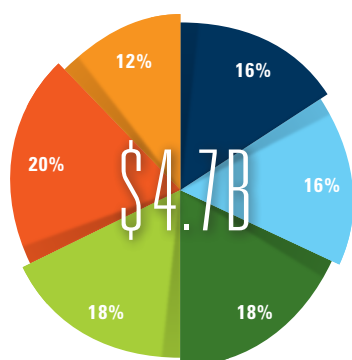


*Annual Report* / 2016

# 2016: The Hanover at a Glance

## INSURANCE PRODUCT MIX



2016 Net Premiums Written (NPW)

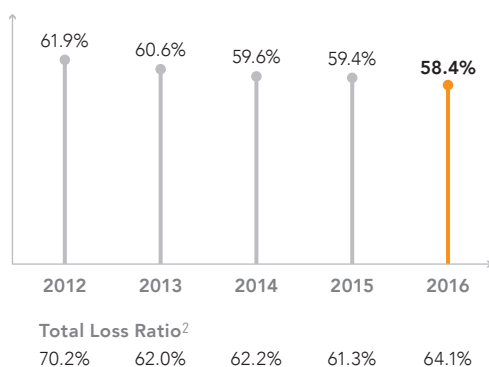
- Small Commercial
- Middle Market
- U.S. Specialty Lines
- Int'l. Specialty Lines
- Personal Auto
- Homeowners

## 2016 FINANCIAL HIGHLIGHTS

Year Ended December 31	2016	2015
(\$ in millions, except per share amounts)		
Revenues	\$4,946	\$5,034
Net Income	\$155	\$332
Operating Income <sup>1</sup>	\$184	\$280
Total Assets	\$14,220	\$13,781
Shareholders' Equity	\$2,858	\$2,844
<b>Per Share Data</b>		
Net Income Per Share—Diluted	\$3.59	\$7.40
Operating Income Per Share—Diluted <sup>1</sup>	\$4.27	\$6.25
Book Value Per Share	\$67.40	\$66.21

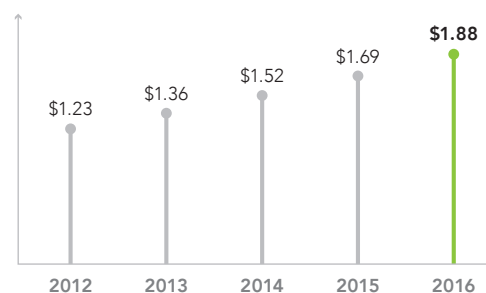
<sup>1</sup> Operating income and operating income per diluted share are non-GAAP measures. The definition and reconciliation of operating income and operating income per diluted share to the most directly comparable GAAP measures, income from continuing operations and income from continuing operations per diluted share, respectively, can be found on page 43 of the enclosed Annual Report on Form 10-K.

## ACCIDENT YEAR LOSS RATIO, EX-CAT<sup>2</sup>



<sup>2</sup> Current accident year loss ratio, excluding catastrophes, is a non-GAAP measure. The total loss ratio (which includes catastrophe losses and prior-year loss reserve development) is the most directly comparable GAAP measure.

## DIVIDENDS PAID PER SHARE



## To Our Shareholders,

2016 was a year of important progress for our company. Our businesses performed well in the face of significant market challenges and we advanced our mission to deliver value for our stakeholders.

Our performance during the year affirmed the time is right to take our company to the next level. We reported operating income of \$4.27 per share, which included a balance sheet strengthening in the fourth quarter, ensuring that we continue to build on a solid financial foundation. We delivered substantially improved underlying operating income compared to 2015, excluding domestic balance sheet strengthening, and improved

our accident year loss ratios, as we have over the past several years. Each of our businesses generated solid underlying results during 2016, reflecting our inherent strengths and unique competitive position.

At the same time, we developed our go-forward business strategy, **Hanover 2021**, committing to build on our proven, agent-centric strategy, expand our industry-leading domestic and international specialty capabilities, and create innovative, technology-based business models to help our agent partners and our company grow. We are confident that the successful implementation of this strategy will generate significant increases in

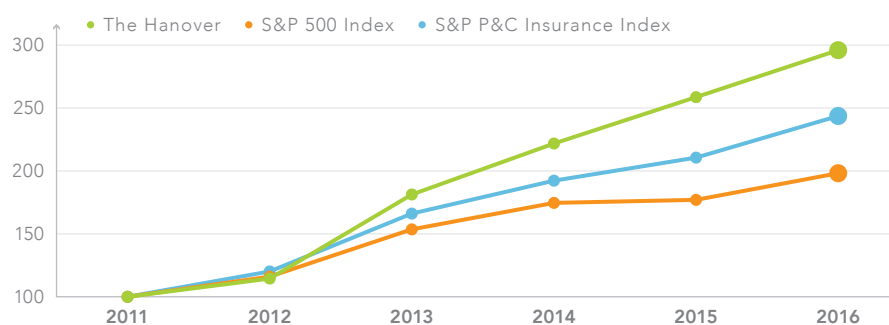
revenues and book value per share while producing top-quartile returns on equity over the next five years.

With our organization financially stronger and better positioned than ever, we look forward to providing our partners and customers with exceptional insurance solutions in a dynamic world and delivering superior returns for our shareholders.



JOSEPH M. ZUBRETSKY  
President and  
Chief Executive Officer

### FIVE-YEAR TOTAL RETURN PERFORMANCE<sup>3</sup>



<sup>3</sup> The graph above compares the performance of the company's common stock since December 31, 2011 with the performance of the S&P 500 Index and the S&P Property & Casualty Insurance Index. Assumes \$100 invested on December 31, 2011 in The Hanover Insurance Group, Inc.'s common stock or applicable index, including reinvestment of dividends. Copyright © 2017, SNL Financial LC, Charlottesville, VA. All rights reserved. [www.snl.com](http://www.snl.com)

# Executive Leadership Team

## JOSEPH M. ZUBRETSKY

President, Chief Executive Officer

## JOHN FOWLE

Chief Executive Officer and  
Chief Underwriting Officer, Chaucer

## JOHN C. ROCHE

Executive Vice President,  
President, Hanover Agency Markets

## MARK L. BERTHIAUME

Executive Vice President,  
Chief Administration Officer and  
Chief Technology Innovation Officer

## J. KENDALL HUBER

Executive Vice President,  
General Counsel and Assistant Secretary

## MARK J. WELZENBACH

Executive Vice President,  
Chief Claims Officer

## CHRISTINE BILOTTI-PETERSON

Executive Vice President,  
Chief Human Resources Officer

## MARK L. KEIM

Executive Vice President,  
Corporate Development and Strategy

---

## OTHER SENIOR OFFICERS

## WARREN E. BARNES

Vice President,  
Principal Accounting Officer

## JEFFREY M. FARBER

Executive Vice President,  
Chief Financial Officer

## RICHARD W. LAVEY

Executive Vice President,  
Chief Growth Innovation Officer  
and Chief Marketing Officer

## ANN K. TRIPP

Senior Vice President,  
Chief Investment Officer

# Board of Directors

(A) Audit Committee | (C) Compensation Committee | (N) Nominating and Corporate Governance Committee

## MICHAEL P. ANGELINI

Chairman of the Board  
The Hanover Insurance Group, Inc.  
Chairman and Partner  
Bowditch & Dewey, LLP

## P. KEVIN CONDRON (C)

Vice Chairman of the Board  
The Hanover Insurance Group, Inc.  
Chairman and Chief Executive Officer  
The Granite Group LLC

## WENDELL J. KNOX (C)

Retired President and  
Chief Executive Officer  
Abt Associates

## RICHARD H. BOOTH (A,N)

Retired Vice Chairman  
Guy Carpenter & Company LLC  
Former Chairman and  
Chief Executive Officer  
HSB Group, Inc.

## CYNTHIA L. EGAN (N)

Retired President,  
Retirement Plan Services  
T. Rowe Price Group

## JOSEPH R. RAMRATH (A)

Managing Director  
Colchester Partners LLC

## JANE D. CARLIN

Retired Managing Director and  
Global Head of Financial Holding  
Company Governance and Assurance,  
Morgan Stanley Group, Inc.

## KAREN C. FRANCIS (C)

Executive Chairman  
AcademixDirect, Inc.

## HARRIETT TEE TAGGART (N)

Retired Partner, Senior Vice President  
Wellington Management LLC

## DANIEL T. HENRY (A)

Retired Chief Financial Officer  
American Express Company

## JOSEPH M. ZUBRETSKY

President and Chief Executive Officer  
The Hanover Insurance Group, Inc.



**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**  
Washington, DC 20549  
**FORM 10-K**

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

For the fiscal year ended December 31, 2016  
or

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

For the transition period from: to

Commission file number: 1-13754

**THE HANOVER INSURANCE GROUP, INC.**

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of  
incorporation or organization)

04-3263626  
(I.R.S. Employer  
Identification No.)

440 Lincoln Street, Worcester, Massachusetts  
(Address of principal executive offices)

01653  
(Zip Code)

Registrant's telephone number, including area code: (508) 855-1000

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

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$.01 par value	New York Stock Exchange
7 5/8% Senior Debentures due 2025	New York Stock Exchange
6.35% Subordinated Debentures due 2053	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 ☒ 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 ☒

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months. Yes ☒ 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 the 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, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer", and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒

Accelerated filer ☐

Non-accelerated filer ☐ (Do not check if a smaller reporting company) Smaller Reporting Company ☐

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

Based on the closing sales price of June 30, 2016, the aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant was \$3,607,314,213.

The number of shares outstanding of the registrant's common stock, \$0.01 par value, was 42,501,269 shares as of February 17, 2017.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of The Hanover Insurance Group, Inc.'s Proxy Statement to be filed pursuant to Regulation 14A relating to the 2017 Annual Meeting of Shareholders to be held May 16, 2017 are incorporated by reference in Part III.

# The Hanover Insurance Group, Inc.

Annual Report on Form 10-K

For the Fiscal Year Ended December 31, 2016

## TABLE OF CONTENTS

<i>Item</i>	<i>Description</i>	<i>Page</i>
PART I		
1	Business . . . . .	3
1A.	Risk Factors . . . . .	20
1B.	Unresolved Staff Comments . . . . .	37
2	Properties . . . . .	37
3	Legal Proceedings . . . . .	37
4	Mine Safety Disclosures . . . . .	37
PART II		
5	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities . . . . .	38
6	Selected Financial Data . . . . .	39
7	Management's Discussion and Analysis of Financial Condition and Results of Operations . . . . .	40
7A.	Quantitative and Qualitative Disclosures About Market Risk . . . . .	80
8	Financial Statements and Supplementary Data . . . . .	81
9	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure . . . . .	134
9A.	Controls and Procedures . . . . .	135
9B.	Other Information . . . . .	135
PART III		
10	Directors, Executive Officers and Corporate Governance . . . . .	136
11	Executive Compensation . . . . .	138
12	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters . . . . .	138
13	Certain Relationships and Related Transactions, and Director Independence . . . . .	138
14	Principal Accounting Fees and Services . . . . .	138
PART IV		
15	Exhibits, Financial Statement Schedules . . . . .	139
	Exhibits Index . . . . .	140
16	Form 10K Summary . . . . .	145
	Signatures . . . . .	146

# PART I

## Item 1 — Business

### ORGANIZATION

The Hanover Insurance Group, Inc. (“THG”) is a holding company organized as a Delaware corporation in 1995. We trace our roots to as early as 1852, when the Hanover Fire Insurance Company was founded. Our primary business operations are property and casualty insurance products and services. We market our domestic products and services through independent agents and brokers in the United States (“U.S.”) and conduct business internationally through a wholly owned subsidiary, Chaucer Holdings Limited (“Chaucer”), which operates through the Society and Corporation of Lloyd’s (“Lloyd’s”) and is domiciled in the United Kingdom (“U.K.”). Our consolidated financial statements include the accounts of THG; The Hanover Insurance Company (“Hanover Insurance”) and Citizens Insurance Company of America (“Citizens”), which are our principal U.S. domiciled property and casualty subsidiaries; Chaucer; and other insurance and non-insurance subsidiaries. Our results of operations also include the results of our discontinued operations, consisting primarily of our former life insurance and accident and health businesses.

### INFORMATION ABOUT OPERATING SEGMENTS

We conduct our business operations through four operating segments. These segments are Commercial Lines, Personal Lines, Chaucer and Other. We report interest expense related to our corporate debt separately from the earnings of our operating segments.

Information with respect to each of our segments is included in “Results of Operations – Segments” in Management’s Discussion and Analysis of Financial Condition and Results of Operations and in Note 14 – “Segment Information” in the Notes to the Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

Information with respect to geographic concentrations is included in the “Description of Business by Segment” in Part 1 – Item 1 and in Note 14 – “Segment Information” in the Notes to the Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

The following is a discussion of our operating segments.

#### GENERAL

In our Commercial Lines and Personal Lines segments, we underwrite commercial and personal property and casualty insurance through Hanover Insurance, Citizens and other THG subsidiaries, through an independent agent and broker network concentrated in the Northeast,

Midwest and Southeast U.S. We also continue to actively grow our Commercial Lines’ presence in the Western region of the U.S., particularly in California, which now is our largest state for Commercial Lines as measured by net premiums written. Our Chaucer segment is a specialist insurance underwriting group which operates through Lloyd’s and writes business globally. Included in our Other segment are Opus Investment Management, Inc. (“Opus”), a wholly owned subsidiary of THG, which provides investment management services to our insurance and non-insurance companies, as well as to unaffiliated institutions, pension funds and other organizations; earnings on holding company assets; and a discontinued voluntary pools business.

Our business strategy focuses on providing our agents and customers stability, financial strength, and competitive insurance products while prudently growing and diversifying our product and geographical business mix. We conduct our U.S. business with an emphasis on agency relationships and active agency management, disciplined underwriting, pricing, quality claim handling, and customer service. Our Lloyd’s business is focused on disciplined and specialized underwriting in selected markets. Annually, we write over \$5 billion in gross premiums, including approximately \$4 billion domestically. Based on net U.S. premiums written, we rank among the top 25 property and casualty insurers in the United States.

#### RISKS

The industry’s profitability and cash flow can be, and historically has been, significantly affected by numerous factors, including price; competition; volatile and unpredictable developments, such as extreme weather conditions, catastrophes and other disasters; legal and regulatory developments affecting pricing, underwriting, policy coverage and other aspects of doing business, as well as insurer and insureds’ liability; extra-contractual liability; size of jury awards; acts of terrorism; fluctuations in interest and currency rates or the value of investments; and other general economic conditions and trends, such as inflationary pressure or unemployment, that may affect the adequacy of reserves or the demand for insurance products. Our investment portfolio and its future returns may be further impacted by the capital markets and current economic conditions, which could affect our liquidity, the amount of realized losses and impairments that will be recognized, credit default levels, our ability to hold such investments until recovery and other factors. Additionally, the economic conditions in geographic locations where we conduct business, especially those locations where our business is concentrated, may affect the growth and profitability of our business. The regulatory environments in

those locations, including any pricing, underwriting or product controls, shared market mechanisms or mandatory pooling arrangements, and other conditions, such as our agency relationships, affect the growth and profitability of our business. Our loss and loss adjustment expense (“LAE”) reserves are based on estimates, principally involving case assessments and actuarial projections, at a given time, of what we expect the ultimate settlement and administration of claims will cost based on facts and circumstances then known, predictions of future events, estimates of future trends in claims frequency and severity and judicial theories of liability, costs of repairs and replacement, legislative activity and other factors. We regularly reassess our estimate of loss reserves and LAE, both for current and past years, and resulting changes have and will affect our reported profitability and financial position.

Reference is also made to “Risk Factors” in Part 1 – Item 1A of this Form 10-K.

## LINES OF BUSINESS

We underwrite commercial and personal property and casualty insurance coverage through our Commercial Lines, Personal Lines and Chaucer operating segments.

### Commercial Lines

Our Commercial Lines segment generated \$2.5 billion, or 50.3%, of consolidated operating revenues and \$2.4 billion, or 50.3%, of net premiums written, for the year ended December 31, 2016.

The following table provides net premiums written by line of business for our Commercial Lines segment.

YEAR ENDED DECEMBER 31, 2016

(in millions, except ratios)

	Net Premiums Written	% of Total
Commercial multiple peril	\$ 792.9	33.6%
Commercial automobile	307.1	13.0
Workers' compensation	285.6	12.1
Other commercial lines:		
Inland marine	231.0	9.8
AIX program business	200.0	8.4
Management and professional liability	195.0	8.3
Surety	68.2	2.9
Specialty property	65.8	2.8
Other	215.9	9.1
Total	\$2,361.5	100.0%

Our Commercial Lines product suite provides agents and customers with products designed for small, middle and specialized markets.

Commercial Lines coverages include:

*Commercial multiple peril* coverage insures businesses against third-party general liability from accidents occurring on their premises or arising out of their operations,

such as injuries sustained from products sold. It also insures business property for damage, such as that caused by fire, wind, hail, water damage (which may include flood), theft and vandalism.

*Commercial automobile* coverage insures 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 property. Commercial automobile policies are often written in conjunction with other commercial policies.

*Workers' compensation* coverage insures employers against employee medical and indemnity claims resulting from injuries related to work. Workers' compensation policies are often written in conjunction with other commercial policies.

*Other commercial lines* is comprised of:

- *inland marine* coverage insures businesses against physical losses to property, such as contractor's equipment, builders' risk and goods in transit, and also covers jewelers block, fine art and other valuables;
- *AIX program business* provides coverage to markets where there are specialty coverage or risk management needs, including commercial multiple peril, workers' compensation, commercial automobile, general liability and other commercial coverages;
- *management and professional liability* coverage provides protection for directors and officers of companies that may be sued in connection with their performance, and errors and omissions protection to companies and individuals against negligence or bad faith, as well as protection for employment practices liability and fidelity and crime;
- *surety* provides businesses with contract surety coverage in the event of performance or non-payment claims, and commercial surety coverage related to fiduciary or regulatory obligations;
- *specialty property* provides insurance to small and medium-sized chemical, paint, solvent and other related manufacturing and distribution companies; and
- *other commercial lines* coverages include monoline general liability, umbrella, healthcare and miscellaneous commercial property. Our healthcare coverage includes product liability, medical professional liability and general liability coverages provided to selected portions of the healthcare industry including eldercare providers, durable medical equipment suppliers, podiatrists and behavioral health specialists.

Our strategy in Commercial Lines focuses on building deep relationships with partner agents through differentiated product offerings, industry segmentation, and franchise value through limited distribution. We continue to

make enhancements to our products and technology platforms that are intended to drive more total account placements in our small commercial and middle market business, while delivering enhanced margins in our specialty businesses. This aligns with our focus of delivering the capabilities that will help broaden the depth and breadth of our partnerships with a limited number of agents.

Our small commercial, middle market and specialty businesses each constitute approximately one-third of our total Commercial Lines business. Small commercial offerings, which generally include premiums of \$50,000 or less, deliver value through product expertise, local presence, and ease of doing business. Middle market accounts require greater claim and underwriting expertise, as well as a focus on industry segments where we can deliver differentiation in the market and value to agents and customers. Small and middle market accounts comprise approximately \$1.5 billion of the Commercial Lines segment. Our specialty lines of business include inland marine, program business, management and professional liability, surety and specialty property.

In our small commercial and middle market businesses, we offer coverages and capabilities in several key industries including technology, schools, and human services organizations, such as non-profit youth and community service organizations. We also provide further segmentation in our core middle market commercial products, including real estate, hospitality, manufacturing, contractors and wholesale distributors.

Part of our strategy is to expand our specialty lines offerings in order to provide our agents and policyholders with a broader product portfolio and to increase our market penetration. As part of our strategy, we have over time acquired various specialized businesses aimed at further diversifying and growing our specialty lines. We used these acquisitions as platforms to expand our product offerings and grow through our existing agency and broker distribution network.

We believe our small commercial capabilities, distinctiveness in the middle market, and continued development of specialty business provides us with a more diversified portfolio of products and enables us to deliver significant value to our agents and policyholders. We believe these efforts will enable us to continue to improve the overall mix of our business and ultimately our underwriting profitability.

#### Personal Lines

Our Personal Lines segment generated \$1.6 billion, or 31.4%, of consolidated operating revenues and \$1.5 billion, or 32.4%, of net premiums written, for the year ended December 31, 2016.

The following table provides net premiums written by line of business for our Personal Lines segment.

YEAR ENDED DECEMBER 31, 2016

(in millions, except ratios)

	Net Premiums Written	% of Total
Personal automobile	\$ 953.6	62.7%
Homeowners	529.7	34.8
Other	37.9	2.5
Total	\$1,521.2	100.0%

Personal Lines coverages include:

*Personal automobile* coverage insures individuals 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.

*Homeowners* coverage insures individuals for losses to their residences and personal property, such as those caused by fire, wind, hail, water damage (excluding flood), theft and vandalism, and against third-party liability claims.

*Other personal lines* are comprised of personal inland marine (jewelry, art, etc.), umbrella, fire, personal watercraft, earthquake and other miscellaneous coverages.

Our strategy in Personal Lines is to build account-oriented business through our partner agencies, with a focus on greater geographic diversification. The market for our Personal Lines business continues to be very competitive, with continued pressure on independent agents from direct writers, as well as from the increased usage of real time comparative rating tools and increasingly sophisticated rating and pricing tools. We maintain a focus on partnering with high quality, value added agencies that stress the importance of consultative selling and account rounding (the conversion of single policy customers to accounts with multiple policies and/or additional coverages). We are focused on making investments that are intended to help us maintain profitability, build a distinctive position in the market, and provide us with profitable growth opportunities. We continue to refine our products and to work closely with these high potential agents to increase the percentage of business they place with us and to ensure that it is consistent with our preferred mix of business. Additionally, we remain focused on further diversifying our state mix beyond the largest historical core states of Michigan, Massachusetts and New York. We expect these efforts to decrease our risk concentrations and our dependency on these three states, as well as to contribute to improved profitability over time.



## Chaucer

Our Chaucer segment generated \$0.9 billion, or 18.1%, of consolidated operating revenues and \$0.8 billion, or 17.4%, of net premiums written, for the year ended December 31, 2016.

The following table provides net premiums written by line of business for our Chaucer segment.

YEAR ENDED DECEMBER 31, 2016

(in millions, except ratios)

	Net Premiums Written	% of Total
Marine and aviation	\$268.7	32.9%
Property	141.8	17.4
Energy	97.5	11.9
Casualty and other	308.1	37.8
Total	\$816.1	100.0%

The Chaucer segment is comprised of international business written through Lloyd's, including:

*Marine and aviation* includes worldwide direct, facultative and treaty business. The marine account provides cover for hull, liability, war, terrorism, aviation war, cargo, political risk and trade credit, specie, fine art and ports and terminals. The aviation account insures airline hull and liability, general aviation, refuellers, aviation products, and satellite.

*Property* includes treaty business, as well as direct and facultative coverage for commercial and industrial risks against physical damage and business interruption. The treaty account covers cedants on a global basis, predominantly on an "excess of loss" basis for both per risk and catastrophe coverage, with a limited amount of proportional treaty and reinsurance assumed business.

*Energy* encompasses exploration and production, construction, downstream, operational power and renewables, insuring against physical damage, business interruption, control of well, seepage and pollution and liabilities. Energy also includes a nuclear account, which provides coverage across the nuclear fuel cycle from raw uranium and nuclear fuel to the shipment and storage of waste, with the majority of the exposure relating to power generation at nuclear power stations. In addition to providing coverage for physical damage to civil nuclear power stations, nuclear also provides limited liability coverage.

*Casualty and other* provides liability coverage internationally, including our expanded U.S. casualty business, for professional and commercial risks on a direct and treaty basis, credit and bond, crime and professional liability coverage for financial institutions, medical malpractice, excess workers' compensation and accident and health. Other lines also encompass liabilities arising from previous participations on risks insured by third-party

Lloyd's syndicates, which provided liability coverage to financial institutions.

Included in Chaucer's net premiums written for the year ended December 31, 2016 was \$236.5 million of business that is assumed through reinsurance treaties. These net premiums written are reflected primarily in the property and casualty and other lines.

