-Q for the fiscal quarter ended September 30, 2015, and is incorporated herein by reference.
10.5*	Time Sharing Agreement, dated September 2, 2015, by and between the Company and Alan D. Schnitzer, was filed as Exhibit 10.3 to the Company's quarterly report on Form 10-Q for the fiscal quarter ended

	September 30, 2015, and is incorporated herein by reference.
10.6*	Letter Agreement between Avrohom J. Kess and the Company, dated December 19, 2016, was filed as Exhibit 10.49 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2016, and is incorporated by reference.
10.7*	The Travelers Companies, Inc. Amended and Restated 2014 Stock Incentive Plan was filed as Exhibit 10.1 to the Company's current report on Form 8-K filed on May 19, 2017, and is incorporated herein by reference.

Table of Contents

10.8*	The Travelers Companies, Inc. Amended and Restated 2004 Stock Incentive Plan was filed as Exhibit 10.28 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2008, and is incorporated herein by reference.
10.9*	Amendment to The Travelers Companies, Inc. Amended and Restated 2004 Stock Incentive Plan was filed as Exhibit 10.7 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2012, and is incorporated herein by reference.
10.10*	Travelers Property Casualty Corp. (“TPC”) 2002 Stock Incentive Plan, as amended effective January 23, 2003, was filed as Exhibit 10.22 to TPC's annual report on Form 10-K for the fiscal year ended December 31, 2002, and is incorporated herein by reference.
10.11*	Amendment to the TPC 2002 Stock Incentive Plan, as amended effective January 23, 2003, was filed as Exhibit 10.9 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2012, and is incorporated herein by reference.
10.12*	Current Director Compensation Program, effective as of May 19, 2016, was filed as Exhibit 10.2 to the Company's quarterly report on Form 10-Q for the fiscal quarter ended June 30, 2016, and is incorporated herein by reference.
10.13*	The Company's Amended and Restated Deferred Compensation Plan for Non-Employee Directors was filed as Exhibit 10.29 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2008, and is incorporated herein by reference.
10.14*	TPC Compensation Plan for Non-Employee Directors, as amended on January 22, 2004, was filed as Exhibit 10.16 to TPC's annual report on Form 10-K for the fiscal year ended December 31, 2003, and is incorporated herein by reference.
10.15*	The SPC Directors' Deferred Compensation Plan was filed as Exhibit 10(b) to the Company's annual report on Form 10-K for the fiscal year ended December 31, 1997, and is incorporated herein by reference.
10.16*	The SPC Deferred Stock Plan for Non-Employee Directors was filed as Exhibit 10(a) to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2000, and is incorporated herein by reference.
10.17*	The SPC Directors' Charitable Award Program, as amended, was filed as Exhibit 10(d) to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2000, and is incorporated herein by reference.
10.18*	The Travelers Severance Plan (as Amended and Restated, effective January 1, 2015) was filed as Exhibit 10.20 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2014, and is incorporated herein by reference.
10.19*	The Company's Senior Executive Performance Plan was filed as Exhibit 10.1 to the Company's quarterly report on Form 10-Q for the fiscal quarter ended March 31, 2005, and is incorporated herein by reference.
10.20*	First Amendment to the Company's Senior Executive Performance Plan was filed as Exhibit 10.40 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2009, and is incorporated herein by reference.
10.21*	The Travelers Deferred Compensation Plan, as Amended and Restated, effective January 1, 2009, was filed as Exhibit 99.1 to the Company's Registration Statement on Form S-8 (Registration No. 333-157091) dated February 4, 2009, and is incorporated herein by reference.
10.22*	First Amendment to The Travelers Deferred Compensation Plan was filed as Exhibit 10.37 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2009, and is incorporated herein by reference.
10.23*	TPC Deferred Compensation Plan was filed as Exhibit 10.23 to TPC's annual report on Form 10-K for the fiscal year ended December 31, 2002, and is incorporated herein by reference.
10.24*	The Travelers Benefit Equalization Plan, as Amended and Restated effective as of January 1, 2016, was filed as Exhibit 10.29 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2015, and is incorporated herein by reference.
10.25*	TPC Benefit Equalization Plan was filed as Exhibit 10.24 to TPC's annual report on Form 10-K for the fiscal year ended December 31, 2002, and is incorporated herein by reference.