Chaucer is a specialist insurance underwriting group that participates in the Lloyd's market through the provision of capital to support the underwriting activities of syndicates at Lloyd's and the ownership of Chaucer Syndicates Limited ("CSL"), a managing agent. CSL manages two syndicates currently underwriting at Lloyd's, for which we provide capital to support their underwriting activities.

Chaucer provides capital to Syndicate 1084, which underwrites a range of property, marine, aviation, casualty and energy products for commercial clients worldwide; and Syndicate 1176, which primarily provides protection against physical damage and limited liability exposures from power generation at nuclear power stations. The energy line of business includes \$18.7 million of net premiums written from Syndicate 1176. Our economic interests in Syndicates 1084 and 1176 were 100% and 57%, respectively, in both the 2016 and 2015 underwriting years.

Chaucer has broad underwriting expertise to support its diversified underwriting portfolio that, we believe, provides many benefits, including capital diversification, volatility management and long-term protection of our underwriting capabilities. We actively manage our portfolio, transferring underwriting capital to increase premium volumes during periods of increased rates, while remaining selective or reducing our capital and premium volumes in those lines where rates are under pressure.

Overall, we believe that the strength and depth of our underwriting teams, together with the broad diversity of our underwriting portfolio and our membership in the Lloyd's market, underpin our ability to manage both the scale and composition of our business. Moreover, these strengths, combined with our continued active management of our portfolio and the underwriting opportunities available, provide a sound basis for the profitable development of the Chaucer business.

## Other

The Other segment consists of: Opus, which provides investment advisory services to affiliates and also manages approximately \$1.4 billion of assets for unaffiliated institutions such as insurance companies, retirement plans and foundations; earnings on holding company assets; and our discontinued voluntary pools business.

## MARKETING AND DISTRIBUTION

We serve a variety of standard, specialty and targeted industry markets. Consistent with our objective to diversify our underwriting risks on a geographic and line of business basis, we currently have a split of approximately one-third each of domestic standard Commercial Lines, international and domestic specialty lines, and domestic standard Personal Lines. Our Commercial and Personal Lines segments, comprising our principal domestic U.S. subsidiaries, distribute our products primarily through an independent agent network. Our Chaucer segment, comprising our international business, distributes primarily through insurance brokers in the Lloyd's market.

### Commercial and Personal Lines

Our Commercial and Personal Lines agency distribution strategy and field structure are designed to maintain a strong focus on local markets and the flexibility to respond to specific market conditions. During 2016, we wrote 20.0% of our Commercial and Personal Lines business in Michigan and 9.5% in Massachusetts. Our structure is a key factor in the establishment and maintenance of productive, long-term relationships with mid-sized, well-

established independent agencies. We maintain 42 local offices across 30 states. The majority of processing support for these locations is provided from Worcester, Massachusetts; Howell, Michigan; Salem, Virginia; and Windsor, Connecticut.

Independent agents account for substantially all of the sales of our Commercial and Personal Lines property and casualty products. Agencies are appointed based on profitability, track record, financial stability, professionalism, and business strategy. Once appointed, we monitor their performance and, subject to legal and regulatory requirements, may take actions as necessary to change these business relationships, such as discontinuing the authority of the agent to underwrite certain products or revising commissions or bonus opportunities. We compensate agents primarily through base commissions and bonus plans that are tied to an agency's written premium, growth and profitability.

We are licensed to sell property and casualty insurance in all fifty states in the U.S., as well as in the District of Columbia. We actively market Commercial Lines policies throughout the U.S. in 37 states and Personal Lines policies in 18 states.

The following table provides our top Commercial and Personal Lines geographical markets based on total net premiums written in the state in 2016.

YEAR ENDED DECEMBER 31, 2016

(in millions, except ratios)

	Commercial Lines		Personal Lines		Total Commercial and Personal Lines	
	Net Premiums Written	% of Total	Net Premiums Written	% of Total	Net Premiums Written	% of Total
Michigan	\$ 125.8	5.3%	\$ 652.4	42.9%	\$ 778.2	20.0%
Massachusetts	165.6	7.0	202.5	13.3	368.1	9.5
New York	233.6	9.9	117.0	7.7	350.6	9.0
California	298.9	12.7	—	—	298.9	7.7
New Jersey	133.2	5.6	55.0	3.6	188.2	4.8
Illinois	102.4	4.3	85.4	5.6	187.8	4.8
Texas	178.4	7.6	—	—	178.4	4.6
Connecticut	55.4	2.3	69.0	4.5	124.4	3.2
Georgia	72.9	3.1	38.1	2.5	111.0	2.9
Maine	61.9	2.6	46.7	3.1	108.6	2.8
Virginia	66.0	2.8	31.9	2.1	97.9	2.5
Florida	78.3	3.3	—	—	78.3	2.0
New Hampshire	41.6	1.8	33.0	2.2	74.6	1.9
Indiana	42.8	1.8	29.9	2.0	72.7	1.9
Wisconsin	40.3	1.7	32.1	2.1	72.4	1.9
Louisiana	38.3	1.6	33.1	2.2	71.4	1.8
Tennessee	42.4	1.8	27.9	1.8	70.3	1.8
North Carolina	58.2	2.5	3.0	0.2	61.2	1.6
Ohio	34.6	1.5	24.8	1.6	59.4	1.5
Minnesota	56.5	2.4	—	—	56.5	1.5
Other	434.4	18.4	39.4	2.6	473.8	12.3
Total	\$2,361.5	100.0%	\$1,521.2	100.0%	\$3,882.7	100.0%

We manage our Commercial Lines portfolio, which includes our core and specialty businesses, with a focus on growth from the most profitable industry segments within our underwriting expertise. Our core business is generally comprised of several coordinated commercial lines of business, including small and middle market accounts, which include targeted industry segments. Such business is split between small accounts, generally having less than \$50,000 in premium, and middle market accounts, those with premium over \$50,000, with most middle market accounts having less than \$250,000 of premium. Additionally, we have multiple specialty lines of business, which include inland marine, program business, management and professional liability, surety and specialty property. The Commercial Lines segment seeks to maintain strong agency relationships as a strategy to secure and retain our agents' best business. We monitor quality of business written through ongoing quality review efforts, accountability for which is shared at the local, regional and corporate levels.

We manage Personal Lines business with a focus on acquiring and retaining quality accounts. Currently, approximately 83% of our policies in force are account business. Approximately 56% of our Personal Lines net premium written is generated in the combined states of Michigan and Massachusetts. In Michigan, based upon direct premiums written for 2016, we underwrite approximately 6% of the state's total market.

Approximately 66% of our Michigan Personal Lines business is in the personal automobile line and 32% is in the homeowners line. Michigan business represents approximately 45% of our total personal automobile net premiums written and 40% our total homeowners net premiums written. In Michigan, we are a principal market for many of our appointed agencies, with approximately \$1.7 million of total direct premiums written per agency in 2016.

Approximately 69% of our Massachusetts Personal Lines business is in the personal automobile line and 28% is in the homeowners line. Massachusetts business represents approximately 15% of our total personal automobile net premiums written and approximately 11% of our total homeowners net premiums written.

We sponsor local and national agent advisory councils to gain the benefit of our agents' insight and enhance our relationships. These councils provide feedback, input on the development of products and services, guidance on marketing efforts, support for our strategies, and assist us in enhancing our local market presence.

## Chaucer

Chaucer underwrites business primarily from Lloyd's brokers and underwriting agencies. We primarily compensate brokers and underwriting agencies through commission payments.

In the Lloyd's market, brokers approach Chaucer with individual insurance and reinsurance risk opportunities for underwriter consideration. Brokers also gain access to Chaucer's products through selected underwriting agencies (also referred to as coverholders), to which Chaucer has granted limited authority to make underwriting decisions on individual risks. In general, risks written through underwriting agencies are smaller in terms of both exposure and premium. Risks are placed in Lloyd's through a subscription placement process whereby generally several syndicates take a share of a contract rather than one insurer taking 100% on a direct basis. This facilitates the spreading of large and complex risks across a number of insurers, while limiting the underwriting risk of each insurer.

We have an international network of offices to improve our access to high quality risks worldwide. This is expected to improve the diversification of our underwriting and our ability to manage our portfolio. We have offices in Denmark to improve access to business opportunities in Continental Europe, in Singapore, which includes an underwriting presence in China and Labuan, Malaysia to improve access to business opportunities in the Asia region, and in Miami, Florida to provide underwriting representation for business opportunities from Latin America. We also have an office in Oslo, Norway, to provide access to the Norwegian and regional North Sea energy sector.

The following table provides a geographical breakdown of Chaucer's total gross premiums written ("GPW") based on the location of risk:

YEAR ENDED DECEMBER 31, 2016

	<i>% of Total GPW in Chaucer Segment</i>
United States	<b>25.8%</b>
Americas, excluding the United States	<b>11.5</b>
Middle East and Africa	<b>6.4</b>
Asia Pacific	<b>5.9</b>
Europe	<b>5.1</b>
United Kingdom	<b>1.9</b>
Worldwide and other <sup>(1)</sup>	<b>43.4</b>
<b>Total</b>	<b>100.0%</b>

(1) "Worldwide and other" comprises insured risks that move across multiple geographic areas due to their mobile nature or insured risks that are fixed in locations that span more than one geographic area. These contracts include, for example, marine and aviation hull, satellite and offshore energy exploration and production risks that can move across multiple geographic areas and assumed risks where the cedant insures risks in two or more geographic zones.



## Other

With respect to our Other segment business, we market our investment advisory services directly through Opus.

### PRICING AND COMPETITION

The property and casualty industry is a very competitive market. Our competitors include national, international, regional and local companies that sell insurance through various distribution channels, including independent agencies, captive agency forces, brokers and direct to consumers through the internet or otherwise. They also include mutual insurance companies, reciprocals and exchanges. In the Commercial and Personal Lines segments, we market through independent agents and brokers and compete for business on the basis of product, price, agency and customer service, local relationships, ratings, and effective claims handling, among other things. We believe that our emphasis on maintaining strong agency relationships and a local presence in our markets, coupled with investments in products, operating efficiency, technology and effective claims handling, enable us to compete effectively. Our broad product offerings in Commercial Lines and total account strategy in Personal Lines are instrumental to our ability to capitalize on these relationships and improve profitability.

We seek to achieve targeted combined ratios in each of our product lines. Targets vary by product and geography and change with market conditions. The targeted combined ratios reflect competitive market conditions, investment yield expectations, our loss payout patterns, and target returns on equity. This strategy is intended to enable us to achieve measured growth and consistent profitability.

For all major product lines, we employ pricing teams which produce exposure and experience-based rating models to support underwriting and pricing decisions. In addition, in the Commercial and Personal Lines segments, we seek to utilize our understanding of local markets to achieve superior underwriting results. We rely on market information provided by our local agents and on the knowledge of staff in the local branch offices. Since we maintain a strong regional focus and a significant market share in a number of states, we can better apply our knowledge and experience in making underwriting and rate setting decisions. Also, we seek to gather objective and verifiable information at a policy level during the underwriting process, including prior loss experience, past driving records and, where permitted, credit histories.

The Commercial and Personal Lines segments are not dependent on a single customer or even a few customers, for which the loss of any one or more would have an adverse effect upon the insurance operations for these segments.

We market Chaucer product offerings through insurance brokers in the Lloyd's specialty market, which provides access to business from clients and coverholders. We are able to attract business through our recognized capability to serve as the lead underwriter in most classes we write, particularly in classes where such lead ability is sought by clients and recognized by following underwriters. This requires significant underwriting and claims handling expertise in very specialized lines of business. Our competitors include large international insurance companies and other Lloyd's managing underwriters. Broker relationships that are ten percent or more of total Chaucer 2016 gross premiums written are with Aon Benfield (18%), Marsh & McLennan Companies (16%), Willis Group (11%) and JLT Group (11%).

### CLAIMS MANAGEMENT

Claims management includes the receipt of initial loss notifications, generation of appropriate responses to claim reports, loss appraisals, identification and handling of coverage issues, determination of whether further investigation is required, retention of legal representation where appropriate, establishment of case reserves, approval of loss payments and notification to reinsurers. Part of our strategy focuses on efficient, timely, and fair claim settlements to meet customer service expectations and maintain valuable independent agent relationships. Additionally, effective claims management is important to our business as claim payments and related loss adjustment expenses are our single largest expenditures.

### Commercial and Personal Lines

We utilize experienced claims adjusters, appraisers, medical specialists, managers and attorneys to manage our claims. Our U.S. property and casualty operations have field claims adjusters located throughout the states and regions in which we do business. Claims field staff members work closely with the independent agents who bound the policies under which coverage is claimed. Claims office adjusting staff is supported by general adjusters for large property and large casualty losses, by automobile and heavy equipment damage appraisers for automobile material damage losses, and by medical specialists whose principal concentration is on workers' compensation and automobile injury cases. Additionally, the claims offices are supported by staff attorneys, both in the home office and in regional locations, who specialize in litigation defense and claim settlements. We have a catastrophe response team to assist policyholders impacted by severe weather events. This team mobilizes quickly to impacted regions, often in advance for a large tracked storm, to support our

local claims adjusters and facilitate a timely response to resulting claims. We also maintain a special unit that investigates suspected insurance fraud and abuse. We utilize claims processing technology which allows most of the smaller and more routine Personal Lines claims to be processed at centralized locations.

#### **Chaucer**

The Chaucer claims team is responsible for establishing case reserves, loss and LAE cost management, exposure mitigation and litigation management. Chaucer engages third-party administrators to handle claims in certain cases and authorizes selected agencies to manage claims under risks which they have bound on Chaucer's behalf.

For claims where Chaucer is the lead syndicate, our appointed claims adjusters establish the case reserves and may appoint attorneys, loss adjusters or other third-party experts. For claims where Chaucer is not the lead syndicate, the Lloyd's syndicate leading the risk establishes case reserves in conjunction with professional third-party adjusters, and then advises all other syndicates participating on the risk of the loss reserve requirements. In such cases, the Chaucer claims team reviews material claims and developments.

#### **CATASTROPHES**

We are subject to claims arising out of catastrophes, which historically have had a significant impact on our results of operations and financial condition. Coverage for such events is a core part of our business, and we expect to experience catastrophe losses in the future, which could have a material adverse impact on our financial results and position. Catastrophes can be caused by various events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, severe winter weather, fire, explosions, and terrorism. The incidence and severity of catastrophes are inherently unpredictable.

#### **Commercial and Personal Lines**

We endeavor to manage our catastrophe risks through underwriting procedures, including the use of deductibles and specific exclusions for floods and earthquakes, subject to regulatory restrictions and competitive pressures, and through geographic exposure management and reinsurance. The catastrophe reinsurance program is structured to protect us on a per-occurrence basis. We monitor geographic location and coverage concentrations in order to manage corporate exposure to catastrophic events. Although catastrophes can cause losses in a variety of property and casualty lines, commercial multiple peril and homeowners property coverages have, in the past, generated the majority of catastrophe-related claims.

#### **Chaucer**

Individual commercial and industrial risks within our property, marine and aviation and energy lines include protection against natural or man-made catastrophes worldwide. We accept these risks on direct, facultative, and proportional and excess of loss treaty bases. We seek to manage such risks through limiting the proportion of any individual risk or class of risk we assume and managing geographic concentration, and through the purchase of reinsurance.

We purchase reinsurance to limit our exposure to individual risks and catastrophic events. This includes facultative reinsurance, to limit the exposure on a specified risk; specific excess and proportional treaty, to limit exposure to individual contracts or risks within specified classes of business; and catastrophe excess of loss reinsurance, to limit exposure to any one event that might affect more than one individual contract.

The level of reinsurance that Chaucer purchases is dependent on a number of factors, including our underwriting risk appetite for catastrophe risk, the specific risks inherent in each line or class of business risk written and the pricing, coverage and terms and conditions available from the reinsurance market.

#### **TERRORISM**

As a result of the continuing threat of terrorist attacks worldwide, the insurance industry maintains a high level of focus with respect to the potential for losses caused by terrorist acts. These losses may encompass people, property and business operations covered under workers' compensation, commercial multiple peril and other Commercial Lines policies. In certain cases, we are not able to exclude coverage for these losses, either because of regulatory requirements or competitive pressures. We continually evaluate the potential effect of these low frequency, but potentially high severity events in our overall pricing and underwriting plans, especially for policies written in major metropolitan areas.

Private sector catastrophe reinsurance is limited and generally unavailable for losses attributed to acts of terrorism, particularly those involving nuclear, biological, chemical and/or radiological events. As a result, the industry's primary reinsurance protection against large-scale terrorist attacks in the U.S. is provided through a Federal program that provides compensation for insured losses resulting from acts of terrorism. Additionally, certain terrorism-related risks embedded in our Commercial and Personal Lines are covered under the existing Catastrophe, Property per Risk and Casualty Excess of Loss corporate reinsurance treaties (see "Reinsurance" for additional information).

The Terrorism Risk Insurance Act of 2002 established the Terrorism Risk Insurance Program (the “U.S. Program”). Coverage under the U.S. Program applies to workers’ compensation, commercial multiple peril and certain other Commercial Lines policies for U.S. direct written policies. The Terrorism Risk Insurance Program Reauthorization Act of 2015 (“TRIPRA”) extended the U.S. Program through December 31, 2020. All commercial property and casualty insurers licensed in the U.S. participate in the program. Under the program, a participating issuer, in exchange for making terrorism insurance available, may be entitled to be reimbursed by the Federal Government for a portion of its aggregate losses. The U.S. Program does not cover losses in surety, Personal Lines or certain other lines of business. Losses caused by terrorist acts are not excluded from homeowners or personal automobile policies.

As required by the current U.S. Program, we offer policyholders in specific lines of commercial insurance the option to elect terrorism coverage. In order for a loss to be covered under the U.S. Program, the loss must meet aggregate industry loss minimums and must be the result of an act of terrorism as certified by the Secretary of the Treasury in consultation with the Secretary of Homeland Security and the U.S. Attorney General. Losses from acts which do not qualify or are not so certified will not receive the benefit of the U.S. Program and in fact, may be deemed covered losses whether or not terrorism coverage was purchased. The current U.S. Program requires insurance carriers to retain 17% of any claims from a certified terrorist event in excess of the federally mandated deductible in 2017, subject to an annual industry-wide cap of \$100 billion. This retention will increase by 1% each calendar year until it reaches 20% in 2020. The federally mandated deductible represents 20% of direct earned premium for the covered lines of business of the prior year. In 2016, our deductible was \$381 million, which represents 17.4% of year-end 2015 statutory policyholder surplus of our U.S. domestic insurers, and is estimated to be \$396 million in 2017, representing 18.2% of 2016 year-end statutory policyholder surplus.

Given the unpredictability of terrorism losses, future losses from acts of terrorism could be material to our operating results, financial position, and/or liquidity. We attempt to manage our exposures on an individual line of business basis and in the aggregate by one-half square mile grids.

Chaucer’s direct written U.S. policies are also covered under the provisions of TRIPRA. Generally, terrorism coverage is excluded from the commercial property classes and coverages that Chaucer writes, including in its worldwide nuclear energy business, although a limited portion of Chaucer’s property and political risk business outside of the U.S. provides terrorism coverage. We manage this exposure through policy limits, monitoring of risk aggregation and reinsurance. For Chaucer’s nuclear energy business, most of our liability coverage includes losses resulting from acts of terrorism, although Chaucer normally ensures that the net liability involved does not exceed 50% of the full exposure, whether property, liability or combined.

## REGULATION

### Commercial and Personal Lines

Our U.S. property and casualty insurance subsidiaries are subject to extensive regulation in the various states in which they transact business and are supervised by the individual state insurance departments. Numerous aspects of our business are subject to regulation, including premium rates, mandatory covered risks, limitations on the ability to non-renew or reject business, prohibited exclusions, licensing and appointment of agents, 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, investments and capital, policy forms and coverages, advertising, and other conduct, including restrictions on the use of credit information and other factors in underwriting, as well as other underwriting and claims practices. States also regulate various aspects of the contractual relationships between insurers and independent agents.

Such laws, rules and regulations are usually overseen and enforced by the various state insurance departments, as well as through private rights of action and increasingly, by state attorneys general. Such regulations or enforcement actions are often responsive to current consumer and political sensitivities, such as automobile and homeowners insurance rates and coverage forms, or which may arise after a major event. Such rules and regulations may result in rate suppression, limit our ability to manage our exposure to unprofitable or volatile risks, or lead to fines, premium refunds or other adverse consequences. The federal government also may regulate aspects of our businesses, such as the use of insurance (credit) scores in underwriting and the protection of confidential information.

In addition, as a condition to writing business in certain states, insurers are required to participate in various pools or risk sharing mechanisms or to accept certain classes of risk, regardless of whether such risks meet its underwriting requirements for voluntary business. Some states also limit or impose restrictions on the ability of an insurer to withdraw from certain classes of business. For example, Massachusetts, New York, and California each impose material restrictions on a company's ability to materially reduce its exposures or to withdraw from certain lines of business in their respective states. The state insurance departments can impose significant charges on an insurer in connection with a market withdrawal or refuse to approve withdrawal plans on the grounds that they could lead to market disruption. Laws and regulations that limit cancellation and non-renewal of policies or that subject withdrawal plans to prior approval requirements may significantly restrict our ability to exit unprofitable markets.

Over the past several years, other state-sponsored insurers, reinsurers or involuntary pools have increased, particularly in those states which have Atlantic or Gulf Coast storm exposures. As a result, the potential assessment exposure of insurers doing business in such states and the attendant collection risks have increased. Such actions and related regulatory restrictions may limit our ability to reduce our potential exposure to hurricane-related losses.

The insurance laws of many states subject property and casualty insurers doing business in those states to statutory property and casualty guaranty fund assessments. The purpose of a guaranty fund is to protect policyholders by requiring that solvent property and casualty insurers pay the insurance claims of insolvent insurers. These guaranty associations generally pay these claims by assessing solvent insurers proportionately based on the insurer's share of voluntary premiums written in the state. While most guaranty associations provide for recovery of assessments through subsequent rate increases, surcharges or premium tax credits, there is no assurance that insurers will ultimately recover these assessments, which could be material, particularly following a large catastrophe or in markets which become disrupted.

We are subject to periodic financial and market conduct examinations conducted by state insurance departments. We are also required to file annual and other reports with state insurance departments relating to the financial condition of our insurance subsidiaries and other matters. The National Association of Insurance Commissioners ("NAIC") and the Federal Insurance Office are each actively engaged in reviewing and considering proposed insurer risk-based capital standards, risk analysis, solvency assessments and other regulatory initiatives.

## Chaucer

Chaucer is regulated by both the Prudential Regulation Authority ("PRA") and the Financial Conduct Authority ("FCA"), who together have responsibility for the U.K. financial services industry, including insurers, insurance intermediaries and the Lloyd's market. The PRA is responsible for the prudential supervision of, among other financial institutions, the Lloyd's market, with a particular focus on financial stability. The FCA focuses on conduct of business issues, with a particular focus on consumer protection and market integrity. In addition, Chaucer is supervised by the Council of Lloyd's, which is the franchisor for all Lloyd's operations.

The PRA, FCA and Council of Lloyd's have common objectives in ensuring the appropriate regulation of the Lloyd's market and, to minimize duplication, the PRA and FCA have arrangements with Lloyd's for co-operation on supervision and enforcement. Lloyd's, which is regulated by both the PRA and FCA, has responsibility under the Lloyd's Act 1982 ("the Lloyd's Act") for the implementation of certain PRA and FCA prescribed rules relating to the operation of the Lloyd's market. Lloyd's prescribes, in respect of its managing agents and corporate members, minimum standards relating to their management and control, solvency and various other requirements. The PRA and FCA directly monitor compliance of Lloyd's managing agents with the systems and controls that Lloyd's prescribes.

The Council of Lloyd's has wide discretionary powers to regulate Lloyd's underwriting. For example, it may change the basis of allocation for syndicate expenses or the capital requirements for syndicate participations. Exercising any of these powers might affect the return on an investment of the corporate member, such as Chaucer, in a given underwriting year. In addition, the annual business plans of each syndicate are subject to the review and approval of the Lloyd's Franchise Board, which is responsible for business planning and monitoring for all syndicates.