10.26*	The SPC Benefit Equalization Plan-2001 Revision and the first and second amendments thereto were filed as Exhibit 10.27 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2004, and are incorporated herein by reference.
10.27*	The SPC Annual Incentive Plan was filed as an exhibit to the Company's Definitive Proxy Statement on Schedule 14A, filed on March 29, 1999, and is incorporated herein by reference.
10.28*	Form of Non-Competition Agreement was filed as Exhibit 10.43 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2009, and is incorporated herein by reference.
10.29*	Form of Non-Solicitation and Non-Disclosure Agreement for Executive Officers was filed as Exhibit 10.35 to the Company’s annual report on Form 10-K for the fiscal year ended December 31, 2016, and is incorporated herein by reference.

Table of Contents

10.30*	Form of Restricted Stock Unit Award Notification and Agreement (For Management Committee Member Executing Non-Compete) was filed as Exhibit 10.37 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2014, and is incorporated herein by reference.
10.31†*	Form of Stock Option Grant Notification and Agreement.
10.32†*	Form of Restricted Stock Unit Award Notification and Agreement.
10.33*	Form of Performance Shares Award Notification and Agreement (2016) was filed as Exhibit 10.44 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2015, and is incorporated herein by reference.
10.34*	Form of Performance Shares Award Notification and Agreement (2017) was filed as Exhibit 10.45 to the Company’s annual report on Form 10-K for the fiscal year ended December 31, 2016, and is incorporated herein by reference.
10.35*	Form of Performance Share Award Notification and Agreement (2018) was filed as Exhibit 10.40 to the Company's annual report on Form 10-K for the fiscal year ended December 31, 2017, and is incorporated herein by reference.
10.36†*	Form of Performance Share Award Notification and Agreement (2019).
10.37†*	Form of Non-Employee Director Notification and Agreement of Annual Deferred Stock Award.
21.1†	A list of the subsidiaries of the Company.
23.1†	Consent of KPMG LLP, Independent Registered Public Accounting Firm, with respect to the incorporation by reference of KPMG LLP’s audit report into Registration Statements of the Company on Form S-8 (SEC File No. 33-56987, No. 333-25203, No. 333-50943, No. 333-63114, No. 333-63118, No. 333-65726, No. 333-107698, No. 333-107699, No. 333-114135, No. 333-117726, No. 333-120998, No. 333-128026, No. 333-157091, No. 333-157092, No. 333-164972, No. 333-176002, No. 333-196290, No. 333-212078 and No. 333-218874) and Form S-3 (SEC File No. 333-212077).
24.1†	Power of Attorney.
31.1†	Certification of Alan D. Schnitzer, Chairman and Chief Executive Officer of the Company, as required by Section 302 of the Sarbanes-Oxley Act of 2002.
31.2†	Certification of Daniel S. Frey, Chief Financial Officer of the Company, as required by Section 302 of the Sarbanes-Oxley Act of 2002.
32.1†	Certification of Alan D. Schnitzer, Chairman and Chief Executive Officer of the Company, as required by Section 906 of the Sarbanes-Oxley Act of 2002.
32.2†	Certification of Daniel S. Frey, Chief Financial Officer of the Company, as required by Section 906 of the Sarbanes-Oxley Act of 2002.
101.1†	The following financial information from The Travelers Companies, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 formatted in XBRL: (i) Consolidated Statement of Income for the years ended December 31, 2018, 2017 and 2016; (ii) Consolidated Statement of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016; (iii) Consolidated Balance Sheet at December 31, 2018 and 2017; (iv) Consolidated Statement of Changes in Shareholders' Equity for the years ended December 31, 2018, 2017 and 2016; (v) Consolidated Statement of Cash Flows for the years ended December 31, 2018, 2017 and 2016; (vi) Notes to Consolidated Financial Statements; and (vii) Financial Statement Schedules.

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† Filed herewith.

* Management contract or compensatory plan in which directors and/or executive officers are eligible to participate.

The total amount of securities authorized pursuant to any instrument defining rights of holders of long-term debt of the Company does not exceed 10% of the total assets of the Company and its consolidated subsidiaries. Therefore, the Company is not filing any instruments evidencing long-term debt. However, the Company will furnish copies of any such instrument to the Securities and Exchange Commission upon request.

Copies of any of the exhibits referred to above will be furnished to security holders who make written request therefor to The Travelers Companies, Inc., 385 Washington Street, Saint Paul, MN, 55102, Attention: Corporate Secretary.

The agreements and other documents filed as exhibits to this report are not intended to provide factual information or other disclosure other than the terms of the agreements or other documents themselves, and you should not rely on them for that purpose. In particular, any representations and warranties made by the Company in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs at the date they were made or at any other time.

Item 16. FORM 10-K SUMMARY

None.