We participate in the Lloyd's market through our ownership of CSL, a managing agent with responsibility for the management of Syndicates 1084 and 1176, for which we provide capital to support their underwriting activities. Our membership in Lloyd's requires us to comply with its bylaws and regulations, the Lloyd's Act and the applicable provisions of the Financial Services and Markets Act of 2000. These include the requirement to provide capital (referred to as "Funds at Lloyd's") in the form of cash, securities or letters of credit in an amount agreed with by Lloyd's under the capital setting regime of the PRA. The



completion of an annual capital adequacy exercise enables each corporate member to calculate the capital required. These requirements allow Lloyd's to evaluate whether each corporate member has sufficient assets to meet its underwriting liabilities plus a required solvency margin.

If a corporate member of Lloyd's is unable to meet its policyholder obligations, such obligations may be payable by the Lloyd's Central Fund, which acts similar to a state guaranty fund in the U.S. If Lloyd's determines that the Central Fund needs to be increased, it has the power to assess premium levies on all current Lloyd's members. The Council of Lloyd's has discretion to call or assess up to 3% of a member's underwriting capacity as a Central Fund contribution.

### ***Solvency II***

The European Union ("E.U.") has adopted a directive, known as Solvency II, covering capital requirements, risk management and regulatory reporting for insurance organizations that imposes economic risk-based solvency requirements across all E.U. member states that comprise three pillars. First, there are quantitative capital requirements, based on a valuation of the entire balance sheet of an insurance organization. Second, Solvency II requires insurance organizations to undertake a qualitative regulatory review, including governance, internal controls, enterprise risk management and the supervisory review process. Third, to enhance market discipline, insurance organizations must report their financial conditions to regulators. We believe that we are in compliance with this regulatory regime, which commenced January 1, 2016.

### ***Other***

In addition to the U.K. and E.U. regulations, Chaucer is subject to regulation in the U.S through the Lloyd's market. The Lloyd's market has licenses to engage in insurance business in Illinois, Kentucky and the U.S. Virgin Islands and operates as an eligible excess and surplus lines insurer in all other states and territories. Lloyd's is also an accredited reinsurer in all states and territories. Lloyd's maintains various trust funds in the state of New York to protect its U.S. business and is subject to regulation by the New York Insurance Department, which acts as the domiciliary department for Lloyd's U.S. trust funds. There are also deposit trust funds in other U.S. states to support Lloyd's excess and surplus lines insurance and reinsurance business.

See also Note 18 — "Commitments and Contingencies" in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

### ***INVOLUNTARY RESIDUAL MARKETS***

As a condition of our license to write business in various domestic states and international jurisdictions, we are required to participate in mandatory property and casualty residual market mechanisms which provide insurance coverages where such coverage may not otherwise be available at rates deemed reasonable. Such mechanisms provide coverage primarily for personal and commercial property, personal and commercial automobile, and workers' compensation, and include assigned risk plans, reinsurance facilities and involuntary pools, joint underwriting associations, fair access to insurance requirements ("FAIR") plans, and commercial automobile insurance plans.

For example, since most states compel the purchase of a minimal level of automobile liability insurance, states have developed shared market mechanisms to provide the required coverages and in many cases, optional coverages, to those drivers who, because of their driving records or other factors, cannot find insurers who will insure them voluntarily. Also, FAIR plans and other similar property insurance shared market mechanisms increase the availability of property insurance in circumstances where homeowners are unable to obtain insurance at rates deemed reasonable, such as in coastal areas or in areas subject to other hazards. Licensed insurers writing business in such states are often required to pay assessments to cover reserve deficiencies generated by such plans.

With respect to FAIR plans and other similar property insurance shared market mechanisms that have significant exposures, it is difficult to accurately estimate our potential financial exposure for future events. Assessments following a large coastal event, particularly one affecting Massachusetts, Florida, Louisiana or New York, could be material to our results of operations. Our participation in such shared markets or pooling mechanisms is generally proportional to our direct writings for the type of coverage written by the specific pooling mechanism in the applicable state or other jurisdiction. For example, we are subject to mandatory participation in the Michigan Assigned Claims ("MAC") facility. MAC is an assigned claim plan covering people injured in uninsured motor vehicle accidents. Our participation in the MAC facility is based on our share of personal and commercial automobile direct written premium in the state and resulted in underwriting losses of \$11.7 million in 2016, \$12.1 million in 2015 and \$11.7 million in 2014. There were no other mandatory residual market mechanisms that were significant to our 2016, 2015 or 2014 results of operations.

## RESERVE FOR UNPAID LOSSES AND LOSS ADJUSTMENT EXPENSES

Reference is made to “Results of Operations – Segments – Reserve for Losses and Loss Adjustment Expenses” of Management’s Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K.

The following table reconciles reserves determined in accordance with accounting practices prescribed or permitted by U.S. insurance statutory authorities (“U.S. Statutory”) and the U.K. financial services regulatory authorities (“U.K. Statutory”) for our domestic and Chaucer operations, respectively, to reserves determined in accordance with generally accepted accounting principles in the United States of America (“U.S. GAAP”). The primary difference between the U.S. Statutory reserves and our U.S. GAAP reserves is the requirement, on a U.S. GAAP basis, to present reinsurance recoverables as an asset, whereas U.S. Statutory guidance provides that reserves are reflected net of the corresponding reinsurance recoverables. There are no significant differences between U.K. Statutory reserves and our U.S. GAAP reserves. We do not use discounting techniques in establishing U.S. GAAP reserves for losses and LAE, nor have we participated in any loss portfolio transfers or other similar transactions.

DECEMBER 31	2016	2015	2014
(in millions)			
U.S. Statutory reserve for losses and LAE	<b>\$3,402.1</b>	\$2,995.6	\$2,819.0
U.K. Statutory reserve for losses and LAE	<b>2,289.4</b>	2,369.4	2,421.0
Total Statutory reserve for losses and LAE	<b>5,691.5</b>	5,365.0	5,240.0
U.S. GAAP adjustments:			
Reinsurance recoverables on unpaid losses of our U.S. insurance subsidiaries	<b>1,349.2</b>	1,295.3	1,256.3
Reserves for discontinued operations	<b>(88.8)</b>	(89.2)	(113.6)
Other	<b>(2.5)</b>	3.3	9.0
U.S. GAAP reserve for losses and LAE	<b>\$6,949.4</b>	\$6,574.4	\$6,391.7

Reserves for discontinued operations of our U.S. insurance subsidiaries are included in liabilities of discontinued operations for U.S. GAAP and loss and loss adjustment expenses for Statutory reporting.

## ANALYSIS OF LOSS AND LOSS ADJUSTMENT EXPENSE RESERVE DEVELOPMENT

Information regarding loss and loss adjustment expense reserve development appears in Note 17 – “Liabilities For Outstanding Claims, Losses and Loss Adjustment Expenses” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

Conditions and trends that have affected reserve development in the past will not necessarily recur in the future. As discussed under “Reserving Process Overview” in Management’s Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K, our historical loss experience and loss development patterns are important factors in estimating loss reserves, however, they are not the only factors we evaluate to establish reserves. The process for establishing reserves is subject to considerable variability and requires the use of informed estimates and judgments. Important details, such as specific loss development expectations for particular years, events or individual insurance contracts cannot be determined by analyzing the highly summarized information provided within this annual report. In addition to analyzing loss data and development patterns at a more granular level, we incorporate additional information into our reserving process, such as pricing and market conditions, the presence or absence of large losses including catastrophes, changes in our business mix, including the split of short-tailed and long-tailed classes of business, and other factors. In this regard, a mechanical application of standard actuarial methodologies in evaluating the adequacy of our reserves and extrapolating future favorable or unfavorable development would not be appropriate, in particular as it relates to Chaucer.

Additionally, due to the highly specialized nature of the Lloyd’s business, many of our business classes at Chaucer are characterized by low frequency, but potentially high severity loss events. This results in claims experience and development patterns that are less predictable and more volatile than most of our domestic Personal and Commercial lines businesses. In addition, Chaucer’s reinsurance business and high excess property layers often experience delays in claim reporting which increases the risk of delayed recognition of loss reserve development. Thus additional knowledge and understanding of the exposures and often complex underlying claims issues is required to arrive at a reliable reserve. Also, the composition of the Chaucer portfolio has changed meaningfully throughout the period since our acquisition in 2011, making historical reserve development patterns less relevant to

our current business mix. Therefore, a mechanical application of standard actuarial methodologies in projecting ultimate claims could result in materially different reserves to those held. Accordingly, it is not appropriate to extrapolate future favorable or unfavorable development based on amounts experienced in prior periods.

## REINSURANCE

### Reinsurance Program Overview

We maintain ceded reinsurance programs designed to protect against large or unusual loss and LAE activity. We utilize a variety of reinsurance agreements, which are intended to control our individual policy and aggregate exposure to large property and casualty losses, stabilize earnings and protect capital resources. These programs include facultative reinsurance (to limit exposure on a specified policy); specific excess and proportional treaty reinsurance (to limit exposure on individual policies or risks within specified classes of business); and catastrophe excess of loss reinsurance (to limit exposure to any one event that might impact more than one individual contract). Catastrophe reinsurance protects us, as the ceding insurer, from significant losses arising from a single event including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, severe winter weather, fire, explosions and terrorism. We determine the appropriate amount of reinsurance based upon our evaluation of the risks insured, exposure analyses prepared by consultants, our risk appetite and on market conditions, including the availability and pricing of reinsurance.

We cede to reinsurers a portion of our risk based upon insurance policies subject to such reinsurance. Reinsurance contracts do not relieve us from our obligations to policyholders. Failure of reinsurers to honor their obligations could result in losses to us. We believe that the terms of our reinsurance contracts are consistent with industry practice in that they contain standard terms with respect to lines of business covered, limit and retention, arbitration and occurrence. We believe our reinsurers are financially sound, based upon our ongoing review of their financial statements, financial strength ratings assigned to them by rating agencies, their reputations in the reinsurance marketplace, our collections history, advice from third parties, and the analysis and guidance of our reinsurance advisors.

Although we exclude coverage of nuclear, chemical or biological events from the Personal Lines and Commercial Lines policies we write in the U.S., we are statutorily required to provide this coverage in our workers' compensation policies. We have workers' compensation reinsurance coverage under our casualty reinsurance treaty of approximately \$80 million for terrorism losses, limited to approximately \$10 million for losses that result from

nuclear, chemical or biological events. All other U.S.-based exposure or treaties exclude such coverage. Further, under TRIPRA, our retention of U.S. domestic losses in 2017 from such events, if deemed certified terrorist events, is limited to 17% of losses in excess of an approximate \$396 million deductible, up to a combined annual aggregate limit for the federal government and all insurers of \$100 billion. Such events could be material to our financial position or results of operations. See "Terrorism" for additional information.

Reference is made to Note 16 — "Reinsurance" in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K. Reference is also made to "Involuntary Residual Markets".

### Commercial and Personal Lines

Our 2017 reinsurance program for our Commercial Lines and Personal Lines segments is substantially consistent with our 2016 program design. The following discussion summarizes both our 2016 and 2017 reinsurance programs for our Commercial Lines and Personal Lines segments (excluding coverage available under the U.S. federal terrorism program which is described under "Terrorism"), but does not purport to be a complete description of the program or the various restrictions or limitations which may apply:

- Our Commercial Lines and Personal Lines segments were primarily protected by a property catastrophe occurrence treaty, a property per risk excess of loss treaty, as well as a casualty excess of loss treaty, with retentions of \$200 million, \$2 million, and \$2 million, respectively. We have lower retentions in place for certain lines, as discussed below.
- The property catastrophe occurrence treaty provides coverage, on an occurrence basis, up to \$1.1 billion countrywide, less a \$200 million retention, with no co-participation, for all defined perils.
- The property per risk excess of loss treaty provides coverage, on a per risk basis, up to \$100 million, less a \$2 million retention, with no co-participations.
- The casualty excess of loss treaty provides coverage, on a per occurrence basis for each loss, up to \$75 million less a \$2 million retention, with no co-participation. Umbrella and excess liability lines share coverage with casualty lines within the \$2 million to \$10 million layers, subject to a maximum umbrella limit of \$5 million. There is also separate umbrella and excess liability only coverage that provides protection for the \$5 million to \$25 million layer. The casualty program provides coverage for management liability and healthcare lines in a \$1 million to \$2 million layer, with co-participation of 50% for management liability.

- For 2016 and 2017, Commercial Lines segments are further protected by excess of loss treaty agreements for specific lines of business. For example, the surety and fidelity bond excess of loss treaty provides coverage, on a per principal basis, up to \$40 million, less a \$5 million retention, with co-participations ranging from 5% to 30% for individual layers placed within the treaty.
- In addition to certain layers of coverage from our Commercial and Personal Lines segment reinsurance program as described above, the Commercial Lines AIX Holdings, Inc. ("AIX") program business also includes surplus share, quota share, excess of loss, facultative and other forms of reinsurance that cover the writings from AIX specialty and proprietary programs. There are approximately 48 different AIX programs, and the reinsurance structure is customized to fit the exposure profile for each program.

Our intention is to renew the surety and fidelity bond treaty, the property per risk excess of loss treaty and the property catastrophe treaty in July 2017 with the same or similar terms and conditions, but there can be no assurance that we will be able to maintain our current levels of reinsurance, pricing and terms and conditions. Our 2017 casualty excess of loss treaty is effective January 1, 2017 for a twelve month period.

#### Chaucer

Chaucer's 2017 reinsurance program is substantially consistent with the 2016 program design. The 2016 and 2017 Chaucer reinsurance programs contain a combination of reinsurance treaties that either provide coverage across several lines or are specific to individual lines of business or classes of business within certain lines. Generally, for each line or class of Chaucer's business, there are a variety of proportional, excess of loss (mainly occurrence basis), facultative and other treaty forms, which work in conjunction to manage against severity, and to a certain extent, frequency. Chaucer's 2017 net retentions are generally consistent with the 2016 levels.

The Chaucer programs described below are substantially in place as of February 1, 2017 and we expect to implement throughout the year any remaining parts of the program as described; however, there can be no assurances that we will be successful in placing reinsurance for each line as planned. The following discussion summarizes both our 2016 and 2017 reinsurance programs for the Chaucer segment, but does not purport to be a complete description of the program or the various restrictions or limitations which may apply. The limit figures below are presented net of treaty co-participation.

We purchase proportional and non-proportional reinsurance, which is intended to provide sufficient underwriting capacity to effectively conduct business in the Lloyd's market and to protect against frequency and severity of losses.

For the property lines reinsurance coverage in 2016 and 2017:

- The direct property catastrophe occurrence reinsurance for selected international territories provides coverage up to approximately \$44 million and \$45 million, respectively, less retentions of approximately \$8 million for both years.
- The assumed property catastrophe reinsurance for selected international territories provides coverage up to approximately \$108 million and \$140 million, less retentions of approximately \$19 million and \$15 million, respectively. Additionally, the assumed property catastrophe occurrence reinsurance for the United States provides coverage up to approximately \$114 million and \$150 million, respectively, less retentions of approximately \$25 million for both years.
- The direct property per risk excess of loss reinsurance provides coverage up to approximately \$10 million and \$15 million, respectively, less retentions of approximately \$3 million for both years.
- The assumed property per risk excess of loss reinsurance provides coverage up to approximately \$10 million for both years, less retentions of approximately \$5 million for both years.

The casualty direct and facultative portfolio has reinsurance coverage in 2016 and 2017 of up to approximately \$38 million and \$50 million, respectively, less a retention of approximately \$2 million for both years. The U.S. casualty treaty portfolio has workers' compensation catastrophe reinsurance coverage of up to \$78 million in 2016 and 2017, less a retention of \$8 million for both years.

For the energy, marine and aviation lines reinsurance coverage in 2016 and 2017:

- The nuclear energy lines occurrence reinsurance provides coverage up to approximately \$163 million and \$174 million, less retentions of approximately \$42 million and \$46 million, respectively, at consistent rates of exchange.
- The non-nuclear energy lines occurrence reinsurance provides coverage up to approximately \$140 million and \$130 million, less retentions of approximately \$15 million and \$13 million, respectively.



- The direct marine lines excess of loss reinsurance provides coverage, on a per occurrence basis, up to approximately \$102 million and \$105 million, respectively, less retentions of approximately \$5 million for both years.
- The assumed marine excess of loss reinsurance provides coverage, on an occurrence basis, up to approximately \$37 million and \$42 million, respectively, less retentions of approximately \$6 million for both years.
- The direct political violence lines reinsurance provides coverage, on a per occurrence basis, up to approximately \$107 million and \$115 million, respectively, less retentions of approximately \$8 million for both years.
- The direct political risks lines reinsurance provides coverage on a per risk basis, up to approximately \$13 million and \$15 million, respectively, less retentions of \$3 million for both years. The direct credit lines reinsurance provides coverage on a per risk basis, up to approximately \$7 million and \$8 million, respectively, less retentions of \$3 million for both years. In addition, event coverage is provided for both lines of business up to \$33 million, less retentions of \$13 million for both years.
- The aviation lines reinsurance provides coverage, on a per occurrence basis, up to approximately \$63 million and \$68 million, respectively, less retentions of approximately \$3 million for both years.

For Chaucer's 2016 U.S. casualty treaty lines, we have entered into a whole account aggregate excess of loss contract. The contract covers the U.S. casualty treaty lines exposures, except specialty risks and workers' compensation claim, and provides coverage up to a 117% loss ratio, less retention of a 47% loss ratio. This contract does not meet the risk transfer requirements of GAAP and is accounted for using the deposit accounting method. The deposit asset for this contract was approximately \$28 million as of December 31, 2016. For 2017, we expect to renew this treaty with similar coverage, terms and conditions and will evaluate whether it meets risk transfer requirements at the time of placement.

#### Reinsurance Recoverables

Other than our investment portfolio, the single largest asset class is our reinsurance receivables, which consist of our estimate of amounts recoverable from reinsurers with respect to losses incurred to date (including losses incurred but not reported) and unearned premiums, net of amounts estimated to be uncollectible. This estimate depends upon a number of factors, including an estimate of the amount of reserves attributable to business written in various lines and in various years. This estimate is

expected to be revised at each reporting period and such revisions, which could be material, affect our results of operations and financial position. Reinsurance recoverables include amounts due from both United States and state mandatory reinsurance or other risk sharing mechanisms, and private reinsurers to whom we have voluntarily ceded business.

We are subject to concentration of risk with respect to reinsurance ceded to various mandatory residual markets, facilities and pooling mechanisms. As a condition to conduct business in various states, we are required to participate in residual market mechanisms, facilities and pooling arrangements which usually are designed to provide insurance coverages to individuals or other entities that are otherwise unable to purchase such coverage voluntarily or at rates deemed reasonable. These market mechanisms, facilities and pooling arrangements comprise \$925.9 million of our total reinsurance recoverables on paid and unpaid losses and unearned premiums at December 31, 2016 and include, among others, the Michigan Catastrophic Claims Association ("MCCA").

The MCCA is a mandatory reinsurance association which reinsures claims under Michigan's unlimited personal injury protection coverage which is required under all Michigan automobile insurance policies. The MCCA reinsures all such claims in excess of a statutorily established company retention, currently \$545,000. Funding for MCCA comes from assessments against automobile insurers based upon their share of insured automobiles in the state. Insurers are allowed to pass along this cost to Michigan automobile policyholders. This recoverable accounted for 64% of our total personal automobile gross reserves at December 31, 2016 and 2015. Reinsurance recoverables related to MCCA were \$911.2 million and \$906.5 million at December 31, 2016 and 2015, respectively. Because the MCCA is supported by assessments permitted by statute, and there have been no significant uncollectible balances from MCCA identified during the three years ending December 31, 2016, we believe that we have no significant exposure to uncollectible reinsurance balances from this entity.

In addition to the reinsurance ceded to various residual market mechanisms, facilities and pooling arrangements we have \$1,685.9 million of reinsurance assets due from traditional reinsurers as of December 31, 2016. These amounts are due principally from highly-rated reinsurers, defined as rated A- or higher by A.M. Best Rating Agency or other equivalent rating. The following table displays balances recoverable from our ten largest reinsurance groups at December 31, 2016, along with the group's rating from the indicated rating agency. The contractual obligations under reinsurance agreements are typically with individual

subsidiaries of the group or syndicates at Lloyd's and are not typically guaranteed by other group members or syndicates at Lloyd's. Reinsurance recoverables are comprised of paid losses recoverable, outstanding losses recoverable, incurred but not reported losses recoverable, and ceded unearned premium.

<i>(in millions)</i>		
<i>Reinsurers</i>	<i>A.M. Best Rating</i>	<i>Reinsurance Recoverable</i>
Lloyd's Syndicates	A	\$ 506.8
Munich Reinsurance Companies	A+	160.2
HDI Group	A	137.9
Alleghany Corporation	A	102.9
XL Group PLC	A	97.6
Swiss Re Ltd.	A+	68.7
Partner Re Ltd. Companies	A	63.0
Toa Reinsurance Company Ltd.	A+	57.4
Third Point Reinsurance Ltd.	A-	54.4
Aspen Insurance Holdings Ltd.	A	34.6
Subtotal		1,283.5
All other reinsurers		402.4
Residual markets, facilities and pooling arrangements		925.9
Total		\$2,611.8

Reinsurance recoverable balances in the table above are shown before consideration of balances owed to reinsurers and any potential rights of offset, including collateral held by us, and are net of an allowance for uncollectible recoverables. Reinsurance treaties are generally purchased on an annual basis. Treaties typically contain provisions that allow us to demand that a reinsurer post letters of credit or assets as security if a reinsurer is an unauthorized reinsurer under applicable regulations or if its rating falls below a predetermined contractual level. In regards to reinsurance recoverables due from Lloyd's Syndicates, as part of the Lloyd's "chain of security" afforded to all of its policyholders, recourse is available to the Lloyd's Central Fund in the event of the failure of an individual syndicate and its capital providers.

Although reinsurance makes the reinsurer liable to us to the extent the risk is transferred or ceded to the reinsurer, ceded reinsurance arrangements do not eliminate our obligation to pay claims to our policyholders. Accordingly, we bear credit risk with respect to our reinsurers. Specifically, our reinsurers may not pay claims made by us on a timely basis, or they may not pay some or all of these claims. In addition, from time to time insurers and reinsurers may disagree on the scope of the reinsurance or on the underlying insured risks. Any of these events would increase our costs and could have a material adverse effect on our business.

We have established a reserve for uncollectible reinsurance of \$13.1 million as of December 31, 2016, or 0.5% of the total reinsurance recoverable balance, which was determined by considering reinsurer specific default risk on paid and unpaid recoverables as indicated by their financial strength ratings, any ongoing solvency issues, any current risk of dispute on paid recoverables, our collection experience and the development of our ceded loss reserves. There have been no significant balances determined to be uncollectible and thus no significant charges recorded during 2016 for uncollectible reinsurance recoverables.

Our exposure to credit risk from any one reinsurer is managed through diversification by reinsuring with a number of different reinsurers, principally in the United States and European reinsurance markets. When reinsurance for our Commercial and Personal Lines segments is placed, our standards of acceptability generally require that a reinsurer must have a minimum policyholder surplus of \$500 million, a rating from A.M. Best and/or S&P of "A" or better, or an equivalent financial strength if not rated. Similarly, the Chaucer segment generally requires all reinsurers to have a rating from S&P of "A-" or better and minimum level of net assets of \$500 million. In addition, for lower rated reinsurers, certain reinsurers for our United States insurance operations that have not been granted authorized status by an insurance company's state of domicile, and in certain other circumstances, reinsurers must generally provide collateral equal to 100% of estimated reinsurance recoverables. The collateral can serve to mitigate credit risk.

## DISCONTINUED OPERATIONS

Discontinued operations primarily include our former life insurance businesses, which were sold prior to 2009, and our discontinued accident and health business.

Our former life insurance businesses include indemnity obligations for which we have established reserves.