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, The Travelers Companies, Inc. has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

THE TRAVELERS COMPANIES, INC.
(Registrant)

Date: February 14, 2019 By /s/ CHRISTINE K. KALLA
Christine K. Kalla
Executive Vice President and General Counsel
(Authorized Signatory)

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 Travelers Companies, Inc. and in the capacities and on the dates indicated.

			Date
By	/s/ ALAN D. SCHNITZER Alan D. Schnitzer	Director, Chairman and Chief Executive Officer (Principal Executive Officer)	February 14, 2019
By	/s/ DANIEL S. FREY Daniel S. Frey	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 14, 2019
By	/s/ DOUGLAS K. RUSSELL Douglas K. Russell	Senior Vice President and Corporate Controller (Principal Accounting Officer)	February 14, 2019
By	* Alan L. Beller	Director	February 14, 2019
By	* John H. Dasburg	Director	February 14, 2019
By	* Janet M. Dolan	Director	February 14, 2019
By	* Kenneth M. Duberstein	Director	February 14, 2019
By	* Patricia L. Higgins	Director	February 14, 2019
By	* William J. Kane	Director	February 14, 2019
By	* Clarence Otis Jr.	Director	February 14, 2019
By	* Philip T. Ruegger II	Director	February 14, 2019
By	* Todd C. Schermerhorn	Director	February 14, 2019
By	* Donald J. Shepard	Director	February 14, 2019
By	* Laurie J. Thomsen	Director	February 14, 2019
*By	/s/ CHRISTINE K. KALLA Christine K. Kalla, Attorney-in-fact		February 14, 2019

Table of Contents

FINANCIAL STATEMENT SCHEDULES
SCHEDULE II

THE TRAVELERS COMPANIES, INC.
(Parent Company Only)

CONDENSED FINANCIAL INFORMATION OF REGISTRANT
(in millions)

CONDENSED STATEMENT OF INCOME

For the year ended December 31,	2018	2017	2016
Revenues			
Net investment income	$32	$24	$13
Net realized investment gains (losses) [1]	(13)	66	(1)
Total revenues	19	90	12
Expenses			
Interest	304	321	315
Other	20	25	5
Total expenses	324	346	320
Loss before income taxes and net income of subsidiaries	(305)	(256)	(308)
Income tax benefit	(114)	(130)	(168)
Loss before net income of subsidiaries	(191)	(126)	(140)
Net income of subsidiaries	2,714	2,190	3,154
Net income	$2,523	$2,064	$3,014

(1) The parent company had $0, $0 and $(1) million of other-than-temporary impairment losses recognized in net realized investment gains (losses) during the years ended December 31, 2018, 2017 and 2016, respectively. The parent company had no other-than-temporary impairment gains or losses recognized in other comprehensive income (loss) during the years ended December 31, 2018, 2017 and 2016.

The condensed financial statements should be read in conjunction with the notes to the condensed financial information of the registrant, as well as the consolidated financial statements and notes thereto.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE II

THE TRAVELERS COMPANIES, INC.
(Parent Company Only)

CONDENSED FINANCIAL INFORMATION OF REGISTRANT
(in millions)

CONDENSED STATEMENT OF COMPREHENSIVE INCOME

For the year ended December 31,	2018	2017	2016
Net income	$2,523	$2,064	$3,014
Other comprehensive income (loss) — parent company:			
Changes in net unrealized gains on investment securities having no credit losses recognized in the consolidated statement of income	—	(44)	11
Net changes in benefit plan assets and obligations	(53)	22	(20)
Other comprehensive loss before income taxes and other comprehensive income (loss) of subsidiaries	(53)	(22)	(9)
Income tax expense (benefit)	(17)	2	(1)
Other comprehensive loss, net of taxes, before other comprehensive income (loss) of subsidiaries	(36)	(24)	(8)
Other comprehensive income (loss) of subsidiaries	(1,434)	436	(590)
Other comprehensive income (loss)	(1,470)	412	(598)
Comprehensive income	$1,053	$2,476	$2,416

The condensed financial statements should be read in conjunction with the notes to the condensed financial information of the registrant, as well as the consolidated financial statements and notes thereto.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE II

THE TRAVELERS COMPANIES, INC.
(Parent Company Only)

CONDENSED FINANCIAL INFORMATION OF REGISTRANT
(in millions)

CONDENSED BALANCE SHEET

At December 31,	2018	2017
Assets		
Fixed maturities	$84	$82
Equity securities	171	181
Short-term securities	1,371	1,230
Investment in subsidiaries	26,993	27,946
Other assets	649	692
Total assets	$29,268	$30,131
Liabilities		
Debt	$5,871	$5,878
Other liabilities	496	524
Total liabilities	6,367	6,402
Shareholders' equity		
Common stock (1,750.0 shares authorized; 263.7 and 271.5 shares issued, 263.6 and 271.4 shares outstanding)	23,144	22,886
Retained earnings	35,211	33,460
Accumulated other comprehensive loss	(1,859)	(343)
Treasury stock, at cost (510.9 and 500.9 shares)	(33,595)	(32,274)
Total shareholders' equity	22,901	23,729
Total liabilities and shareholders' equity	$29,268	$30,131

The condensed financial statements should be read in conjunction with the notes to the condensed financial information of the registrant, as well as the consolidated financial statements and notes thereto.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE II

THE TRAVELERS COMPANIES, INC.
(Parent Company Only)

CONDENSED FINANCIAL INFORMATION OF REGISTRANT
(in millions)

CONDENSED STATEMENT OF CASH FLOWS

For the year ended December 31,	2018	2017	2016
Cash flows from operating activities			
Net income	$2,523	$2,064	$3,014
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in net income of subsidiaries	(2,714)	(2,190)	(3,154)
Dividends received from consolidated subsidiaries	2,258	2,289	2,998
Deferred federal income tax expense	28	40	12
Change in income taxes payable	100	3	(48)
Other	(35)	(174)	70
Net cash provided by operating activities	2,160	2,032	2,892
Cash flows from investing activities			
Net sales (purchases) of short-term securities	(141)	397	(81)
Other investments, net	(7)	(34)	(5)
Acquisition, net of cash acquired	—	(477)	—
Net cash used in investing activities	(148)	(114)	(86)
Cash flows from financing activities			
Treasury stock acquired—share repurchase authorization	(1,270)	(1,378)	(2,400)
Treasury stock acquired—net employee share-based compensation	(51)	(62)	(72)
Dividends paid to shareholders	(814)	(785)	(757)
Payment of debt	(600)	(657)	(400)
Issuance of debt	591	789	491
Issuance of common stock—employee share options	132	173	332
Net cash used in financing activities	(2,012)	(1,920)	(2,806)
Net decrease in cash	—	(2)	—
Cash at beginning of year	—	2	2
Cash at end of year	$—	$—	$2
Supplemental disclosure of cash flow information			
Cash received during the year for taxes	$283	$173	$132
Cash paid during the year for interest	$300	$320	$311

The condensed financial statements should be read in conjunction with the notes to the condensed financial information of the registrant, as well as the consolidated financial statements and notes thereto.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE II

THE TRAVELERS COMPANIES, INC.
(Parent Company Only)

NOTES TO THE CONDENSED FINANCIAL INFORMATION OF REGISTRANT

1. GUARANTEES

The Travelers Companies, Inc. (TRV) fully and unconditionally guarantees the payment of all principal, premiums, if any, and interest on certain debt obligations of its subsidiaries TPC and TIGHI. The guarantees pertain to the $200 million 7.75% notes due 2026 and the $500 million 6.375% notes due 2033.

TRV also has contingent obligations for guarantees in connection with the selling of businesses to third parties, certain insurance obligations of a subsidiary and various indemnifications including indemnifications to service providers in the normal course of business. The guarantees and indemnification clauses are often standard contractual terms and include indemnifications for breaches of representations and warranties and in some cases obligations arising from certain liabilities. The terms of these provisions vary in duration and nature.

Certain of the guarantees and indemnifications described above have no stated or notional amounts or limitation to the maximum potential future payments. Accordingly, TRV is unable to provide an estimate of the maximum potential payments for such arrangements, and the likelihood for any payment under these guarantees is remote.

Table of Contents

SCHEDULE III
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
Supplementary Insurance Information
2016-2018
(in millions)