The discontinued accident and health business includes interests in 25 accident and health reinsurance pools and arrangements that we retained subsequent to the sale of First Allmerica Financial Life Insurance Company ("FAFLIC"), all of which were assumed by Hanover Insurance in connection with the transaction. We ceased writing new premiums in this business in 1999, subject to certain contractual obligations. The reinsurance pool business consists primarily of the medical and disability portions of workers' compensation risks, long-term care, assumed personal accident, individual medical, long-term disability, and special risk business. This business also includes residual health insurance policies. Total claim reserves for the assumed accident and health business were \$88.4 million at December 31, 2016, net of recoverables from third-party reinsurers of \$0.4 million at

December 31, 2016. Assets and liabilities related to the discontinued accident and health business are reflected as assets and liabilities of discontinued operations.

Loss estimates associated with substantially all of the discontinued accident and health business are provided by managers of each pool. We adopt reserve estimates for this business that consider this information, expected returns on assets assigned to this business and other facts. We update these reserves as new information becomes available and further events occur that may affect the ultimate resolution of unsettled claims. We believe that the reserves recorded related to this business are adequate. However, since reserve and loss cost estimates related to the discontinued accident and health business are dependent on several assumptions, including, but not limited to, future health care costs, persistency of medical care inflation, investment performance, claims, particularly in the long-term care business, morbidity and mortality assumptions, and these assumptions can be impacted by technical developments and advancements in the medical field and other factors, there can be no assurance that the reserves established for this business will prove sufficient. Revisions to these reserves could have a material adverse effect on our results of operations for a particular quarterly or annual period or on our financial position.

Discontinued operations, in total, generated a net loss of \$1.0 million during 2016, primarily related to our discontinued accident and health business.

## INVESTMENT PORTFOLIO

We held \$8.7 billion of investment assets, including cash and cash equivalents, at December 31, 2016. Approximately 84% of our investment assets were comprised of fixed maturities, which included both investment grade and below investment grade public and private debt securities; 7% consisted of equity securities; 6% included other investments which consisted primarily of mortgage participations, limited partnerships and overseas deposits; and the remaining 3% were comprised of cash and cash equivalents. These investments are generally of high quality and our fixed maturities and equities are broadly diversified across sectors of the fixed income and equity markets.

Opus manages our investment portfolio, including the selection and monitoring of external asset managers for our non-U.S. dollar fixed maturity portfolios, U.S. commercial mortgage loan participations and certain other investments. Our overall investment strategy is intended to balance investment income with credit and interest rate risk, while maintaining sufficient liquidity and providing the opportunity for capital growth. The asset allocation process takes into consideration the types of business written and the level of surplus required to support our differ-

ent businesses and the risk return profiles of the underlying asset classes. We look to balance the goals of capital preservation, net investment income stability, liquidity and total return. For certain portfolios in which fixed maturities are denominated in U.K. pounds sterling and Euros, we employ two external asset managers with international market expertise to manage these portfolios. Assets managed by these asset managers totaled approximately \$298 million of non-U.S. dollar-denominated investments at December 31, 2016. We select and monitor managers based on investment style, performance and corporate governance.

The majority of our assets are invested in the fixed income markets. Through fundamental research and credit analysis, with a focus on value investing, we seek to identify a portfolio of stable income-producing higher quality U.S. government, foreign government, municipal, corporate, residential and commercial mortgage-backed securities and asset-backed securities. We have a general policy of diversifying investments both within and across major investment and industry sectors to mitigate credit and interest rate risk. We monitor the credit quality of our investments and our exposure to individual markets, borrowers, industries, sectors and, in the case of commercial mortgage-backed securities and commercial mortgage loan participations, property types and geographic locations.

Investments held by our insurance subsidiaries are subject to diversification requirements under state insurance laws and other regulatory requirements. The investment portfolio duration is approximately 4.5 years and is generally maintained in the range of 1 to 2 times the duration of our insurance liabilities. We seek to maintain sufficient liquidity to support our cash flow requirements by monitoring the cash requirements associated with our insurance and corporate liabilities, laddering the maturities within the portfolio, closely monitoring our investment durations, holding high quality liquid public securities and managing the purchases and sales of assets.

Reference is made to "Investments" in Management's Discussion and Analysis of the Financial Condition and Results of Operations of this Form 10-K.

## RATING AGENCIES

Insurance companies are rated by rating agencies to provide both industry participants and insurance consumers information on specific insurance companies. Higher ratings generally indicate the rating agencies' opinion regarding financial stability and a stronger ability to pay claims.

We believe that strong ratings are important factors in marketing our products to our agents and customers, since rating information is broadly disseminated and generally used throughout the industry. We believe that a rating of

“A-” or higher from A.M. Best Co. is particularly important for our business. Insurance company financial strength ratings are assigned to an insurer based upon factors deemed by the rating agencies to be relevant to policyholders and are not directed toward protection of investors. Such ratings are neither a rating of securities nor a recommendation to buy, hold or sell any security.

## EMPLOYEES

As of December 31, 2016, we had approximately 4,900 employees, with approximately 4,500 located in the United States, and 400 internationally, almost all of whom are located in the United Kingdom. We believe our relations with employees are good.

## EXECUTIVE OFFICERS OF THE REGISTRANT

Reference is made to “Directors and Executive Officers of the Registrant” in Part III – Item 10 of this Form 10-K.

## AVAILABLE INFORMATION

We file our annual report on Form 10-K, quarterly reports on Form 10-Q, periodic information on Form 8-K, our proxy statement, and other required information with the Securities and Exchange Commission (“SEC”). Shareholders may read and copy any materials on file with the SEC at the SEC’s Public Reference Room at 100 F Street, NE, Washington, DC 20549. Shareholders may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet website, <http://www.sec.gov>, which contains reports, proxy and information statements and other information with respect to our filings.

Our website address is <http://www.hanover.com>. We make available free of charge on or through our website, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Additionally, our Code of Conduct is available, free of charge, on our website. Our Corporate Governance Guidelines and the charters of our Audit Committee, Compensation Committee, Committee of Independent Directors and Nominating and Corporate Governance Committee, are available on our website. All documents are also available in print to any shareholder who requests them.

## Item 1A — Risk Factors

### RISK FACTORS AND FORWARD LOOKING STATEMENTS

*We wish to caution readers that the following important factors, among others, in some cases have affected, and in the future could affect, our actual results and could cause our actual results to differ materially from historical results and from those expressed in any forward-looking statements made from time to time by us on the basis of our then-current expectations. When used in this Form 10-K, the words “believes”, “anticipates”, “expects”, “projections”, “outlook”, “should”, “could”, “plan”, “guidance”, “likely”, “on track to”, “targeted” and similar expressions are intended to identify forward-looking statements. Our businesses are in rapidly changing and competitive markets and involve a high degree of risk and unpredictability. Forward-looking projections are subject to these risks and unpredictability.*

*Our results may fluctuate as a result of cyclical or non-cyclical changes in the property and casualty insurance industry.*

The property and casualty insurance industry historically has been subject to significant fluctuations and uncertainties. Our profitability is affected significantly by the following items:

- increases in costs, particularly increases occurring after the time our insurance products are priced, including construction, automobile repair, and medical and rehabilitation costs. This includes “cost shifting” from health insurers to casualty and liability insurers (whether as a result of an increasing number of injured parties without health insurance, coverage changes in health policies to make such coverage secondary to casualty policies, the implementation or repeal of national healthcare legislation, lower reimbursement rates for the same procedure by health insurers or government-sponsored insurance, or the implementation of the Medicare Secondary Payer Act, which imposes reporting and other requirements with respect to medical and related claims paid for Medicare eligible individuals). As it relates to construction, there are often temporary increases in the cost of building supplies and construction labor after a significant event (for example, so called “demand surge” that causes the cost of labor, construction materials and other items to increase in a geographic area affected by a catastrophe). In addition, we are limited in our ability to negotiate and manage reimbursable expenses incurred by our policyholders;
- competitive and regulatory pressures, which affect the prices of our products and the nature of the risks covered;



- volatile and unpredictable developments, including severe weather, catastrophes, terrorist actions and global conflicts;
- legal, regulatory and socio-economic developments, such as new theories of insured and insurer liability and related claims and extra-contractual awards such as punitive damages, and increases in the size of jury awards or changes in applicable laws and regulations (such as changes in the thresholds affecting “no fault” liability or when non-economic damages are recoverable for bodily injury claims or coverage requirements);
- fluctuations in interest rates, inflationary pressures, default rates, commodity prices, foreign exchange rates and other factors that affect net income, including with respect to investment returns and operating results for certain of our lines of business such as trade credit; and
- other general economic conditions and trends that may affect the adequacy of reserves.

The demand for property and casualty insurance can also vary significantly based on general economic conditions (either nationally or regionally and, with respect to our Chaucer segment, internationally), rising as the overall level of economic activity increases and falling as such activity decreases. Loss patterns also tend to vary inversely with local economic conditions, increasing during difficult or unstable economic times and moderating during economic upswings or periods of stability. The fluctuations in demand and competition could produce unpredictable underwriting results.

*Actual losses from claims against our property and casualty insurance subsidiaries may exceed their reserves for claims.*

Our property and casualty insurance subsidiaries maintain reserves to cover their estimated ultimate liability for losses and loss adjustment expenses with respect to reported and unreported claims incurred as of the end of each accounting period. Reserves do not represent an exact calculation of liability. Rather, reserves represent estimates, involving actuarial projections and judgments at a given time, of what we expect the ultimate settlement and administration of incurred claims will cost based on facts and circumstances then known, predictions of future events, estimates of future trends in claims frequency and severity and judicial theories of liability, costs of repair and replacement, legislative activity and myriad other factors.

The inherent uncertainties of estimating reserves are greater for certain types of property and casualty insurance lines. These include automobile bodily injury liability, automobile personal injury protection, and workers’ compensation, where a longer period of time may elapse before

a definitive determination of ultimate liability may be made, environmental liability, where the technological, judicial and political climates involving these types of claims are continuously evolving, and casualty coverages such as professional liability. There is also greater uncertainty in establishing reserves with respect to new business, particularly new business that is generated with respect to newer product lines, such as our management and professional liability, healthcare, and cyber-risk lines by newly appointed agents or in geographies where we have less experience in conducting business. In these cases, there is less historical experience or knowledge and less data upon which the actuaries can rely. Estimating reserves is further complicated by unexpected claims or unintended coverages that emerge due to changing conditions. These emerging issues may increase the size or number of claims beyond our underwriting intent and may not become apparent for many years after a policy is issued. These losses are reflected as prior year reserve development. Although we undertake underwriting actions designed to limit losses once emerging issues are identified, we remain subject to losses on policies issued during those years preceding the underwriting actions.

Additionally, the introduction of new Commercial Lines products, including through several acquired subsidiaries, the development of new niche and specialty lines and the introduction of new or expanded lines of business at Chaucer, present new risks. Certain new specialty products, such as the human services program, non-profit directors and officers liability and employment practices liability policies, lawyers and other professional liability policies, healthcare lines and private company directors and officers coverage may also require a longer period of time (the so-called “tail”) to determine the ultimate liability associated with the claims and may produce more volatility in our results and less certainty in our accident year reserves. Some lines of business, such as surety, are less susceptible to establishing reserves based on actuarial or historical experience and losses may be episodic, depending on economic and other factors.

We regularly review our reserving techniques, reinsurance and the overall adequacy of our reserves based upon, among other things:

- our review of historical data, legislative enactments, judicial decisions, legal developments in imposition of damages, changes in political attitudes and trends in general economic conditions;
- our review of per claim information;
- historical loss experience of our property and casualty insurance subsidiaries and the industry as a whole; and
- the terms of our property and casualty insurance policies.

Underwriting results and operating income could be adversely affected by further changes in our net loss and LAE estimates related to significant events or emerging risks, such as risks related to attacks on or breaches of computer network systems (“cyber-risks”), privacy regulations or disruptions caused by major power grid failures or widespread electrical and electronic equipment failure due to aging infrastructure, natural factors like hurricanes, earthquakes and solar flares or man-made factors like terrorism.

Estimating losses following any major catastrophe or with respect to emerging claims is an inherently uncertain process. Factors that add to the complexity of estimating losses from these events include the legal and regulatory uncertainty, the complexity of factors contributing to the losses, delays in claim reporting, and with respect to areas with significant property damage, the impact of “demand surge” and a slower pace of recovery resulting from the extent of damage sustained in the affected areas due, in part, to the availability and cost of resources to effect repairs. Emerging claims issues may involve complex coverage, liability and other costs which could significantly affect LAE. As a result, there can be no assurance that our ultimate costs associated with these events or issues will not be substantially different from current estimates (for example, actual losses arising from an event like Superstorm Sandy could have varied widely depending on the interpretation of various policy provisions). Investors should consider the risks and uncertainties in our business that may affect net loss and LAE reserve estimates and future performance, including the difficulties in arriving at such estimates.

Anticipated losses associated with business interruption exposure, the impact of wind versus water as the cause of loss, disputes over the extent of damage caused by hail storms, supplemental payments on previously closed claims caused by the development of latent damages or new theories of liability and inflationary pressures could also have a negative impact on future loss reserve development.

Because of the inherent uncertainties involved in setting reserves and establishing current and prior-year “loss picks”, including those related to catastrophes, we cannot provide assurance that the existing reserves or future reserves established by our property and casualty insurance subsidiaries will prove adequate in light of subsequent events. Our results of operations and financial condition could therefore be materially affected by adverse loss development for events that we insured in prior periods.

*Due to geographical concentration in our U.S. property and casualty business, changes in economic, regulatory and other conditions in the regions where we operate could have a significant negative impact on our business as a whole. Geographic concentrations also expose us to losses that are potentially disproportionate to our market share in the event of natural or other catastrophes.*

We generate a significant portion of our U.S. property and casualty insurance net premiums written and earnings in Michigan, Massachusetts and other states in the Northeast, including New York. For the year ended December 31, 2016, approximately 20% and 10% of our net premiums written in our U.S. property and casualty business were generated in the states of Michigan and Massachusetts, respectively. Many states in which we do business impose significant rate control and residual market charges, and restrict an insurer’s ability to exit such markets. The revenues and profitability of our property and casualty insurance subsidiaries are subject to prevailing economic, regulatory, demographic and other conditions, including adverse weather in Michigan and the Northeast. Because of our geographic concentration in certain regions, our business as a whole could be significantly affected by changes in the economic, regulatory and other conditions in such areas.

Further, certain new catastrophe models assume an increase in frequency and severity of certain weather events, whether as a result of potential global climate change or otherwise. Financial strength rating agencies are placing increased emphasis on capital and reinsurance adequacy for insurers with certain geographic concentrations of risk which may be subject to disproportionate risk of loss. These factors also may result in insurers seeking to diversify their geographic exposure, which could result in increased regulatory restrictions in those markets where insurers seek to exit or reduce coverage, as well as an increase in competitive pressures in less weather-exposed markets.

*Our profitability may be adversely affected if our pricing models differ materially from actual results.*

The profitability of our business depends on the extent to which our actual claims experience is consistent with the assumptions we use in pricing our policies. We price our business in a manner that is intended to be consistent, over time, with actual results and return objectives. Our estimates and models, and/or the assumptions behind them, may differ materially from actual results.

If we fail to appropriately price the risks we insure, fail to change or are too slow to change our pricing model to appropriately reflect our current experience, or if our claims experience is more frequent or severe than our underlying risk assumptions, 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.

***Limitations on the ability to predict the potential impact of weather events and catastrophes may impact our future profits and cash flows.***

Our business is subject to claims arising out of catastrophes that may have a significant impact on our results of operations and financial condition. We may experience catastrophe losses that could have a material adverse impact on our business. Catastrophes can be caused by various events, including hurricanes, floods, earthquakes, tornadoes, wind, hail, fires, drought, severe winter weather, volcanic eruptions, tropical storms, tsunamis, sabotage, terrorist actions, explosions, nuclear accidents, solar flares, and power outages. The frequency and severity of catastrophes are inherently unpredictable.

The extent of gross losses from a catastrophe is a function of the total amount of insured exposure in the area affected by the event and the severity of the event. The extent of net losses depends on the amount and collectability of reinsurance.

Additionally, the severity of certain catastrophes could be so significant that it impacts the ability of certain locations to recover their economic viability in the near term, which could also have a significant negative impact on our business.

Although catastrophes can cause losses in a variety of property and casualty lines, homeowners and commercial multiple peril property insurance have, in the past, generated the vast majority of our catastrophe-related claims. Our catastrophe losses have historically been principally weather-related, particularly from hurricanes, as well as snow and ice damage from winter storms. However, Chaucer's international operations subject us to greater diversity in the types and geographic distribution of potential catastrophe losses. For example, Chaucer incurred catastrophe losses in 2016 from wildfires in Canada and earthquakes in Ecuador and New Zealand, in 2015 from a port explosion in China and in 2014 from snowstorms in Japan, a hurricane in Mexico and tornado and hail storms in the U.S.

Although the insurance industry and rating agencies have developed various models intended to help estimate potential insured losses under thousands of scenarios, there is no reliable way of predicting the probability of such events or the magnitude of such losses before a specific event occurs. We utilize various models and other techniques in an attempt to measure and manage potential catastrophe losses within various income and capital risk appetites. However, such models and techniques have

many limitations. In addition, due to historical concentrations of business, regulatory restrictions and other factors, our ability to manage such concentrations is limited, particularly in the Northeast and in the state of Michigan.

We purchase catastrophe reinsurance as protection against catastrophe losses. Based upon an ongoing review of our reinsurers' financial statements, financial strength ratings assigned to them by rating agencies, their reputations in the reinsurance marketplace, our collections history with them and the analysis and guidance of our reinsurance advisors, we believe that the financial condition of our reinsurers is sound. However, reinsurance is subject to counterparty risks, including those resulting from over-concentration of exposures within the industry. In setting our retention levels and coverage limits, we also consider our level of statutory surplus and exposures, as well as the current reinsurance pricing environment. Should we experience losses from one significant or several large catastrophes, there can be no assurance that our reinsurance program will provide adequate coverage levels.

***Our business is dependent on our ability to manage risk, and the failure of the risk mitigation strategies we utilize could have a material adverse effect on our financial condition or results of operations.***

Our business performance is highly dependent on our ability to manage operational risks that arise from a large number of day-to-day business activities, including insurance underwriting, claims processing, servicing, investment, financial and tax reporting, compliance with regulatory requirements and other activities. We utilize a number of strategies to mitigate our insurance risk exposure, including: engaging in thorough underwriting, utilizing limits, deductibles and exclusions to mitigate policy risk, reviewing the terms and conditions of our policies, focusing on our risk aggregation by product line, geography, industry type, credit exposure and other bases, and ceding insurance risk. We seek to monitor and control our exposure to risks arising out of these activities through an enterprise-wide risk management framework. However, there are inherent limitations in all of these tactics, and no assurance can be given that these processes and procedures will effectively control all known risks or effectively identify unforeseen risks or that an event or series of events will not result in loss levels in excess of our probable maximum loss models, which could have a material adverse effect on our financial condition or results of operations. It is also possible that losses could manifest themselves in ways that we do not anticipate and that our risk mitigation strategies are not designed to address. Such a manifestation of losses could have a material adverse effect on our financial condition or results of operations. These risks may be heightened during times of challenging macro economic conditions.

*We cannot guarantee the adequacy of or ability to maintain our current level of reinsurance coverage.*

Similar to insurance companies, reinsurance companies can also be adversely impacted when catastrophes occur. There can be no assurance that we will be able to maintain our current levels of reinsurance coverage. In particular, and as discussed under “Reinsurance Program Overview” of this Form 10-K, not all of our 2017 reinsurance programs for the Commercial and Personal Lines and Chaucer business are fully placed. Future catastrophic events and other changes in the reinsurance marketplace, including as a result of investment losses or disruptions due to challenges in the financial markets that have occurred or could occur in the future, may adversely affect our ability to obtain such coverages, as well as adversely affect the cost of obtaining that coverage.

Additionally, the availability, scope of coverage, cost, and creditworthiness of reinsurance could continue to be adversely affected as a result of not only new catastrophes, but also terrorist attacks and the perceived risks associated with future terrorist activities, global conflicts, and the changing legal and regulatory environment (including changes which could create new insured risks). Federal reinsurance for terrorism risks coverage offered by insurers is available under TRIPRA, but it only applies to certified events of terrorism (as defined in TRIPRA) and contains certain caps and deductibles. Although TRIPRA coverage is in effect through December 31, 2020, should this program not be renewed or should it be modified unfavorably by the government in the future, private reinsurance for events of terrorism may not be available to us or available at reasonable or acceptable rates.

*Although we monitor their financial soundness, we cannot be sure that our reinsurers will pay in a timely fashion, if at all.*

We purchase reinsurance by transferring part of the risk that we have assumed (known as ceding) to reinsurance companies in exchange for part of the premium we receive in connection with the risk. As of December 31, 2016, our reinsurance receivable (including from the MCCA) amounted to approximately \$2.6 billion. Although reinsurance makes the reinsurer liable to us to the extent the risk is transferred or ceded to the reinsurer, it does not relieve us (the reinsured) of our liability to our policyholders or, in cases where we are a reinsurer, to our reinsureds. Accordingly, we bear counterparty risk with respect to our reinsurers. Although we monitor the credit quality of our reinsurers, we cannot be sure that they will pay the reinsurance recoverables owed to us currently or in the future or that they will pay such recoverables on a timely basis.

*Climate change may adversely impact our results of operations.*

There are concerns that the higher level of weather-related catastrophes and other losses incurred by the industry in prior years is indicative of changing weather patterns, whether as a result of climate-warming trends caused by human activities (“global climate change”) or otherwise, which could cause such events to persist. Increased weather-related catastrophes would lead to higher overall losses, which we may not be able to recoup, particularly in the current economic and competitive environment, and higher reinsurance costs. As noted above, certain catastrophe models assume an increase in frequency and severity of certain weather events, which could result in a disproportionate impact on insurers with certain geographic concentrations of risk. This would also likely increase the risks of writing property insurance in coastal areas, particularly in jurisdictions that restrict pricing and underwriting flexibility.

In addition, global climate change could have an impact on assets in which we invest, resulting in realized and unrealized losses in future periods that could have a material adverse impact on our results of operations and/or financial position. It is not possible to foresee which, if any, assets, industries or markets will be materially and adversely affected, nor is it possible to foresee the magnitude of such effect.

*We may incur financial losses resulting from our participation in shared market mechanisms, mandatory reinsurance programs and mandatory and voluntary pooling arrangements.*

In most of the U.S. jurisdictions in which we operate, our property and casualty insurance subsidiaries are required to participate in mandatory property and casualty shared market mechanisms, government-sponsored reinsurance programs or pooling arrangements. These arrangements are designed to provide various insurance coverages to individuals or other entities that otherwise are unable to purchase such coverage or to support the costs of uninsured motorist claims in a particular state or region. We cannot predict whether our participation in these shared market mechanisms or pooling arrangements will provide underwriting profits or losses to us. For the year ended December 31, 2016, we experienced an underwriting loss of \$12.7 million from participation in these mechanisms and pooling arrangements, compared to underwriting losses of \$13.2 million and \$15.1 million in 2015 and 2014, respectively. We may face similar or more significant earnings fluctuations in the future.

Additionally, increases in the number of participants or insureds in state-sponsored reinsurance pools, FAIR Plans or other residual market mechanisms, particularly in the



states of Massachusetts, Florida, Louisiana, and New York combined with regulatory restrictions on the ability to adequately price, underwrite, or non-renew business, as well as new legislation, or changes in existing case law, could expose us to significant exposures and risks of increased assessments from these residual market mechanisms. There could also be significant adverse impact as a result of losses incurred in those states due to hurricane exposure, as well as the declining number of carriers providing coverage in those regions. We are unable to predict the likelihood or impact of such potential assessments or other actions.

We also have credit risk associated with certain mandatory reinsurance programs such as the MCCA. The MCCA was created to fund Michigan's unique unlimited personal injury protection benefit. As of December 31, 2016, our estimated reinsurance recoverable from the MCCA was \$911.2 million. In most years, the MCCA operates with a deficit which may fluctuate significantly based on investment returns, discount rates, incurred claims, annual assessments and other factors.

In addition, we may be adversely affected by liabilities resulting from our previous participation in certain voluntary property and casualty assumed reinsurance pools. We have terminated participation in virtually all property and casualty voluntary pools, but remain subject to claims related to periods in which we participated. The property and casualty industry's assumed reinsurance businesses have suffered substantial losses during the past several years, particularly related to environmental and asbestos exposure for property and casualty coverages, in some cases resulting from incidents alleged to have occurred decades ago. Due to the inherent volatility in these businesses, possible issues related to the enforceability of reinsurance treaties in the industry and the recent history of increased losses, we cannot provide assurance that our current reserves are adequate or that we will not incur losses in the future. Our operating results and financial position may be adversely affected by liabilities resulting from any such claims in excess of our loss estimates. As of December 31, 2016, our reserves for these pools totaled \$40.0 million.

***Our businesses are heavily regulated, and changes in regulation may reduce our profitability.***

Our U.S. insurance businesses are subject to supervision and regulation by the state insurance authority in each state in which we transact business. This system of supervision and regulation relates to numerous aspects of an insurance company's business and financial condition, including limitations on the authorization of lines of business, underwriting limitations, the ability to utilize credit-based insurance scores in underwriting, the ability to terminate agents, supervisory and liability responsibilities

for agents, the setting of premium rates, the requirement to write certain classes of business which we might otherwise avoid or charge different premium rates, restrictions on the ability to withdraw from certain lines of business, the establishment of standards of solvency, the licensing of insurers and agents, compensation of agents, concentration of investments, levels of reserves, the payment of dividends, transactions with affiliates, changes of control, protection of private information of our agents, policyholders, claimants and others (which may include highly sensitive financial or medical information or other private information such as social security numbers, driving records, drivers license numbers, etc.) and the approval of policy forms. From time to time, various states and Congress have proposed to prohibit or otherwise restrict the use of credit-based insurance scores in underwriting or rating our Personal Lines business. The elimination of the use of credit-based insurance scores could cause significant disruption to our business and our confidence in our pricing and underwriting. Most insurance regulations are designed to protect the interests of policyholders rather than stockholders and other investors.

Legislative and regulatory restrictions are constantly evolving and are subject to then current political pressures. For example, following Superstorm Sandy, the states of New Jersey and New York were considering proposals such as homeowners' "Bill of Rights", restrictions on storm deductibles and additional mandatory claim handling guidelines. More recently, the California Insurance Commissioner requested that all insurers operating in California voluntarily divest from any investments they may have in thermal coal. Such actions also occur at the federal level, such as the U.S. Department of Housing and Urban Development's proposal that may increase the legal risk of providing homeowners and commercial residential property insurance by imposing liability for discrimination on the basis of a disparate-impact theory even without any evidence of discriminatory intent. The prospects for this proposal under the current president's administration are unknown at this time. Some states are also considering mandating owners of firearms to purchase liability insurance.

In addition, The Dodd-Frank Wall Street Reform and Consumer Protection Act provides for enhanced regulation for the financial services industry through initiatives including, but not limited to, the creation of a Federal Insurance Office and several federal oversight agencies, the requiring of more transparency, accountability and focus in protecting investors and businesses, input of shareholders regarding executive compensation, and enhanced empowerment of regulators to pursue those who engage in financial fraud and unethical business practices. The prospects for these initiatives are in question since the

last U.S. election. The SEC adopted regulations designed to encourage, reward, and protect “whistleblowers”, whether or not they first report the potential infraction to the company for correction or remedial action.

Also, the federal Medicare, Medicaid and SCHIP Extension Act mandates reporting and other requirements applicable to property and casualty insurance companies which make payments to or on behalf of claimants who are eligible for Medicare benefits. These requirements have made bodily injury claim resolutions more difficult, particularly for complex matters or for injuries requiring treatment over an extended period, and impose significant penalties for non-compliance and reporting errors. These requirements also have increased the circumstances under which the federal government may seek to recover from insurers amounts paid to claimants in circumstances where the government had previously paid benefits. In January 2013, the Strengthening Medicare and Repaying Taxpayers Act was signed into law and provided for implementation over a staggered period of time. We are continuing to monitor the effect of this law on our ability to settle cases and our exposure to federal recoupment claims.

With respect to our U.S. insurance business, state regulatory oversight and various proposals at the federal level may in the future adversely affect our ability to sustain adequate returns in certain lines of business or in some cases, operate the line profitably. In recent years, the state insurance regulatory framework has come under increased federal scrutiny, and certain state legislatures have considered or enacted laws that alter and, in many cases, increase state authority to regulate insurance companies and insurance holding company systems.

Our business could be negatively impacted by adverse state, federal and foreign legislation or regulation, or judicial developments, including those resulting in:

- decreases in rates;
- limitations on premium levels;
- coverage and benefit mandates;
- limitations on the ability to manage care and utilization or other claim costs;
- requirements to write certain classes of business or in certain geographies;
- restrictions on underwriting, on methods of compensating independent producers, or on our ability to cancel or renew certain business (which negatively affects our ability to reduce concentrations of property risks);
- higher liability exposures for our insureds;
- increased assessments or higher premium or other taxes; and
- enhanced ability to pierce “no fault” thresholds or recover non-economic damages (such as “pain and suffering”).

These regulations serve to protect the customers and other third parties who deal with us and are heavily influenced by the then current political environment. If we are found to have violated an applicable regulation, administrative or judicial proceedings may be initiated against us which could result in censures, fines, civil penalties (including punitive damages), the issuance of cease-and-desist orders, premium refunds or the reopening of closed claim files, among other consequences. These actions could have a material adverse effect on our financial position and results of operations.

From time to time, Congress, as well as state, local and foreign governments, also consider legislation that could increase our tax costs. For example, organizations such as the Organization for Economic Cooperation and Development propose legislation to regulatory agencies that, if enacted, may have a material impact on our income tax provision. Additionally, the 2016 election results make U.S. tax reform more likely in the near future. This tax reform may include reductions in the U.S. corporate income tax rate, potential changes in the cost of cross border reinsurance, and changes to the tax base, which may impact our effective tax rate in future years, as well as the carrying value of our net deferred tax asset.

In addition, we are reliant upon independent agents and brokers to market our products. Changes in regulations related to insurance agents and brokers that materially impact the profitability of the agent and broker business or that restrict the ability of agents and brokers to market and sell insurance products would have a material adverse effect on our business.

With respect to our U.K. insurance business, Chaucer’s regulated subsidiaries are subject to the U.K.’s PRA and FCA regulations and are subject to limitations and approval requirements with respect to payments of dividends, return of capital and becoming a borrower, guarantor or provider of security interest on any financial obligations and other aspects of its operations.

The PRA and FCA have substantial powers of intervention in relation to the Lloyd’s managing agents, such as Chaucer, which they regulate, including the power to remove their authorization to manage Lloyd’s syndicates. In addition, each year the PRA requires Lloyd’s to satisfy an annual solvency test that measures whether Lloyd’s has sufficient assets in the aggregate to meet all outstanding liabilities of its members, both current and run-off. If Lloyd’s fails this test, the PRA may require Lloyd’s to cease trading and/or its members to cease or reduce underwriting. The FCA focuses on conduct of business issues with a particular focus on consumer protection and market integrity. Future regulatory changes or rulings by the PRA and FCA could interfere with our business strategy or financial assumptions, possibly resulting in a material adverse effect on our profitability.

Additionally, the Lloyd's worldwide insurance and reinsurance business is subject to various regulations, laws, treaties and other applicable policies of the European Union, as well as each nation, state and locality in which it operates. Material changes in governmental requirements and laws could have an adverse effect on Lloyd's and its member companies, including Chaucer.

From time to time, we are also involved in investigations and proceedings by U.S., U.K., state and other governmental and self-regulatory agencies. We cannot provide assurance that these investigations, proceedings and inquiries will not result in actions that would adversely affect our results of operations or financial condition.

***As a specialist in Lloyd's insurance group, Chaucer is subject to a number of risks which could materially and adversely affect us.***

As a specialist in Lloyd's insurance group, Chaucer is subject to a number of specific risk factors and uncertainties, including without limitation:

- its reliance on insurance and reinsurance brokers and Lloyd's distribution channels to distribute and market its products (so called "coverholders"), including its reliance on four major brokers who each were responsible for ten percent or more of Chaucer's gross written premium in 2016;
- its obligations to maintain funds at Lloyd's to support its underwriting activities;
- its risk-based capital requirement being assessed periodically by Lloyd's and being subject to variation;
- its reliance on ongoing approvals from Lloyd's, the PRA and FCA and other regulators to conduct its business, including a requirement that its Annual Business Plan be approved by Lloyd's before the start of underwriting for each account year;
- its obligations to contribute to the Lloyd's Central Fund and pay levies to Lloyd's;
- its financial strength rating is derived from the rating assigned to Lloyd's, and Chaucer has very limited ability to directly affect the overall Lloyd's rating;
- its ongoing ability to utilize Lloyd's trading licenses in order to underwrite business outside the United Kingdom, including Chaucer's ability to write business in the European market if the United Kingdom withdraws, as planned, from the European Union and Lloyd's does not obtain alternative licensing permissions;
- its ongoing exposure to levies and charges in order to underwrite at Lloyd's; and
- the requirement to maintain deposits in the United States for U.S. site risks it underwrites.

Whenever a member of Lloyd's is unable to pay its policyholder obligations, such obligations may be payable by the Lloyd's Central Fund. If Lloyd's determines that the Central Fund needs to be increased, it has the power to assess premium levies on current Lloyd's members up to 3% of a member's underwriting capacity in any one year. We do not believe that any assessment is likely in the foreseeable future and have not provided allowance for such an assessment. However, based on our 2017 estimated underwriting capacity at Lloyd's of £731.4 million, the December 31, 2016 exchange rate of 1.23 dollars per GBP and assuming the maximum 3% assessment, we could be assessed up to approximately \$27.1 million in 2017.

***We are subject to litigation risks, including risks relating to the application and interpretation of contracts, and adverse outcomes in litigation and legal proceedings could adversely affect our results of operations and financial condition.***

We are subject to litigation risks, including risks relating to the application and interpretation of insurance and reinsurance contracts, and are routinely involved in litigation that challenges specific terms and language incorporated into property and casualty contracts, such as claims reimbursements, covered perils and exclusion clauses, among others, or the interpretation or administration of such contracts. We are also involved in legal actions that do not arise in the ordinary course of business, some of which assert claims for substantial amounts. Adverse outcomes, including with respect to the matter captioned "Durand Litigation" under "Commitments and Contingencies – Legal Proceedings" in Note 18 in the Notes to the Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K, could materially affect our results of operations and financial condition.

***We are subject to mandatory assessments by state guaranty funds; an increase in these assessments could adversely affect our results of operations and financial condition.***

All fifty states of the United States and the District of Columbia have insurance guaranty fund laws requiring property and casualty insurance companies doing business within the state to participate in guaranty associations. These associations are organized to pay contractual obligations under insurance policies issued by impaired or insolvent insurance companies. The associations levy assessments, up to prescribed limits, on all member insurers in a particular state on the basis of the proportionate share of the premiums written by member insurers in the lines of business in which the impaired or insolvent insurer is engaged. Although mandatory assessments by state guaranty funds that are used to cover losses to policyhold-

ers of insolvent or rehabilitated companies can be substantially recovered through policyholder surcharges or a reduction in future premium taxes in many states (provided the collecting insurer continues to write business in such state), there can be no assurance that all funds will be recoupable in the future. During 2016, we had a total assessment of \$4.1 million levied against us, with refunds of \$0.1 million received in 2016 for a total net assessment of \$4.0 million. As of December 31, 2016, we have \$0.6 million of reserves related to guaranty fund assessments. In the future, these assessments may increase above levels experienced in the current and prior years. Future increases in these assessments depend upon the rate of insolvencies of insurance companies. An increase in assessments could adversely affect our results of operations and financial condition.

*If we are unable to attract and retain qualified personnel, or if we experience the loss or retirement of key executives or other key employees, we may not be able to compete effectively and our operations could be impacted significantly.*

Our future success will be affected by our continued ability to attract, develop and retain qualified executives and other key employees, particularly those experienced in the property and casualty industry and the Lloyd's market.

*Our profitability could be adversely affected by our relationships with our agencies.*

We periodically review agencies, including managing general agencies, with which we do business to identify those that do not meet our profitability standards or are not strategically aligned with our business. Following these periodic reviews, we may restrict such agencies' access to certain types of policies or terminate our relationship with them, subject to applicable contractual and regulatory requirements which limit our ability to terminate agents or which require us to renew policies. We may not achieve the desired results from these measures, and our failure to do so could negatively affect our operating results and financial position.

In addition, we could be adversely affected if our agencies, including managing general agencies, with which we do business exceed the authority that we have given them or breach the obligations that they owe to us. Although we routinely monitor our agency relationships, such actions could expose us to liability and have a negative impact on our results of operations and financial condition.

*We may be affected by disruptions caused by the introduction of new products, related technology changes, and new operating models in Commercial Lines, Personal Lines and Chaucer businesses and recent or future acquisitions, and expansion into new geographic areas. We could also be*

*affected by an inability to retain profitable policies in force and attract profitable policies in our Commercial Lines, Personal Lines and Chaucer segments, particularly in light of a competitive product pricing environment and the adoption by competitors of strategies to increase agency appointments and commissions, increase advertising, and more effectively utilize "big data".*

There are increased underwriting risks associated with premium growth and the introduction of new products or programs in our Commercial Lines, Personal Lines and Chaucer businesses. Additionally, we have increased underwriting risks associated with the appointment of new agencies and managing general agencies and with the expansion into new geographical areas, including international expansion.

The introduction of new Commercial Lines products, including through our acquired subsidiaries and the development of new niche and specialty lines, presents new risks. Certain new specialty products may present longer "tail" risks and increased volatility in profitability. Our expansion into western states, including California, presents additional underwriting risks since the regulatory, geographic, natural risk, legal environment, demographic, business, economic and other characteristics of these states present challenges different from those in the states in which we historically have conducted business.

Our Personal Lines production and earnings may be unfavorably affected by the continued introduction of new products, expanded risk appetites and our focus on account business (i.e., policyholders who have both automobile and homeowner insurance with us) which we believe, despite pricing discounts, will ultimately be more profitable business. We may also experience adverse selection, which occurs when insureds with larger risks purchase our products because of favorable pricing, under-pricing, operational difficulties or implementation impediments with independent agents or the inability to grow new markets after the introduction of new products or the appointment of new agents.

As we enter new states or regions or grow business in our identified growth states, there can be no assurance that we won't experience higher loss trends than anticipated.

Chaucer's proposed non-Lloyd's insurance company to be based in Ireland is intended to provide an alternative platform for writing certain insured risks, and will be subject to oversight by the Central Bank of Ireland. There can be no assurances that the anticipated benefits of operating in this new jurisdiction will materialize as planned. Additionally, the expansion of Chaucer's political risk and trade credit business, including in Africa and through the planned Irish insurer, and development of its accident and health business, present new risks.



***We may experience difficulties with technology, data security and/or outsourcing relationships, which could have a negative impact on our ability to conduct our business.***

We use computer systems to store, retrieve, evaluate and utilize customer and company data and information. Our computer, information technology and telecommunications systems, in turn, interface with and rely upon third-party systems. Our business is highly dependent on our ability, and the ability of certain third parties, to access these systems to perform necessary business functions, including, without limitation, providing insurance quotes, processing premium payments, making changes to existing policies, filing and paying claims, providing customer support and managing our investment portfolios. Systems attacks, failures or outages could compromise our ability to perform these functions in a timely manner, which could harm our ability to conduct business and hurt our relationships with our business partners and customers. In the event of a disaster such as a natural catastrophe, an industrial accident, a blackout, a computer virus, a cyber security attack, a terrorist attack or war, or interference from solar flares, our systems may be inaccessible to our employees, customers or business partners for an extended period of time. Even if our employees are able to report to work, they may be unable to perform their duties for an extended period of time if our data or systems are disabled or destroyed or if our disaster recovery plans are inadequate or suffer from unforeseen consequences. This could result in a materially adverse effect on our business results and liquidity.

In addition, we routinely transmit and receive personal, confidential and proprietary information by e-mail and other electronic means. While we attempt to utilize 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.

Our systems, like others in the financial services industry, are potentially vulnerable to cyber security risks, and we are subject to potential disruption caused by such activities. Large corporations such as ours are subject to near daily attacks on their systems. Such attacks may have various goals, from seeking confidential information to causing operational disruption. Although to date such activities have not resulted in material disruptions to our operations or, to our knowledge, material breach of any security or confidential information, no assurance can be provided that such disruptions or breach will not occur in the future. As cyber attacks become more prevalent and the methods used to perpetrate them change, we may be required to devote additional personnel or systems

resources to protecting our data security or investigating or remediating any perceived vulnerabilities. Such resources could be costly in time and expenses and could detract from resources spent on our core property and casualty insurance operations.

Additionally, we could be subject to liability if confidential customer information is misappropriated from our computer systems, those of our vendors or others with whom we do business, or otherwise. Despite whatever security measures may be in place, any such systems may be vulnerable to physical break-ins, computer viruses, programming errors, attacks by third parties or similar disruptive problems. Any well-publicized compromise of security could deter people from entering into transactions that involve transmitting confidential information, or damage our reputation, which could have a material adverse effect on our business.

We outsource certain technology and business process functions to third parties and may do so increasingly in the future. If we do not effectively develop, implement and monitor our outsourcing strategy, third-party providers do not perform as anticipated or we experience technological or other problems with a transition, we may not realize 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 enhanced risk related to data security, which could result in monetary and reputational damages. In addition, 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 policies inside or outside of the United States. As a result, our ability to conduct our business might be adversely affected.

***Integration of acquired businesses involves a number of risks, and there can be no assurance that we will be successful integrating recent and future acquisitions.***

There can be no assurance that we will be able to successfully integrate recent and any future acquisitions or that we will not assume unknown liabilities and reserve deficiencies in connection with such acquisitions. If we are unable to successfully integrate new businesses, then we could be impeded from realizing the benefits of an acquisition. The integration process could disrupt our business, and a failure to successfully integrate newer businesses could have a material adverse effect on our business, financial condition and results of operations. The difficulties of integrating an acquisition and risks to our business include, among others:

- unanticipated issues in integrating information, communications and other systems;

- unanticipated incompatibility of logistics, marketing and administration methods;
- maintaining employee morale and retaining key employees;
- integrating the business cultures of different companies;
- preserving important strategic, reinsurance and other relationships;
- integrating legal and financial controls in multiple jurisdictions;
- consolidating corporate and administrative infrastructures and eliminating duplicative operations;
- the diversion of management's attention from ongoing business concerns;
- integrating geographically separate organizations;
- unexpected or overlapping concentrations of risk where one event or series of events can affect many insured parties;
- significant transaction costs, including the effect of exchange rate fluctuations;
- risks and uncertainties in our ability to increase the investment yield on the investment portfolio;
- uncertainties in our ability to decrease leverage as a result of adding future earnings to our capital base;
- risks and uncertainties regarding the volatility of underwriting results in a combined entity;
- the ability to more efficiently manage capital;
- the ability to improve renewal rates and increase new property and casualty policy counts;
- the ability to increase or maintain certain property and casualty insurance rates;
- complying with laws, rules and regulations in multiple jurisdictions, including new and multiple employment regulations, regulations relating to the conduct of business activities such as the U.K. Bribery Act, sanctions imposed by the U.S., E.U. or U.K. on doing business with certain foreign countries or other persons, tax, privacy, information security, and environmental-related laws; and
- the impact of new product or line of business introductions and our ability to meet projected return on capital targets.

In addition, even if we are able to successfully integrate recent and future acquisitions, we may not realize the full benefits of such acquisitions, including the synergies, cost savings or underwriting or growth opportunities that we expect. It is possible that these benefits may not be achieved within the anticipated time frame, or at all.

***Our international operations expose us to additional risks which could cause a material adverse effect on our business, financial position and results of operations.***

Our operations extend to countries outside the U.S., and operating globally increases the scope of our risks and exposes us to certain additional risks, including but not limited to:

- an expansion in the scope of the risks to which our U.S. operations are subject as an insurance company, such as risk of adverse loss development, litigation, investment risks and the possibility of significant catastrophe losses (as a result of natural disasters, nuclear accidents, severe weather and terrorism) occurring outside the U.S.;
- compliance with a variety of national and local laws, regulations and practices of the countries in which we do business and adherence to any changes in such laws, regulations and practices affecting the insurance industry in such countries;
- the effect of the Brexit Referendum and related consequences on (i) Chaucer's licensing permissions in European Union member states if Lloyd's does not obtain alternative licensing permissions; (ii) market conditions in the U.K. and the European market; and (iii) foreign exchange volatility;
- adverse changes, including as a result of political instability, in the economies in which we operate; and
- requirements, such as those enforced by Her Majesty's Treasury, Asset Freezing Unit (U.K.) and the U.S. Treasury's Office of Foreign Asset Controls, to comply with various U.K., U.S., E.U. or other sanctions imposed on doing business with, or affecting, certain countries, their citizens, specially designated nationals or other persons doing business with any such countries or persons.

***Intense competition could negatively affect our ability to maintain or increase our profitability.***

We compete, and will continue to compete, with a large number of companies, including international, national and regional insurers, mutual companies, specialty insurance companies, so called "off-shore" companies which enjoy certain tax advantages, underwriting agencies and financial services institutions. We also compete with mutual insurance companies, reciprocal and exchange companies which may not have shareholders and may have different profitability targets than publicly or privately owned companies. Chaucer competes with numerous other Lloyd's syndicates and managing agents, domestic and international insurers and government or government-sponsored insurance or reinsurance mechanisms. In recent years, there has been substantial consolidation and

convergence among companies in the financial services industry, resulting in increased competition from large, well-capitalized financial services firms. Many of our competitors have greater financial, technical and operating resources than we do, greater access to “big data,” and may be able to offer a wider range of, or more sophisticated, commercial and personal line products. Some of our competitors also have different marketing and sales strategies than we do and market and sell their products to consumers directly. Some companies are seeking to protect new products with patents or other legal protections, which may create new legal exposures or limit our ability to develop competing products. In addition, competition in the U.S. and international property and casualty insurance markets has intensified over the past several years. This competition has had and may continue to have an adverse impact on our revenues and profitability.

A number of new, proposed or potential legislative or industry developments could further increase competition in our industry. These developments include:

- the implementation of commercial lines deregulation in several states;
- programs in which state-sponsored entities provide property insurance in catastrophe-prone areas or other alternative markets types of coverage;
- increased competition from off-shore tax advantaged insurance companies; and
- changing practices caused by the internet and the increased usage of real time comparative rating tools and claims management processes, which have led to greater competition in the insurance business in general, particularly on the basis of price.

We could face heightened competition resulting from the entry of new competitors and the introduction of new products by new and existing competitors. Additionally, recent entries into the property and casualty marketplace by large technology companies, retail companies and other non-traditional insurance providers, who aim to leverage their information about and direct access to customers, may increase competition. Increased competition could make it difficult for us to obtain new customers, retain existing customers or maintain policies in force by existing customers. It could also result in increasing our service, administrative, policy acquisition or general expense due to the need for additional advertising and marketing of our products. In addition, our administrative, technology and management information systems expenditures could increase substantially as we try to maintain or improve our competitive position.

We compete for business not just on the basis of price, but also on the basis of product coverages, reputation, financial strength, quality of service (including claims

adjustment service), experience and breadth of product offering. We cannot provide assurance that we will be able to maintain a competitive position in the markets in which we operate, or that we will be able to expand our operations into new markets. If we fail to do so, our business could be materially adversely affected.

***We are rated by several rating agencies, and downgrades to our ratings could adversely affect our operations.***

Our ratings are important in establishing our competitive position and marketing the products of our insurance companies to our agents and customers, since rating information is broadly disseminated and generally used throughout the industry.

Our insurance company subsidiaries are rated by A.M. Best, Moody's, and Standard & Poor's. These ratings reflect a rating agency's opinion of our insurance subsidiaries' financial strength, operating performance, strategic position and ability to meet their obligations to policyholders. These ratings are not evaluations directed to investors, and are not recommendations to buy, sell or hold our securities. Our ratings are subject to periodic review by the rating agencies, and we cannot guarantee the continued retention or improvement of our current ratings. This is particularly true in the current economic environment where rating agencies may increase their capital requirements or other criteria for various rating levels. In addition, Chaucer's rating is derived from the rating assigned to Lloyd's, and Chaucer has very limited ability to directly affect the overall Lloyd's rating.