Segment	Deferred Acquisition Costs	Claims and Claim Adjustment Expense Reserves	Unearned Premiums	Earned Premiums	Net Investment Income (1)	Claims and Claim Adjustment Expenses	Amortization of Deferred Acquisition Costs	Other Operating Expenses (2)	Net Written Premiums
2018									
Business Insurance	$ 1,102	$ 41,132	$ 7,112	$ 14,722	$ 1,833	$ 10,171	$ 2,388	$ 2,623	$ 14,956
Bond & Specialty Insurance	277	3,255	1,619	2,420	233	772	454	459	2,528
Personal Insurance	741	6,266	4,824	9,917	408	7,348	1,539	1,185	10,224
Total—Reportable Segments	2,120	50,653	13,555	27,059	2,474	18,291	4,381	4,267	27,708
Other	—	15	—	—	—	—	—	382	—
Consolidated	$ 2,120	$ 50,668	$ 13,555	$ 27,059	$ 2,474	$ 18,291	$ 4,381	$ 4,649	$ 27,708
2017									
Business Insurance	$ 1,060	$ 40,352	$ 6,857	$ 14,146	$ 1,786	$ 9,521	$ 2,286	$ 2,563	$ 14,270
Bond & Specialty Insurance	258	3,421	1,515	2,307	228	899	432	464	2,359
Personal Insurance	707	5,860	4,543	9,230	383	7,047	1,448	1,111	9,590
Total—Reportable Segments	2,025	49,633	12,915	25,683	2,397	17,467	4,166	4,138	26,219
Other	—	17	—	—	—	—	—	401	—
Consolidated	$ 2,025	$ 49,650	$ 12,915	$ 25,683	$ 2,397	$ 17,467	$ 4,166	$ 4,539	$ 26,219
2016									
Business Insurance	$ 1,026	$ 39,555	$ 6,725	$ 13,855	$ 1,701	$ 8,753	$ 2,221	$ 2,554	$ 13,900
Bond & Specialty Insurance	246	3,323	1,444	2,260	239	633	421	445	2,271
Personal Insurance	651	5,051	4,160	8,419	362	5,684	1,343	1,124	8,787
Total—Reportable Segments	1,923	47,929	12,329	24,534	2,302	15,070	3,985	4,123	24,958
Other	—	20	—	—	—	—	—	394	—
Consolidated	$ 1,923	$ 47,949	$ 12,329	$ 24,534	$ 2,302	$ 15,070	$ 3,985	$ 4,517	$ 24,958

(1) See note 2 of notes to the consolidated financial statements for discussion of the method used to allocate net investment income and invested assets to the identified segments.

(2) Expense allocations are determined in accordance with prescribed statutory accounting practices. These practices make a reasonable allocation of all expenses to those product lines with which they are associated.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE V
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
Valuation and Qualifying Accounts
(in millions)

	Balance at beginning of period	Charged to costs and expenses	Charged to other accounts	Deductions (1)	Balance at end of period
2018					
Reinsurance recoverables	$ 111	$ —	$ —	$ 1	$ 110
Allowance for uncollectible:					
Premiums receivable from underwriting activities	$ 58	$ 50	$ —	$ 54	$ 54
Deductibles	$ 26	$ (1)	$ —	$ 1	$ 24
2017					
Reinsurance recoverables	$ 116	$ —	$ —	$ 5	$ 111
Allowance for uncollectible:					
Premiums receivable from underwriting activities	$ 61	$ 38	$ —	$ 41	$ 58
Deductibles	$ 34	$ (2)	$ —	$ 6	$ 26
2016					
Reinsurance recoverables	$ 157	$ —	$ —	$ 41	$ 116
Allowance for uncollectible:					
Premiums receivable from underwriting activities	$ 65	$ 35	$ —	$ 39	$ 61
Deductibles	$ 35	$ 5	$ —	$ 6	$ 34

(1) Credited to the related asset account.

See the Report of Independent Registered Public Accounting Firm.

Table of Contents

SCHEDULE VI
THE TRAVELERS COMPANIES, INC. AND SUBSIDIARIES
Supplementary Information Concerning Property-Casualty Insurance Operations [1]
2016-2018
(in millions)

Affiliation with Registrant(2)	Deferred Acquisition Costs	Claims and Claim Adjustment Expense Reserves	Discount From Reserves for Unpaid Claims(3)	Unearned Premiums	Earned Premiums	Net Investment Income	Claims and Claim Adjustment Expenses Incurred Related to: Current Year	Prior Year	Amortization of Deferred Acquisition Costs	Paid Claims and Claim Adjustment Expenses	Net Written Premiums
2018	$2,120	$50,653	$1,158	$13,555	$27,059	$2,474	$18,614	$(406)	$4,381	$17,060	$27,708
2017	$2,025	$49,633	$1,102	$12,915	$25,683	$2,397	$17,846	$(458)	$4,166	$16,043	$26,219
2016	$1,923	$47,929	$1,083	$12,329	$24,534	$2,302	$15,675	$(680)	$3,985	$14,796	$24,958

(1) Excludes accident and health insurance business.
(2) Consolidated property-casualty insurance operations.
(3) For a discussion of types of reserves discounted and discount rates used, see note 7 of notes to the consolidated financial statements.

See the Report of Independent Registered Public Accounting Firm.