A downgrade in one or more of our or any of our subsidiaries' claims-paying ratings could negatively impact our business and competitive position, particularly in lines where customers require us to maintain minimum ratings. Additionally, a downgrade in one or more of our debt ratings could adversely impact our ability to access the capital markets and other sources of funds, increase the cost of current credit facilities, and/or adversely affect pricing of new debt sought in the capital markets in the future.

***Negative changes in our level of statutory surplus could adversely affect our ratings and profitability.***

The capacity for a U.S. insurance company's growth in premiums is in part a function of its statutory surplus. Maintaining appropriate levels of statutory surplus, as measured by state insurance regulators, is considered important by state insurance regulatory authorities and by rating agencies that rate insurers' claims-paying abilities and financial strength. As our business grows, or due to other factors, regulators may require that additional capital be contributed to increase the level of statutory surplus. Failure to maintain certain levels of statutory surplus could result in increased regulatory scrutiny, action by state reg-

ulatory authorities or a downgrade by private rating agencies. Our surplus is affected by, among other things, results of operations and investment gains, losses, impairments, and dividends from the insurance operating company to its parent company. A number of these factors affecting our level of statutory surplus are, in turn, influenced by factors that are out of our control, including the frequency and severity of catastrophes, changes in policyholder behavior, changes in rating agency models and economic factors such as changes in equity markets, credit markets, interest rates or foreign currency exchange rates.

The National Association of Insurance Commissioners, or NAIC, uses a system for assessing the adequacy of statutory capital for U.S. property and casualty insurers. The system, known as risk-based capital, is in addition to the states' fixed dollar minimum capital and other requirements. The system is based on risk-based formulas that apply prescribed factors to the various risk elements in an insurer's business and investments to report a minimum capital requirement proportional to the amount of risk assumed by the insurer. We believe that any failure to maintain appropriate levels of statutory surplus would have an adverse impact on our ability to grow our business profitably.

***We may not be able to grow as quickly or as profitably as we intend, which is important to our current strategy.***

Over the past several years, we have made and our current plans are to continue to make, significant investments in our Commercial and Personal Lines of business, and we have increased expenses and made acquisitions in order to, among other things, strengthen our product offerings and service capabilities, expand into new geographic areas, improve technology and our operating models, build expertise in our personnel, and expand our distribution capabilities, with the ultimate goal of achieving significant, sustained growth. The ability to achieve significant profitable premium growth in order to earn adequate returns on such investments and expenses, and to grow further without proportionate increases in expenses, is an important part of our current strategy. There can be no assurance that we will be successful at profitably growing our business, or that we will not alter our current strategy due to changes in our markets or an inability to successfully maintain acceptable margins on new business or for other reasons, in which case premiums written and earned, operating income and net book value could be adversely affected.

***An impairment in the carrying value of goodwill and intangible assets could negatively impact our consolidated results of operations and shareholders' equity.***

Upon an acquisition of a business, we record goodwill and intangible assets at fair value. Goodwill and intangible assets determined to have indefinite useful lives are not amortized, while other intangible assets are amortized over their estimated useful lives. Goodwill and intangible assets that are not amortized are reviewed for impairment at least annually. Evaluating the recoverability of such assets requires us to rely on estimates and assumptions related to return on equity, margin, growth rates, discount rates, and other data. There are inherent uncertainties related to these factors, and significant judgment is required in applying these factors. Goodwill and intangible asset impairment charges can result from declines in operating results, divestitures or sustained market declines and other factors. As of December 31, 2016, goodwill and intangible assets that are not amortized totaled \$246.8 million and represented 8.6% of shareholders' equity. Our legacy Hanover and Citizens businesses represent 53% of this balance; Chaucer represents 21% of this balance; AIX represents 20% of this balance; and, the remaining acquisitions combined represent 6% of this balance. Although we believe these assets are recoverable, we cannot provide assurance that future market or business conditions would not result in the impairment of a portion of these assets. Impairment charges could materially affect our financial position and our financial results in the quarter or annual period in which they are recognized.

***We could be subject to additional losses related to the sale of our discontinued FAFLIC and variable life insurance and annuity businesses.***

On January 2, 2009, we sold our remaining life insurance subsidiary, FAFLIC, to Commonwealth Annuity and Life Insurance Company. Coincident with the sale transaction, Hanover Insurance and FAFLIC entered into a reinsurance contract whereby Hanover Insurance assumed FAFLIC's discontinued accident and health insurance business. We previously owned Commonwealth Annuity, but sold it in 2005 in conjunction with our disposal of our variable life insurance and annuity business.

In connection with these transactions, we have agreed to indemnify Commonwealth Annuity for certain contingent liabilities, including litigation and other regulatory matters. We have established a reserve related to these contractual indemnifications. Although we believe that this reserve is adequate, we cannot provide assurance that costs related to these indemnifications when they ultimately settle, will not exceed our current reserve.



*We may incur financial losses related to our discontinued assumed accident and health reinsurance pools and arrangements.*

We previously participated, through FAFLIC, in approximately 40 assumed accident and health reinsurance pools and arrangements. The business was retained in the sale of FAFLIC and assumed by Hanover Insurance through a reinsurance agreement. During 1999, we ceased writing new premiums in this business, subject to certain contractual obligations. The reinsurance pool business consisted primarily of the medical and disability portions of workers' compensation risks, long-term care pools, assumed personal accident, individual medical, long-term disability and special risk business. We are currently monitoring and managing the run-off of our related participation in the 25 pools with remaining liabilities.

Under these arrangements, we variously acted as a reinsurer, a reinsured or both. In some instances, we ceded significant exposures to other reinsurers in the marketplace. The potential risk to us as a participant in these pools is primarily that other companies that reinsured this business from us may seek to avoid or fail to timely pay their reinsurance obligations (especially in light of the fact that historically these pools sometimes involved multiple layers of overlapping reinsurers, or so-called "spirals") or may become insolvent. Thus, we are exposed to both assumed losses and to credit risk related to these pools. We are not currently engaged in any significant disputes in respect to this business. At this time, we do not anticipate that any significant portion of recorded reinsurance recoverables will be uncollectible. However, we cannot provide assurance that all recoverables are collectible and should these recoverables prove to be uncollectible, our results of operations and financial position may be negatively affected.

We believe our reserves for the accident and health assumed and ceded reinsurance business appropriately reflect current claims, unreported losses and likely investment returns on related assets supporting these reserves. However, due to the inherent volatility in this business and the reporting lag of losses that tend to develop over time and which ultimately affect excess covers, there can be no assurance that current reserves are adequate or that we will not have additional losses in the future. Although we have discontinued participation in these reinsurance arrangements, unreported claims related to the years in which we were a participant may be reported, and previously reported claims may develop unfavorably. If any such unreported claims or unfavorable development is reported to us, our results of operations and financial position may be negatively impacted. In addition, the passage of the Federal Healthcare Act has caused us to have to expand our benefits for a portion of the residual healthcare policies with limited ability to increase premiums.

*Other market fluctuations and general economic, market and political conditions may also negatively affect our business, profitability and investment portfolio.*

It is difficult to predict the impact of a challenging economic environment on our business. In Commercial Lines, a difficult economy has resulted in reductions in demand for insurance products and services as there are more companies ceasing to do business and there are fewer business start-ups, particularly as small businesses are affected by a decline in overall consumer and business spending. Additionally, claims frequency could increase as policyholders submit and pursue claims more aggressively than in the past, fraud incidences may increase, or we may experience higher incidents of abandoned properties or poorer maintenance, which may also result in more claims activity. We have experienced higher workers' compensation claims as injured employees take longer to return to work, increased surety losses as construction companies experience financial pressures and higher retroactive premium returns as audit results reflect lower payrolls. Our business could also be affected by an ensuing consolidation of independent insurance agencies. Our ability to increase pricing has been impacted as agents and policyholders have been more price sensitive, customers shop for policies more frequently or aggressively, utilize comparative rating models or, in Personal Lines in particular, turn to direct sales channels rather than independent agents. We have also experienced decreased new business premium levels, retention and renewal rates, and renewal premiums. Specifically in Personal Lines, policyholders may reduce coverages or change deductibles to reduce premiums, experience declining home values, or be subject to increased foreclosures, and policyholders may retain older or less expensive automobiles and purchase or insure fewer ancillary items such as boats, trailers and motor homes for which we provide coverages. Additionally, if as a result of a difficult economic environment, drivers continue to eliminate automobile insurance coverage or to reduce their bodily injury limit, we may be exposed to more uninsured and underinsured motorist coverage losses.

Chaucer's business is similarly subject to risks related to the economy. In addition to the risks noted above, adverse economic conditions could negatively affect our ability to obtain letters of credit utilized by Chaucer to underwrite business through Lloyd's.

At December 31, 2016, we held approximately \$9 billion of investment assets in categories such as fixed maturities, equity securities, other investments, and cash and short-term investments. Our investments are primarily concentrated in the U.S. domestic market; however, we have exposure to international markets as well, with

approximately 15% of our cash and investment assets invested in foreign markets. Our investment returns, and thus our profitability, statutory surplus and shareholders' equity, may be adversely affected from time to time by conditions affecting our specific investments and, more generally, by bond, stock, real estate and other market fluctuations and general economic, market and political conditions, including the impact of changing government policies and geopolitical risks. Many of these broader market conditions are out of our control. Our ability to make a profit on insurance products depends in part on the returns on investments supporting our obligations under these products, and the value of specific investments may fluctuate substantially depending on the foregoing conditions. We may use a variety of strategies to hedge our exposure to interest and currency rates and other market risks. However, hedging strategies are not always available and carry certain credit risks, and our hedging could be ineffective. Moreover, increased government regulation of certain derivative transactions used to hedge certain market risks has served to prevent (or otherwise substantially increase the cost associated with) hedging such risks.

Additionally, the aggregate performance of our investment portfolio depends to a significant extent on the ability of our investment managers to select and manage appropriate investments. As a result, we are also exposed to operational risks which may include, but are not limited to, a failure to follow our investment guidelines, technological and staffing deficiencies and inadequate disaster recovery plans. The failure of these investment managers to perform their services in a manner consistent with our expectations and investment objectives could adversely affect our ability to conduct our business.

Debt securities comprise a material portion of our investment portfolio. The concentration of our investment portfolio in any one type of investment, industry or geography could have a disproportionately adverse effect on our investment portfolio. The issuers of debt securities, as well as borrowers under the loans we make, customers, trading counterparties, counterparties under swaps and other derivative contracts, banks which have commitments under our various borrowing arrangements, and reinsurers, may be affected by declining market conditions or credit weaknesses. These parties may default on their obligations to us due to lack of liquidity, downturns in the economy or real estate values, operational failure, bankruptcy or other reasons. Future increases in interest rates from current near-historic lows could result in increased defaults as borrowers are unable to pay the additional borrowing costs on variable rate securities or obtain refinancing. We cannot assure you that further impairment charges will not be necessary in the future. In addition, evaluation of available-for-sale securities for other-than-temporary impair-

ment includes inherent uncertainty and subjective determinations. We cannot be certain that such impairments are adequate as of any stated date. Our ability to fulfill our debt and other obligations could be adversely affected by the default of third parties on their obligations owed to us.

Deterioration in the global financial markets may adversely affect our investment portfolio and have a related impact on our other comprehensive income, shareholders' equity and overall investment performance. In recent years, global financial markets experienced unprecedented and challenging conditions, including a tightening in the availability of credit, the failure of several large financial institutions and concerns about the creditworthiness of the sovereign debt of several European and other countries. As a result, certain government bodies and central banks worldwide, including the U.S. Treasury Department and the U.S. Federal Reserve, provided for unprecedented intervention programs, the efficacy of which remain uncertain.

In addition, our current borrowings from the Federal Home Loan Bank of Boston ("FHLBB") are secured by collateral. If the fair value of pledged collateral falls below specific levels, we would be required to pledge additional collateral or repay any outstanding FHLBB borrowings.

Market conditions also affect the value of assets under our employee pension plans, including our U.S. Cash Balance Plan and Chaucer pension plan. The expense or benefit related to our employee pension plans results from several factors, including, but not limited to, changes in the market value of plan assets, interest rates, regulatory requirements or judicial interpretation of benefits. At December 31, 2016, our U.S. plan assets included approximately 85% of fixed maturities and 15% of equity securities and other assets. At December 31, 2016, our Chaucer pension plan assets included approximately 55% of equities, 35% of fixed maturities, and 10% of real estate funds. The Chaucer pension plan had net liabilities that exceeded assets by approximately \$16 million as of December 31, 2016. Additionally, our net liabilities exceed assets by approximately \$54 million and \$38 million for our U.S. qualified and U.S. non-qualified (which is an unfunded plan) pension plans, respectively, at December 31, 2016. Declines in the market value of plan assets and interest rates from levels at December 31, 2016, among other factors, could impact our funding estimates and negatively affect our results of operations. Deterioration in market conditions and differences between our assumptions and actual occurrences, and behaviors, including judicial determinations of ultimate benefit obligations pursuant to the Durand case discussed elsewhere, or otherwise, could result in a need to fund more into the qualified plans to maintain an appropriate funding level.

*We may experience unrealized losses on our investments, especially during a period of heightened volatility, which could have a material adverse effect on our results of operations or financial condition.*

Our investment portfolio and shareholders' equity can be, and in the past have been, significantly impacted by the changes in the market values of our securities. U.S. and global financial markets and economies remain uncertain. This could result in unrealized and realized losses in future periods, and adversely affect the liquidity of our investments, which could have a material adverse impact on our results of operations and our financial position. At December 31, 2016, our financial position is benefited by \$190.0 million as a result of unrealized gains, largely driven by the low interest rate environment. Information with respect to interest rate sensitivity is included in "Quantitative and Qualitative Disclosures" in Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K. Valuation of financial instruments (i.e., Level 1, 2, or 3) include methodologies, estimates, assumptions and judgments that are inherently subjective and open to different interpretations and could result in changes to investment valuations or the ability to receive such valuations on sale. During periods of market disruption it may be difficult to value certain of our securities if trading becomes less frequent and/or market data becomes less observable. In addition, in times of financial market disruption, certain asset classes that were in active markets with significant observable data may become illiquid. In those cases, the valuation process includes inputs that are less observable and require more subjectivity and judgment by management.

If, following such declines, we are unable to hold our investment assets until they recover in value, or if such asset value never recovers, we would incur other-than-temporary impairments which would be recognized as realized losses in our results of operations, reduce net income and earnings per share and adversely affect our liquidity. Temporary declines in market value are recorded as unrealized losses, which do not affect net income and earnings per share, but reduce other comprehensive income, which is reflected on our Consolidated Balance Sheets. We cannot provide assurance that we will not have additional other-than-temporary impairments and/or unrealized investment losses in the future. Likewise, there can be no assurance that our investment portfolio will retain the net unrealized gains reflected on the balance sheet as of December 31, 2016, since such gains are dependent on prevailing interest rates, credit ratings and creditworthiness and general economic and other factors.

We invest a portion of our portfolio in common stock or preferred stocks. The value of these assets fluctuates with the equity markets. Particularly in times of economic

weakness, the market value and liquidity of these assets may decline, and may impact net income, capital and cash flows.

*We are exposed to significant capital market risks related to changes in interest rates, credit spreads, equity prices and foreign exchange rates, which may adversely affect our results of operations, financial position or cash flows.*

We are exposed to significant capital markets risk related to changes in interest rates, credit spreads, equity prices and foreign currency exchange rates. If significant, declines in equity prices, changes in interest rates, changes in credit spreads and the strengthening or weakening of foreign currencies against the U.S. dollar could have a material adverse effect on our results, financial position or cash flows. Our exposure to interest rate risk relates primarily to the market price and cash flow variability associated with changes in interest rates. Our investment portfolio contains interest rate sensitive instruments, such as fixed income securities, which may be adversely affected by changes in interest rates from governmental monetary policies, domestic and international economic and political conditions and other factors beyond our control. A rise in market yields would reduce the fair value of our investment portfolio, but provide the opportunity to earn higher rates of return on funds reinvested. A further decline in interest rates, on the other hand, would increase the fair value of our investment portfolio, but we would earn lower rates of return on reinvested assets. We may be forced to liquidate investments prior to maturity at a loss in order to cover liabilities, and such liquidation could be accelerated in the event of significant loss events, such as catastrophes. Although we take measures to manage the economic risks of investing in a changing interest rate environment, we may not be able to mitigate the interest rate risk of our assets relative to our liabilities.

Our investment portfolio is invested primarily in high quality, investment-grade fixed income securities. However, we also invest in non-investment-grade high yield fixed income securities and alternative investments. These securities, which pay a higher rate of interest, also have a higher degree of credit or default risk. These securities may also be less liquid in times of economic weakness or market disruptions. Additionally, the reported value of our investments do not necessarily reflect the lowest current market price for the asset, and if we require significant amounts of cash on short notice, we may have difficulty selling our investments in a timely manner, be forced to sell them for less than we otherwise would have been able to realize, or both. While we have procedures to monitor the credit risk and liquidity of our invested assets, we expect from time to time, and particularly in periods of economic weakness, to experience default losses in our portfolio. This would result in a corresponding reduction of net income, capital and cash flows.

***Inflationary pressures may negatively impact expenses, reserves and the value of investments.***

Inflationary pressures in the geographies in which we operate may negatively impact reserves and the value of investments. In particular, inflationary pressures in the U.S. with respect to medical and health care, automobile repair and construction costs, all of which are significant components of our indemnity liabilities under policies we issue to our customers, and which could also impact the adequacy of reserves we have set aside for prior accident years, may have a negative effect on our results of operations. Inflationary pressures also cause or contribute to, or are the result of, increases in interest rates, which would reduce the fair value of our investment portfolio.

***Our operations may be adversely impacted by foreign currency fluctuations.***

Our reporting currency is the U.S. dollar. The functional currencies of our Chaucer segment are the U.S. dollar, U.K. pound sterling and the Canadian dollar. Exchange rate fluctuations relative to the functional currencies may materially impact our financial position. Further, our Chaucer segment transacts business and maintains assets and liabilities in currencies different than its functional currency, which exposes us to changes in currency exchange rates. In addition, locally required capital levels are invested in local currencies in order to satisfy regulatory requirements and to support local insurance operations regardless of currency fluctuations. We attempt to manage our foreign currency exposure through matching of assets and liabilities, and may also utilize derivatives from time to time. Despite our mitigation efforts, exposure to foreign exchange loss could have a material adverse effect on our reported earnings and book value. Chaucer's trade credit business is also susceptible to losses as a result of exchange rate fluctuations.

***We are a holding company and rely on our insurance company subsidiaries for cash flow; we may not be able to receive dividends from our subsidiaries in needed amounts and may be required to provide capital to support their operations.***

We are a holding company for a diversified group of insurance companies, and our principal assets are the shares of capital stock of these subsidiaries. Our ability to make required interest payments on our debt, as well as our ability to pay operating expenses and pay dividends to shareholders depends upon the receipt of sufficient funds from our subsidiaries. The payment of dividends by our insurance company subsidiaries is subject to regulatory restrictions and will depend on the surplus and future earnings of these subsidiaries, as well as these regulatory restrictions. We are required to notify insurance regulators prior to paying any dividends from our U.S. insurance sub-

sidaries, pre-approval is required with respect to "extraordinary dividends", and distributions from Chaucer are subject to various requirements imposed by Lloyd's and the PRA and FCA.

Because of the regulatory limitations on the payment of dividends from our insurance company subsidiaries, we may not always be able to receive dividends from these subsidiaries at times and in amounts necessary to meet our debt and other obligations. The inability of our subsidiaries to pay dividends to us in an amount sufficient to meet our debt interest and funding obligations would have a material adverse effect on us. These regulatory dividend restrictions also impede our ability to transfer cash and other capital resources among our subsidiaries.

Similarly, our insurance subsidiaries may require capital from the holding company to support their operations. For example, our holding company has provided a guaranty for the benefit of our Chaucer segment to support the letter of credit agreement supplied to support Chaucer's Funds at Lloyd's requirements.

Our dependence on our insurance subsidiaries for cash flow, and their potential need for capital support, exposes us to the risk of changes in their ability to generate sufficient cash inflows from new or existing customers or from increased cash outflows. Cash outflows may result from claims activity, expense payments or investment losses. Because of the nature of our business, claims activity can arise suddenly and in amounts which could outstrip our capital or liquidity resources. Reductions in cash flow or capital demands from our subsidiaries could have a material adverse effect on our business and results of operations.

***We may require additional capital or credit in the future, which may not be available or only available on unfavorable terms.***

We monitor our capital adequacy on a regular basis. Our future capital and liquidity requirements depend on many factors, including our premiums written, loss reserves and claim payments, investment portfolio composition and risk exposures, the availability of letters and lines of credit, as well as regulatory and rating agency capital requirements. In addition, our capital strength can affect our ratings, and therefore is important to our ability to underwrite. The quality of our claims paying and financial strength ratings are evaluated by independent rating agencies. Such ratings affect our ability to write quality business, our borrowing expenses and our ability to raise capital.

Our Chaucer business is required to satisfy Lloyd's minimum capital standards. We satisfy Lloyd's "member deposit funds" requirement (referred to as Funds at Lloyd's or "FAL"), in part, through a standby letter of credit. If the



letters of credit were drawn, we would expect to use a syndicated credit facility to pay such obligation, which would increase our debt borrowings. Our ability to borrow under this facility is conditioned upon the satisfaction of covenants and other requirements contained in the facility. If the syndicated credit facility was not available to repay this letter of credit facility, we would need to obtain capital elsewhere, and face the risk that alternative financing, such as through cash or other borrowings, would not be available at acceptable terms, if at all. In addition, no assurance can be given as to how much business Lloyd's will permit Chaucer to underwrite in any single year or as to the viability and cost of change to our current capital structure.

To the extent that our existing capital is insufficient or unavailable to fund our future operating requirements and/or cover claim losses, we may need to raise additional funds through financings or limit our growth. Any equity or debt financing, if available, may be on terms that are unfavorable to us. In the case of equity financings, dilution to our shareholders could result and, in any case, such securities may have rights, preferences, and privileges that are senior to our common stock. If we are not able to obtain additional capital as necessary, our business, results of operations and financial condition could be adversely affected.

***Errors or omissions in connection with the administration of any of our products may cause our business and profitability to be negatively impacted.***

We are responsible to our policyholders for administering their policies, premiums and claims and ensuring that appropriate records are maintained which reflect their transactions. We are subject to risks that errors or omissions of information occurred with respect to the administration of our products. We are also subject to misconduct and fraud on the part of our employees and agents. As a result, we are subject to risks of liabilities associated with "bad faith", unfair claims practices, unfair trade practices or similar allegations. Such risks may stem from allegations of agents, vendors, policyholders, claimants, members of Lloyd's syndicates, reinsurers, regulators, states' attorneys general, Lloyd's, the PRA and FCA, or other international regulators, or others. We may incur charges associated with any errors and omissions previously made or which are made in future periods. These charges may result from our obligation to policyholders to correct any errors or omissions or refund premiums, non-compliance with regulatory requirements, from fines imposed by regulatory authorities, or from other items, which may affect our financial position or results of operations.

***We are subject to the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and similar worldwide anti-bribery laws, which impose restrictions and may carry substantial penalties. Violations of these laws or allegations of such violations could cause a material adverse effect on our business, financial position and results of operations.***

The U.S. Foreign Corrupt Practices Act and anti-bribery laws in other jurisdictions, including anti-bribery legislation in the U.K. that took effect in 2011, generally prohibit companies and their intermediaries from making improper payments for the purpose of obtaining or retaining business or other commercial advantage. Our policies mandate compliance with these anti-bribery laws, which often carry substantial penalties. We cannot assure you that our internal control policies and procedures always will protect us from reckless or other inappropriate acts committed by our affiliates, employees, agents or coverholders. Violations of these laws, or allegations of such violations, could have a material adverse effect on our business, financial position and results of operations.

**Item 1B — Unresolved Staff Comments**  
None.

**Item 2 — Properties**

We own our headquarters, located at 440 Lincoln Street, Worcester, Massachusetts, with approximately 803,000 square feet.

We also own office space located in a three-building complex located at 808 North Highlander Way, Howell, Michigan, with approximately 140,000 square feet, where various business operations are conducted. Certain of our properties have been leased to unrelated third parties or are available for lease.

We lease office space located at 30 Fenchurch Street, London, United Kingdom. We also lease offices throughout the United States and in select locations worldwide for branch sales, underwriting and claims processing functions, and the operations of acquired subsidiaries.

We believe that our facilities are adequate for our present needs in all material respects.

**Item 3 — Legal Proceedings**

Reference is made to the litigation matter captioned "Durand Litigation" included in Note 18 – "Commitments and Contingencies – Legal Proceedings" in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

**Item 4 — Mine Safety Disclosures**

Not applicable.

## PART II

### Item 5 — Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

#### COMMON STOCK AND STOCKHOLDER OWNERSHIP

Our common stock is traded on the New York Stock Exchange under the symbol “THG”. On February 17, 2017, we had approximately 18,543 shareholders of record and 42,501,269 shares outstanding. On the same date, the trading price of our common stock was \$90.46 per share.

#### COMMON STOCK PRICES

The following tables set forth the high and low sales prices of our common stock for the periods indicated:

	HIGH <sup>(1)</sup>	LOW <sup>(1)</sup>
2016		
First Quarter	\$ 90.68	\$ 76.90
Second Quarter	\$ 91.15	\$ 80.41
Third Quarter	\$ 84.58	\$ 74.10
Fourth Quarter	\$ 91.66	\$ 74.88
2015		
First Quarter	\$ 73.47	\$ 67.74
Second Quarter	\$ 74.90	\$ 68.55
Third Quarter	\$ 83.28	\$ 74.76
Fourth Quarter	\$ 87.42	\$ 76.00

(1) Common stock prices were obtained from a third-party service provider.

#### DIVIDENDS

The Board of Directors declared dividends in 2016 and 2015 as follows:

PER SHARE AMOUNT	2016	2015
First Quarter	\$ 0.46	\$ 0.41
Second Quarter	\$ 0.46	\$ 0.41
Third Quarter	\$ 0.46	\$ 0.41
Fourth Quarter	\$ 0.50	\$ 0.46

We currently expect that comparable cash dividends will be paid in the future; however, the payment of future dividends on our common stock will be determined by the Board of Directors from time to time based upon cash available at our holding company, our results of operations and financial condition and such other factors as the Board of Directors considers relevant.

Dividends to shareholders may be funded from dividends paid to us from our subsidiaries. Dividends from insurance subsidiaries are subject to restrictions imposed by state insurance laws and regulations and for our foreign subsidiaries, to restrictions imposed by the PRA and Lloyd’s. See “Liquidity and Capital Resources” in Management’s Discussion and Analysis of Financial Condition and Results of Operations and Note 13 – “Dividend Restrictions” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

#### ISSUER PURCHASES OF EQUITY SECURITIES

The Board of Directors has authorized a stock repurchase program which provides for aggregate repurchases of up to \$900 million. Under the repurchase authorizations, we may repurchase our common stock from time to time, in amounts and prices and at such times as deemed appropriate, subject to market conditions and other considerations. Our repurchases may be executed using open market purchases, privately negotiated transactions, accelerated repurchase programs or other transactions. We are not required to purchase any specific number of shares or to make purchases by any certain date under this program. Total repurchases under this program as of December 31, 2016 were 14.0 million shares at a cost of \$716.4 million.

Shares purchased in the fourth quarter of 2016 are as follows:

Period	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)
October 1 – 31, 2016	—	\$ —	—	\$ 184
November 1 – 30, 2016 <sup>(1)</sup>	6,020	78.99	5,250	184
December 1 – 31, 2016 <sup>(2)</sup>	89,819	91.53	—	184
Total	95,839	\$ 90.75	5,250	\$ 184

(1) Includes 770 shares withheld to satisfy tax withholding amounts due from employees related to the receipt of stock which resulted from the exercise or vesting of equity awards.

(2) Reflects shares withheld to satisfy tax withholding amounts due from employees related to the receipt of stock which resulted from the exercise or vesting of equity awards.

## Item 6 — Selected Financial Data

### FIVE YEAR SUMMARY OF SELECTED FINANCIAL HIGHLIGHTS

YEARS ENDED DECEMBER 31	2016	2015	2014	2013	2012
<i>(in millions, except per share data)</i>					
<b>Statements of Income</b>					
<b>Revenues</b>					
Premiums	\$ 4,628.1	\$ 4,704.8	\$ 4,710.3	\$ 4,450.5	\$ 4,239.1
Net investment income	279.4	279.1	270.3	269.0	276.6
Net realized investment gains	8.6	19.5	50.1	33.5	23.6
Fees and other income	29.7	30.6	36.9	40.7	51.4
Total revenues	4,945.8	5,034.0	5,067.6	4,793.7	4,590.7
<b>Losses and Expenses</b>					
Losses and loss adjustment expenses	2,964.7	2,884.1	2,927.5	2,761.1	2,974.4
Amortization of deferred acquisition costs	1,035.2	1,033.2	1,040.0	971.0	938.1
Net loss from repayment of debt	88.3	24.1	0.1	27.7	5.1
Gain on disposal of U.K. motor business	(1.1)	(38.4)	-	-	-
Other operating expenses	666.4	691.6	722.0	704.8	644.4
Total losses and expenses	4,753.5	4,594.6	4,689.6	4,464.6	4,562.0
Income before income taxes	192.3	439.4	378.0	329.1	28.7
Income tax expense (benefit)	36.2	108.6	95.7	83.4	(17.4)
Income from continuing operations	156.1	330.8	282.3	245.7	46.1
Discontinued operations	(1.0)	0.7	(0.3)	5.3	9.8
Net income	\$ 155.1	\$ 331.5	\$ 282.0	\$ 251.0	\$ 55.9
Net income per common share (diluted)	\$ 3.59	\$ 7.40	\$ 6.28	\$ 5.59	\$ 1.23
Dividends declared per common share	\$ 1.88	\$ 1.69	\$ 1.52	\$ 1.36	\$ 1.23
<b>Balance Sheets (at December 31)</b>					
Total assets	\$14,220.4	\$13,781.2	\$13,748.9	\$13,367.3	\$13,478.6
Debt	786.4	803.1	892.7	892.5	843.1
Total liabilities	11,362.9	10,936.8	10,904.9	10,772.8	10,883.2
Shareholders' equity	2,857.5	2,844.4	2,844.0	2,594.5	2,595.4

Item 7 — Management’s Discussion and Analysis of  
Financial Condition and Results of Operations

TABLE OF CONTENTS

Introduction ..... 41

Executive Overview ..... 41

Description of Operating Segments ..... 42

Results of Operations - Consolidated ..... 42

Results of Operations - Segments ..... 44

Investments ..... 62

Other Items ..... 66

Quantitative and Qualitative Disclosures about Market Risk ..... 67

Income Taxes ..... 68

Critical Accounting Estimates ..... 69

Statutory Surplus of U.S. Insurance Subsidiaries ..... 73

Lloyd's Capital Requirement ..... 73

Liquidity and Capital Resources ..... 73

Off-Balance Sheet Arrangements ..... 77

Contingencies and Regulatory Matters ..... 77

Rating Agencies ..... 77

Risks and Forward-Looking Statements ..... 77

Glossary of Selected Insurance Terms ..... 77



## INTRODUCTION

The following Management's Discussion and Analysis of Financial Condition and Results of Operations is intended to assist readers in understanding the consolidated results of operations and financial condition of The Hanover Insurance Group, Inc. and its subsidiaries ("THG"). Consolidated results of operations and financial condition are prepared in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP"). This discussion should be read in conjunction with the Consolidated Financial Statements and related footnotes included elsewhere herein.

Results of operations include the accounts of The Hanover Insurance Company ("Hanover Insurance") and Citizens Insurance Company of America ("Citizens"), our principal U.S. domiciled property and casualty companies; Chaucer Holdings Limited ("Chaucer"), our United Kingdom ("U.K.") domiciled specialist insurance underwriting group which operates through the Society and Corporation of Lloyd's ("Lloyd's"); and other insurance and non-insurance subsidiaries. Results of operations include our discontinued operations, consisting primarily of our former life insurance businesses and our accident and health business.

## EXECUTIVE OVERVIEW

Business operations consist of four operating segments: Commercial Lines, Personal Lines, Chaucer and Other.

Net income was \$155.1 million in 2016, compared to \$331.5 million in 2015. In 2016, net income was adversely affected by lower operating income driven by unfavorable development on prior years' loss and loss adjustment expense ("LAE") reserves, partially offset by lower catastrophe and current accident year losses. (See discussion below). Additionally, net income was adversely affected by prepayment charges of \$56.0 million, net of tax, which we paid in the second quarter in connection with the redemption of \$380.0 million in higher coupon debt following our issuance of \$375.0 million of 4.50% senior debentures.

Operating income before interest expense and income taxes (a non-GAAP financial measure; see also "Results of Operations – Consolidated" below) was \$322.8 million in 2016 compared to \$466.1 million in 2015, a decrease of \$143.3 million. This decrease is due to unfavorable development on prior years' loss and LAE reserves ("prior years' loss reserves"), partially offset by lower catastrophe losses and current accident year losses. Unfavorable development on prior years' loss reserves was \$140.3 million in 2016, compared to favorable development of \$94.3 million in 2015. Pre-tax catastrophe losses were \$125.1 million in 2016, compared to \$181.3 million

during 2015. As explained later in this document, a portion of the change in operating income before interest expense and income taxes is also attributable to the effect of foreign exchange fluctuations. The fourth quarter of 2016 included a reserve charge of \$174.1 million as a result of our fourth quarter reserve review. See also "2016 Fourth Quarter Domestic Business Loss and LAE Reserve Increase" section below for further discussion.

We are continuing efforts to improve our underwriting results in both our Commercial and Personal Lines, through rate increases and improvements to our mix of business. At Chaucer, we continued to experience significant competitive pressure on rates in 2016, which is expected to persist in 2017. In response to these challenging market conditions, we actively manage Chaucer's underwriting portfolio, using our expertise, distinctive underwriting capabilities and market knowledge to target specific attractive underwriting opportunities.

## COMMERCIAL LINES

We believe our approach to the small commercial market, distinctiveness in the middle market, and continued development of specialty lines provides us with a diversified portfolio of products and delivers significant value to agents and policyholders. The small commercial and middle market businesses are expected to contribute to premium growth in Commercial Lines over the next several years as we continue to pursue our core strategy of developing strong partnerships with agents, distinctive products, franchise value through limited distribution, and industry segmentation. Growth in our specialty lines continues to be an important part of our strategy.

We believe these efforts have driven, and will continue to drive, improvement in our overall mix of business and our underwriting profitability. Commercial Lines net premiums written grew by 3.5% in 2016, driven by both our core commercial and specialty businesses. This growth is primarily due to rate and exposure increases, strong retention and targeted new business expansion.

Underwriting results declined in 2016, as compared to 2015, due to a significant increase in unfavorable development on prior years' loss reserves, partially offset by lower current accident year losses and lower catastrophe losses. Excluding the aforementioned reserve charge in the fourth quarter of 2016, current accident year results improved across most lines. The competitive nature of the Commercial Lines market requires us to be highly disciplined in our underwriting process to ensure that we write business at acceptable margins, and we continue to seek rate increases across our lines of business.

## PERSONAL LINES

Personal Lines focuses on partnering with high quality, value-oriented agencies that deliver consultative selling and stress the importance of account rounding (the conversion of single policy customers to accounts with multiple policies and additional coverages). Approximately 83% of our policies in force are account business. We are focused on making investments that help maintain profitability, build a distinctive position in the market, help diversify us geographically from our largest historical core states of Michigan, Massachusetts and New York, and provide us with profitable growth opportunities.

Net premiums written grew by 5.2% in 2016, primarily due to increased rates in both the homeowners and personal automobile lines, as well as improved new business trends and higher retention. Underwriting results improved in 2016, as compared to 2015, primarily due to lower catastrophe losses and improved current accident year loss performance, partially offset by unfavorable development on prior years' loss reserves and higher expenses. We continue to seek rate increases that keep pace with underlying loss cost trends, subject to regulatory and competitive considerations.

## CHAUCER

Chaucer deploys specialist underwriters in over 30 major insurance and reinsurance classes, including marine and aviation, property, energy, casualty and other coverages. We obtain business through Lloyd's, the leading international insurance and reinsurance market, which provides us with access to specialist business in over 200 countries and territories worldwide through its international licenses, brand reputation and strong security rating. Our underwriting strength, diverse portfolio and Lloyd's membership underpin our ability to actively manage the scale, composition and profitable development of this business.

Underwriting results declined in 2016, as compared to 2015, primarily due to higher current accident year losses, lower favorable development on prior years' loss reserves, and higher expenses, partially offset by lower catastrophe losses. Chaucer's net premiums written declined by 8.2% in 2016, primarily due to a planned increase in ceded reinsurance premiums, as we continue to manage our overall underwriting risk given the challenging market conditions.

## DESCRIPTION OF OPERATING SEGMENTS

Primary business operations include insurance products and services currently provided through four operating segments. Our domestic operating segments are Commercial Lines, Personal Lines, and Other. Our international operating segment is Chaucer. Commercial Lines includes commercial multiple peril, commercial automobile, workers' compensation and other commercial coverages, such as inland marine, specialty program business, management and professional liability, surety and specialty property. Personal Lines includes personal automobile, homeowners and other personal coverages. Chaucer includes marine and aviation, property, energy, casualty and other coverages (which includes international liability, specialist liability coverages, and syndicate participations) and, prior to June 30, 2015, U.K. motor. Effective June 30, 2015, we transferred our U.K. motor business to an unaffiliated U.K.-based insurance provider. Accordingly, results from the Chaucer segment no longer include this business subsequent to June 30, 2015. Included in the "Other" segment are Opus Investment Management, Inc., which markets investment management services to institutions, pension funds and other organizations; earnings on holding company assets; and, a discontinued voluntary pools business. We present the separate financial information of each segment consistent with the manner in which our chief operating decision maker evaluates results in deciding how to allocate resources and in assessing performance.

We report interest expense on debt separately from the earnings of our operating segments. This consists of interest on our senior debentures, subordinated debentures, collateralized borrowings with the Federal Home Loan Bank of Boston ("FHLBB"), and letter of credit facility.

## RESULTS OF OPERATIONS – CONSOLIDATED

### 2016 Compared to 2015

Consolidated net income was \$155.1 million in 2016, compared to \$331.5 million in 2015. The decrease of \$176.4 million is primarily due to lower operating income of \$95.6 million, principally from \$105.4 million of unfavorable development on prior years' loss reserves, or approximately 2% of total net reserves (including development on catastrophe losses), partially offset by lower catastrophe losses and current accident year losses. Consolidated net income for the year ended December 31, 2016 also included net losses from the repayment of debt of \$57.4 million, net of tax, compared to \$15.7 million, net of tax, for the year ended December 31, 2015. Additionally, the year ended December 31, 2015, included after-tax gains of \$40.6 million from the disposal of the U.K. motor business.

## 2015 Compared to 2014

Consolidated net income was \$331.5 million in 2015, compared to \$282.0 million in 2014. The increase of \$49.5 million is primarily due to higher operating income of \$47.3 million, principally from lower catastrophe losses and a lower expense ratio. Additionally, consolidated net income in 2015 included the \$40.6 million net gain from the disposal of the U.K. motor business. These increases were partially offset by lower net realized investment gains and an increase in net losses from repayments of debt. Net realized investment gains decreased during 2015 primarily as a result of an increase in other-than-temporary impairments (“OTTI”), and from lower gains from the sale of securities. Additionally, the year ended December 31, 2014 included after-tax losses of \$7.9 million from the settlement of a portion of the defined benefit pension plan obligation.

The following table reflects operating income before interest expense and income taxes for each operating segment and a reconciliation to consolidated net income from operating income before interest expense and income taxes (a non-GAAP measure).

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Operating income (loss) before interest expense and income taxes:			
Commercial Lines	\$ 35.9	\$143.3	\$139.9
Personal Lines	178.4	149.3	99.0
Chaucer	126.8	183.7	177.6
Other	(18.3)	(10.2)	(9.7)
Operating income before interest expense and income taxes	322.8	466.1	406.8
Interest expense on debt	(54.9)	(60.6)	(65.8)
Operating income before income taxes	267.9	405.5	341.0
Income tax expense on operating income	(83.5)	(125.5)	(108.3)
Operating income	184.4	280.0	232.7
Non-operating items:			
Net realized investment gains	8.6	19.5	50.1
Net loss from repayment of debt	(88.3)	(24.1)	(0.1)
Gain on disposal of U.K. motor business	1.1	38.4	—
Loss from settlement of pension obligation	—	—	(12.1)
Other	3.0	0.1	(0.9)
Income tax benefit on non-operating items	47.3	16.9	12.6
Income from continuing operations, net of taxes	156.1	330.8	282.3
Net (loss) gain from discontinued operations, net of taxes	(1.0)	0.7	(0.3)
Net income	\$155.1	\$331.5	\$282.0

## Non-GAAP Financial Measures

In addition to consolidated net income, discussed above, we assess our financial performance based upon pre-tax “operating income,” and we assess the operating performance of each of our four operating segments based upon the pre-tax operating income (loss) generated by each segment. As reflected in the table above, operating income before taxes excludes interest expense on debt and certain other items which we believe are not indicative of our core operations, such as net realized investment gains and losses. Such gains and losses are excluded since they are determined by interest rates, financial markets and the timing of sales. Also, operating income before taxes excludes net gains and losses on disposals of businesses, gains and losses related to the repayment of debt, discontinued operations, costs to acquire businesses, restructuring costs, the cumulative effect of accounting changes and certain other items. Although the items excluded from operating income before taxes are important components in understanding and assessing our overall financial performance, we believe a discussion of operating income before taxes enhances an investor’s understanding of our results of operations by highlighting net income attributable to the core operations of the business. However, operating income before taxes, which is a non-GAAP measure, should not be construed as a substitute for income before income taxes, and operating income should not be construed as a substitute for net income.

Catastrophe losses and prior years’ reserve development are significant components in understanding and assessing the financial performance of our business. Management reviews and evaluates catastrophes and prior years’ reserve development separately from the other components of earnings. References to “current accident year underwriting results” exclude prior accident year reserve development. Catastrophes and prior years’ reserve development are not predictable as to timing or the amount that will affect the results of our operations and have an effect on each year’s operating and net income. Management believes that providing certain financial metrics and trends excluding the effects of catastrophes and prior years’ reserve development helps investors to understand the variability in periodic earnings and to evaluate the underlying performance of our operations. Discussion of catastrophe losses in this Management’s Discussion and Analysis of Financial Condition and Results of Operations includes development on prior years’ catastrophe reserves and, unless otherwise indicated, such development is excluded from discussions on prior year loss and LAE reserve development.

## RESULTS OF OPERATIONS – SEGMENTS

The following is our discussion and analysis of the results of operations by business segment. The operating results are presented before interest expense, taxes and other items which management believes are not indicative of our core operations, including realized gains and losses.

The following table summarizes the results of operations for the periods indicated:

YEARS ENDED DECEMBER 31 (in millions)	2016	2015	2014
Operating revenues			
Net premiums written	<b>\$4,698.8</b>	\$4,616.8	\$4,810.1
Net premiums earned	<b>\$4,628.1</b>	\$4,704.8	\$4,710.3
Net investment income	<b>279.4</b>	279.1	270.3
Other income	<b>29.7</b>	30.6	36.9
Total operating revenues	<b>4,937.2</b>	5,014.5	5,017.5
Losses and operating expenses			
Losses and LAE	<b>2,964.7</b>	2,884.1	2,927.5
Amortization of deferred acquisition costs	<b>1,035.2</b>	1,033.2	1,040.0
Other operating expenses	<b>614.5</b>	631.1	643.2
Total losses and operating expenses	<b>4,614.4</b>	4,548.4	4,610.7
Operating income before interest expense and income taxes	<b>\$ 322.8</b>	\$ 466.1	\$ 406.8

### 2016 Compared to 2015

Operating income before interest expense and income taxes was \$322.8 million for the year ended December 31, 2016, compared to \$466.1 million for the year ended December 31, 2015, a decrease of \$143.3 million. This decrease was primarily due to higher unfavorable prior years' loss reserve development, partially offset by lower catastrophe and current accident year losses. Unfavorable development on prior years' loss reserves was \$140.3 million for the year ended December 31, 2016, compared to favorable development of \$94.3 million for the year ended December 31, 2015, a change of \$234.6 million. Catastrophe-related activity for the year ended December 31, 2016 was \$125.1 million, compared to \$181.3 million for the year ended December 31, 2015, a decrease of \$56.2 million. Lower current accident year losses in our domestic segment were partially offset by higher losses in our Chaucer segment.

Net premiums written increased by \$82.0 million for the year ended December 31, 2016, compared to the year ended December 31, 2015. This increase was primarily the result of growth in our domestic lines, partially offset by a planned increase in ceded reinsurance premiums in the Chaucer business.

### 2015 Compared to 2014

Operating income before interest expense and income taxes was \$466.1 million for the year ended December 31, 2015, compared to \$406.8 million for the year ended December 31, 2014, an increase of \$59.3 million. This increase was due primarily to lower catastrophe losses, a lower expense ratio and higher net investment income, partially offset by higher large loss activity in the Chaucer segment and lower favorable development on prior years' loss reserves.

Catastrophe-related activity for the year ended December 31, 2015 was \$181.3 million, compared to \$223.0 million for the year ended December 31, 2014, a decrease of \$41.7 million.

Favorable development on prior years' loss reserves was \$94.3 million for the year ended December 31, 2015, compared to \$99.1 million for the year ended December 31, 2014, a decrease of \$4.8 million.

Excluding the effect of our transfer of the U.K. motor business, net premiums written increased by \$112.7 million for the year ended December 31, 2015, compared to the year ended December 31, 2014. This increase was primarily driven by pricing increases, increased retention, and targeted new business expansion primarily in Commercial Lines. U.K. motor net premium written was \$(8.3) million and \$297.7 million in 2015 and 2014, respectively.

### Foreign Exchange

Most of Chaucer's transactions are denominated in the currencies that we use to settle transactions with Lloyd's, specifically the U.S. Dollar, the U.K. Pound Sterling ("GBP") and the Canadian Dollar. These are Chaucer's functional currencies under U.S. GAAP. A portion of Chaucer's transactions and its assets and liabilities are denominated in other currencies, such as the Euro, the Swiss Franc, the Australian Dollar and the Japanese Yen. Changes in the value of these currencies versus the functional currencies, particularly versus the GBP, cause transactional gains and losses during each reporting period. During 2016, the GBP weakened meaningfully against most currencies. We believe that this was due, in large part, to the effect of the U.K.'s referendum vote to discontinue its membership in the European Union ("Brexit Referendum"). In contrast, during 2015 and 2014, the GBP strengthened against most currencies. The following table summarizes the total effect of Chaucer's foreign exchange transactional gains and losses on comprehensive income:



YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Effect of revaluing loss and LAE reserves	<b>\$ (36.9)</b>	\$ 13.4	\$ 11.8
Effect of revaluing overseas deposits and cash	<b>11.5</b>	(0.5)	(4.6)
Effect of revaluing premium receivables	<b>3.4</b>	(1.2)	(2.9)
Total FX effect on operating income before interest expense and income taxes	<b>(22.0)</b>	11.7	4.3
FX losses reflected in net realized investment gains	<b>(0.7)</b>	(3.4)	(1.3)
Total FX effect on income before income taxes	<b>(22.7)</b>	8.3	3.0
Unrealized FX gains (losses) from investment securities	<b>8.3</b>	(1.2)	(4.7)
Total pre-tax effect of transactional FX (losses) gains on comprehensive income	<b>(14.4)</b>	7.1	(1.7)
Income tax benefit (expense)	<b>5.0</b>	(2.5)	0.6
Total effect of transactional FX (losses) gains on comprehensive income	<b>\$ (9.4)</b>	\$ 4.6	\$ (1.1)

During 2016, foreign exchange losses reduced pre-tax operating income by approximately \$22.0 million compared to foreign exchange gains on pre-tax operating income of approximately \$11.7 million and \$4.3 million in 2015 and 2014, respectively. This was due primarily to the

revaluation of loss and LAE reserves in various currencies, particularly the Euro, the Australian Dollar and the Japanese Yen, partially offset by the revaluation of investments in overseas deposits and cash. In addition, during 2016, pre-tax unrealized foreign exchange gains from Euro-denominated investment securities were \$8.3 million, which was reflected as an increase to accumulated other comprehensive income. During 2015 and 2014 the pre-tax unrealized foreign exchange impact from Euro-denominated investment securities was a loss of \$1.2 million and \$4.7 million, respectively.

Although we endeavor to balance assets and liabilities for our foreign currencies, a certain level of net exposure to exchange rate fluctuations persists. We monitor and seek to limit the extent of this exposure. These transactional foreign exchange gains and losses are unlikely to be material to our financial position, although they may be more significant to our financial results of operations in any one period.

#### PRODUCTION AND UNDERWRITING RESULTS

The following table summarizes premiums written on a gross and net basis, net premiums earned and loss, LAE, expense and combined ratios for the Commercial Lines, Personal Lines and Chaucer segments. Loss, LAE, catastrophe loss and combined ratios shown below include prior year reserve development. These items are not meaningful for our Other segment.

#### YEAR ENDED DECEMBER 31, 2016

(dollars in millions)	Gross Premiums Written	Net Premiums Written	Net Premiums Earned	Catastrophe Loss Ratios	Loss & LAE Ratios	Expense Ratios	Combined Ratios
Commercial Lines	<b>\$ 2,686.2</b>	<b>\$ 2,361.5</b>	<b>\$ 2,318.0</b>	<b>3.0</b>	<b>69.1</b>	<b>36.0</b>	<b>105.1</b>
Personal Lines	<b>1,604.6</b>	<b>1,521.2</b>	<b>1,471.5</b>	<b>3.2</b>	<b>63.6</b>	<b>28.7</b>	<b>92.3</b>
Chaucer	<b>1,106.6</b>	<b>816.1</b>	<b>838.6</b>	<b>1.0</b>	<b>50.0</b>	<b>40.4</b>	<b>90.4</b>
Total	<b>\$ 5,397.4</b>	<b>\$ 4,698.8</b>	<b>\$ 4,628.1</b>	<b>2.7</b>	<b>64.1</b>	<b>34.5</b>	<b>98.6</b>

#### YEAR ENDED DECEMBER 31, 2015

(dollars in millions)	Gross Premiums Written	Net Premiums Written	Net Premiums Earned	Catastrophe Loss Ratios	Loss & LAE Ratios	Expense Ratios	Combined Ratios
Commercial Lines	\$ 2,592.5	\$ 2,281.9	\$ 2,227.0	4.0	64.0	36.4	100.4
Personal Lines	1,530.5	1,445.6	1,426.6	5.3	66.0	28.2	94.2
Chaucer	1,321.5	889.3	1,051.2	1.6	49.2	38.3	87.5
Total	\$ 5,444.5	\$ 4,616.8	\$ 4,704.8	3.9	61.3	34.4	95.7

#### YEAR ENDED DECEMBER 31, 2014

(dollars in millions)	Gross Premiums Written	Net Premiums Written	Net Premiums Earned	Catastrophe Loss Ratios	Loss & LAE Ratios	Expense Ratios	Combined Ratios
Commercial Lines	\$ 2,442.5	\$ 2,155.9	\$ 2,081.4	4.2	63.1	37.1	100.2
Personal Lines	1,517.3	1,422.8	1,407.1	7.6	69.6	28.1	97.7
Chaucer	1,505.6	1,231.4	1,221.8	2.4	51.9	38.1	90.0
Total	\$ 5,465.4	\$ 4,810.1	\$ 4,710.3	4.7	62.2	34.7	96.9

The following table summarizes net premiums written, and loss and LAE and catastrophe loss ratios by line of business for the Commercial Lines and Personal Lines segments. Loss and LAE and catastrophe loss ratios include prior year reserve development.

YEAR ENDED DECEMBER 31, 2016

(dollars in millions)

	Net Premiums Written	Loss & LAE Ratios	Catastrophe Loss Ratios
Commercial Lines:			
Commercial multiple peril	\$ 792.9	66.7	5.8
Commercial automobile	307.1	78.6	0.8
Workers' compensation	285.6	50.6	—
Other commercial	975.9	73.2	2.4
Total Commercial Lines	2,361.5	69.1	3.0
Personal Lines:			
Personal automobile	953.6	72.2	0.6
Homeowners	529.7	49.9	7.8
Other personal	37.9	43.1	2.9
Total Personal Lines	1,521.2	63.6	3.2
Total	\$3,882.7	67.2	3.1

YEAR ENDED DECEMBER 31, 2015

(dollars in millions)

	Net Premiums Written	Loss & LAE Ratios	Catastrophe Loss Ratios
Commercial Lines:			
Commercial multiple peril	\$ 752.6	61.7	7.4
Commercial automobile	306.0	78.2	0.2
Workers' compensation	267.8	50.6	—
Other commercial	955.5	64.9	3.7
Total Commercial Lines	2,281.9	64.0	4.0
Personal Lines:			
Personal automobile	900.0	71.1	0.5
Homeowners	507.4	59.7	14.0
Other personal	38.2	32.2	2.6
Total Personal Lines	1,445.6	66.0	5.3
Total	\$ 3,727.5	64.8	4.5

YEAR ENDED DECEMBER 31, 2014

(dollars in millions)

	Net Premiums Written	Loss & LAE Ratios	Catastrophe Loss Ratios
Commercial Lines:			
Commercial multiple peril	\$ 705.1	62.2	10.4
Commercial automobile	302.6	76.6	0.4
Workers' compensation	247.8	68.0	—
Other commercial	900.4	57.7	1.8
Total Commercial Lines	2,155.9	63.1	4.2
Personal Lines:			
Personal automobile	884.1	72.5	1.0
Homeowners	499.0	67.1	19.5
Other personal	39.7	38.3	2.5
Total Personal Lines	1,422.8	69.6	7.6
Total	\$ 3,578.7	65.8	5.6

The following table summarizes premiums written on a gross and net basis and net premiums earned by line of business for the Chaucer segment.

YEAR ENDED DECEMBER 31, 2016

(in millions)

	Gross Premiums Written	Net Premiums Written	Net Premiums Earned
Chaucer:			
Marine and aviation	\$ 356.9	\$ 268.7	\$ 267.3
Property	230.1	141.8	144.1
Energy	158.7	97.5	125.5
Casualty and other	360.9	308.1	301.7
Total Chaucer	\$1,106.6	\$ 816.1	\$ 838.6

YEAR ENDED DECEMBER 31, 2015

(in millions)

	Gross Premiums Written	Net Premiums Written	Net Premiums Earned
Chaucer:			
Marine and aviation	\$ 354.2	\$ 286.9	\$ 277.6
Property	236.1	166.9	169.1
Energy	198.6	136.2	174.8
U.K. motor	187.5	(8.3)	135.4
Casualty and other	345.1	307.6	294.3
Total Chaucer	\$ 1,321.5	\$ 889.3	\$ 1,051.2

YEAR ENDED DECEMBER 31, 2014

(in millions)

	Gross Premiums Written	Net Premiums Written	Net Premiums Earned
Chaucer:			
Marine and aviation	\$ 374.6	\$ 304.8	\$ 284.1
Property	245.4	179.2	187.6
Energy	247.2	173.0	200.0
U.K. motor	319.1	297.7	305.9
Casualty and other	319.3	276.7	244.2
Total Chaucer	\$ 1,505.6	\$ 1,231.4	\$ 1,221.8

The following table summarizes GAAP underwriting results for the Commercial Lines, Personal Lines, Chaucer and Other segments and reconciles it to operating income (loss) before interest expense and income taxes.

YEAR ENDED DECEMBER 31, 2016

(in millions)	Commercial Lines	Personal Lines	Chaucer	Other	Total
Underwriting profit (loss), excluding prior year reserve development and catastrophes	\$ 171.1	\$ 155.1	\$ (7.0)	\$ (2.5)	\$ 316.7
Prior year (unfavorable) favorable loss and LAE reserve development on non-catastrophe losses	(223.0)	(4.3)	95.3	(8.3)	(140.3)
Prior year favorable (unfavorable) catastrophe development	3.7	(6.3)	37.5	—	34.9
Current year catastrophe losses	(73.8)	(40.7)	(45.5)	—	(160.0)
Underwriting (loss) profit	(122.0)	103.8	80.3	(10.8)	51.3
Net investment income	158.5	69.5	45.7	5.7	279.4
Fees and other income	8.5	11.4	7.1	2.7	29.7
Other operating expenses	(9.1)	(6.3)	(6.3)	(15.9)	(37.6)
Operating income (loss) before interest expense and income taxes	\$ 35.9	\$ 178.4	\$ 126.8	\$ (18.3)	\$ 322.8

YEAR ENDED DECEMBER 31, 2015

(in millions)	Commercial Lines	Personal Lines	Chaucer	Other	Total
Underwriting profit (loss), excluding prior year reserve development and catastrophes	\$ 121.2	\$ 128.1	\$ 28.2	\$ (1.6)	\$ 275.9
Prior year (unfavorable) favorable loss and LAE reserve development on non-catastrophe losses	(45.2)	19.7	120.1	(0.3)	94.3
Prior year (unfavorable) favorable catastrophe development	(2.0)	(9.1)	32.9	—	21.8
Current year catastrophe losses	(86.7)	(66.7)	(49.7)	—	(203.1)
Underwriting (loss) profit	(12.7)	72.0	131.5	(1.9)	188.9
Net investment income	156.3	72.5	45.9	4.4	279.1
Fees and other income	8.4	12.2	7.0	3.0	30.6
Other operating expenses	(8.7)	(7.4)	(0.7)	(15.7)	(32.5)
Operating income (loss) before interest expense and income taxes	\$ 143.3	\$ 149.3	\$ 183.7	\$ (10.2)	\$ 466.1

YEAR ENDED DECEMBER 31, 2014

(in millions)	Commercial Lines	Personal Lines	Chaucer	Other	Total
Underwriting profit (loss), excluding prior year reserve development and catastrophes	\$ 88.7	\$ 123.4	\$ 46.7	\$ (1.7)	\$ 257.1
Prior year (unfavorable) favorable loss and LAE reserve development on non-catastrophe losses	(9.2)	5.1	104.6	(1.4)	99.1
Prior year (unfavorable) favorable catastrophe development	(4.9)	-	23.2	—	18.3
Current year catastrophe losses	(82.9)	(106.4)	(52.0)	—	(241.3)
Underwriting (loss) profit	(8.3)	22.1	122.5	(3.1)	133.2
Net investment income	149.4	71.9	44.2	4.8	270.3
Fees and other income	8.2	12.0	13.7	3.0	36.9
Other operating expenses	(9.4)	(7.0)	(2.8)	(14.4)	(33.6)
Operating income (loss) before interest expense and income taxes	\$ 139.9	\$ 99.0	\$ 177.6	\$ (9.7)	\$ 406.8

## 2016 Compared to 2015

### *Commercial Lines*

Commercial Lines net premiums written were \$2,361.5 million for the year ended December 31, 2016, compared to \$2,281.9 million for the year ended December 31, 2015. This \$79.6 million increase was primarily driven by pricing increases, strong retention, and targeted new business expansion.

Commercial Lines underwriting loss for the year ended December 31, 2016 was \$122.0 million, compared to \$12.7 million for the year ended December 31, 2015, a change of \$109.3 million. Unfavorable development on prior years' loss reserves ("prior year development") for the year ended December 31, 2016 was \$223.0 million, compared to \$45.2 million for the year ended December 31, 2015, an unfavorable change of \$177.8 million, primarily due to higher than expected losses in other commercial lines of \$168.0 million, which includes our AIX program business of \$75.3 million. This was principally driven by losses in accident years 2014 and prior, primarily from programs which have since been terminated, as well as higher than expected losses in our general liability lines of \$56.0 million, and higher than expected losses in surety lines of \$35.3 million. We also experienced unfavorable prior year development in our commercial multiple peril line of \$74.2 million and in our commercial automobile line of \$27.5 million. These items were partially offset by favorable prior year development in our workers' compensation line of \$46.7 million. Catastrophe-related losses decreased for the year ended December 31, 2016 at \$70.1 million, compared to \$88.7 million for the year ended December 31, 2015.

Commercial Lines current accident year underwriting profit, excluding catastrophes, was \$171.1 million for the year ended December 31, 2016, compared to \$121.2 million for the year ended December 31, 2015. This \$49.9 million improvement was primarily due to improved current accident year loss performance, primarily due to property coverages in our commercial multiple peril and inland marine lines, premium growth and lower expenses.

We are continuing efforts to improve our underwriting results, including through increased rates; however, our ability to increase Commercial Lines net premiums written while maintaining or improving underwriting results is expected to be affected by price competition and the challenging economic environment. We continue to monitor these trends and consider them in our rate actions.

### *Personal Lines*

Personal Lines net premiums written were \$1,521.2 million for the year ended December 31, 2016, compared to \$1,445.6 million for the year ended December 31, 2015, an increase of \$75.6 million. This was primarily due to increased rates in both the personal automobile and homeowners lines of business, as well as improved new business trends and higher retention.

Net premiums written in the personal automobile line of business for the year ended December 31, 2016 were \$953.6 million, compared to \$900.0 million for the year ended December 31, 2015, an increase of \$53.6 million. This increase was primarily due to rate increases, as well as an increase in policies in force of 1.4%. Net premiums written in the homeowners line of business for the year ended December 31, 2016 were \$529.7 million, compared to \$507.4 million for the year ended December 31, 2015, an increase of \$22.3 million. This is attributable to rate increases, as well as an increase in policies in force of 1.8%.

Personal Lines underwriting profit for the year ended December 31, 2016 was \$103.8 million, compared to \$72.0 million for the year ended December 31, 2015, an improvement of \$31.8 million. Catastrophe losses for the year ended December 31, 2016 were \$47.0 million, compared to \$75.8 million for the year ended December 31, 2015, a decrease of \$28.8 million. Unfavorable development on prior years' loss reserves for the year ended December 31, 2016 was \$4.3 million, compared to favorable prior year development of \$19.7 million for the year ended December 31, 2015, a decline of \$24.0 million.

Personal Lines current accident year underwriting profit, excluding catastrophes, was \$155.1 million in the year ended December 31, 2016, compared to \$128.1 million for the year ended December 31, 2015. This \$27.0 million increase was primarily a result of lower weather-related property losses, primarily in our homeowners line of business, as well as rate increases.

Although we have been able to obtain rate increases in our Personal Lines markets and believe that our ability to obtain these increases will continue, our ability to maintain Personal Lines net premiums written and to maintain and improve underwriting results may be affected by price competition, recent years' weather-related losses, our exposure management actions, and regulatory and legal developments. We monitor these trends and consider them in our rate actions.



### *Chaucer*

Chaucer's net premiums written were \$816.1 million for the year ended December 31, 2016, compared to \$889.3 million for the year ended December 31, 2015. This decline of \$73.2 million was primarily due to a planned increase in ceded reinsurance premiums as we manage our overall underwriting risk given the challenging market conditions, as well as from lower premium volumes in our energy line where underwriting conditions continued to reflect the effects of low oil prices, and in our aviation line, partially offset by growth in our marine and casualty lines.

Chaucer's underwriting profit for the year ended December 31, 2016 was \$80.3 million, compared to \$131.5 million for the year ended December 31, 2015, a decrease of \$51.2 million. This decrease is primarily due to higher current accident year losses, lower favorable prior year reserve development and higher expenses, partially offset by lower catastrophe losses. Favorable development on prior years' loss reserves for the year ended December 31, 2016 was \$95.3 million, compared to \$120.1 million for the year ended December 31, 2015, a decrease of \$24.8 million, including the effect of foreign exchange fluctuations (see "Foreign Exchange" section above for further discussion). Catastrophe losses for the year ended December 31, 2016 were \$8.0 million, compared to \$16.8 million for the year ended December 31, 2015, a decrease of \$8.8 million.

Chaucer's current accident year underwriting loss, excluding catastrophes, was \$7.0 million in the year ended December 31, 2016, compared to an underwriting profit of \$28.2 million for the year ended December 31, 2015. This \$35.2 million change was primarily due to higher large losses in the marine line, including trade credit coverages related to poor market conditions and underlying commodity price-sensitive accounts, and an increased frequency of losses in our property line, partially offset by lower large losses in the energy line.

We continue to experience significant competition across the international insurance industry. Current pricing conditions in all markets continue to be affected by high industry capacity and competition, and a continued absence of major losses in our markets. There can be no assurance that we will be able to maintain adequate rates in light of economic conditions in our markets. Additionally, because of the inherently volatile nature of losses in many of our product lines, we may continue to experience large losses or an elevated level of losses from these or other product lines.

### *Other*

Other operating losses were \$18.3 million for the year ended December 31, 2016, compared to \$10.2 million for the year ended December 31, 2015, an increase of \$8.1 million primarily due to unfavorable prior year reserve development in our run-off voluntary pools business.

## **2015 Compared to 2014**

### *Commercial Lines*

Commercial Lines net premiums written were \$2,281.9 million for the year ended December 31, 2015, compared to \$2,155.9 million for the year ended December 31, 2014. This \$126.0 million increase was primarily driven by pricing increases, increased retention, and targeted new business expansion.

Commercial Lines underwriting loss for the year ended December 31, 2015 was \$12.7 million, compared to \$8.3 million for the year ended December 31, 2014, a decline of \$4.4 million. Unfavorable development on prior years' loss reserves for the year ended December 31, 2015 was \$45.2 million, compared to \$9.2 million for the year ended December 31, 2014, an increase of \$36.0 million. Catastrophe-related losses increased slightly for the year ended December 31, 2015 at \$88.7 million, compared to \$87.8 million for the year ended December 31, 2014. Unfavorable prior year development was due to higher than expected losses in other commercial lines of \$53.7 million, which includes our AIX program business. This was principally driven by losses in accident years 2013 and prior, primarily from programs which have since been terminated and from higher than expected losses in our general liability lines, partially offset by favorable development in our commercial umbrella and healthcare lines, also included in other commercial lines. We also experienced unfavorable prior year development in our commercial automobile line of \$23.4 million. These items were partially offset by favorable prior year development in our workers' compensation line of \$46.9 million.

Commercial Lines current accident year underwriting profit, excluding catastrophes, was \$121.2 million for the year ended December 31, 2015, compared to \$88.7 million for the year ended December 31, 2014. This \$32.5 million improvement was primarily due to growth in earned premium, underwriting expense efficiencies, and improved loss performance in all major lines of business that resulted from our pricing and underwriting actions.

### *Personal Lines*

Personal Lines net premiums written were \$1,445.6 million for the year ended December 31, 2015, compared to \$1,422.8 million for the year ended December 31, 2014, an increase of \$22.8 million. This was due primarily to increased rates and improved retention in both the personal automobile and homeowners lines of business.

Net premiums written in the personal automobile line of business for the year ended December 31, 2015 were \$900.0 million compared to \$884.1 million for the year ended December 31, 2014, an increase of \$15.9 million.

This increase was primarily due to rate increases, partially offset by a decline in policies in force of 3.2%. Net premiums written in the homeowners line of business for the year ended December 31, 2015 were \$507.4 million, compared to \$499.0 million for the year ended December 31, 2014, an increase of \$8.4 million. This is attributable to rate increases which offset a decline in policies in force of 1.9%.

Personal Lines underwriting profit for the year ended December 31, 2015 was \$72.0 million, compared to \$22.1 million for the year ended December 31, 2014, an improvement of \$49.9 million. Catastrophe losses for the year ended December 31, 2015 were \$75.8 million, compared to \$106.4 million for the year ended December 31, 2014, a decrease of \$30.6 million. Favorable development on prior years' loss reserves for the year ended December 31, 2015 was \$19.7 million, compared to \$5.1 million for the year ended December 31, 2014, an increase of \$14.6 million, primarily from the homeowners line.

Personal Lines current accident year underwriting profit, excluding catastrophes, was \$128.1 million in the year ended December 31, 2015, compared to \$123.4 million for the year ended December 31, 2014. This \$4.7 million improvement was primarily a result of our ongoing pricing and underwriting actions in both lines of business, partially offset by higher large loss experience in the homeowners line, largely due to fire.

#### **Chaucer**

Chaucer's net premiums written were \$889.3 million for the year ended December 31, 2015, compared to \$1,231.4 million for the year ended December 31, 2014. This decline of \$342.1 million was primarily due to the aforementioned transfer of the U.K. motor business. Excluding the U.K. motor business, net premiums written declined by \$36.1 million or 3.9%, primarily due to lower volumes in the energy, marine and property lines, partially offset by growth in the specialist liability line.

Chaucer's underwriting profit for the year ended December 31, 2015 was \$131.5 million, compared to \$122.5 million for the year ended December 31, 2014, an increase of \$9.0 million. This increase is primarily due to higher favorable development on prior years' loss reserves, lower catastrophe losses and lower expenses, partially offset by higher large loss activity in the energy line. Favorable development on prior years' loss reserves for the year ended December 31, 2015 was \$120.1 million, compared to \$104.6 million for the year ended December 31, 2014, an increase of \$15.5 million. Catastrophe losses for the year ended December 31, 2015 were \$16.8 million, compared to \$28.8 million for the year ended December 31, 2014, a decrease of \$12.0 million.

Chaucer's current accident year underwriting profit, excluding catastrophes, was \$28.2 million in the year ended December 31, 2015, compared to \$46.7 million for the year ended December 31, 2014. This \$18.5 million decline was primarily due to higher large losses in the energy line, partially offset by lower losses in the aviation and property lines.

#### **Other**

Other operating losses were \$10.2 million for the year ended December 31, 2015, compared to \$9.7 million for the year ended December 31, 2014, an increase of \$0.5 million.

### **RESERVE FOR LOSSES AND LOSS ADJUSTMENT EXPENSES**

#### **Overview of Loss Reserve Estimation Process**

We maintain reserves for our property and casualty products to provide for our ultimate liability for losses and loss adjustment expenses (our "loss reserves") with respect to reported and unreported claims incurred as of the end of each accounting period. These reserves are estimates, taking into account past loss experience, modified for current trends, as well as prevailing economic, legal and social conditions. Loss reserves represent our largest liability.

Management's process for establishing loss reserves is a comprehensive process that involves input from multiple functions throughout our organization, including actuarial, finance, claims, legal, underwriting, distribution and business operations management. The process incorporates facts currently known and the current, and in some cases, the anticipated, state of the law and coverage litigation. Based on information currently available, we believe that the aggregate loss reserves at December 31, 2016 were adequate to cover claims for losses that had occurred as of that date, including both those known to us and those yet to be reported. However, as described below, there are significant uncertainties inherent in the loss reserving process. Our estimate of the ultimate liability for losses that had occurred as of December 31, 2016 is expected to change in future periods as we obtain further information, and such changes could have a material effect on our results of operations and financial position.

Our loss reserves include case estimates for claims that have been reported and estimates for claims that have been incurred but not reported ("IBNR") at the balance sheet date. They also include estimates of the expenses associated with processing and settling all reported and unreported claims, less estimates of anticipated salvage and subrogation recoveries. Our property and casualty loss reserves are not discounted to present value.

Case reserves are established by our claim personnel individually on a claim by claim basis and based on information specific to the occurrence and terms of the underlying policy. For some classes of business, average case reserves are used initially. Case reserves are periodically reviewed and modified based on new or additional information pertaining to the claim.

Our ultimate IBNR reserves are estimated by management and our reserving actuaries on an aggregate basis for each line of business or coverage for loss and loss expense liabilities not reflected within the case reserves. The sum of the case reserves and the IBNR reserves represents our estimate of total unpaid losses and loss adjustment expenses.

We regularly review our loss reserves using a variety of industry accepted analytical techniques. We update the loss reserves as historical loss experience develops, additional claims are reported and resolved and new information becomes available. Net changes in loss reserves are reflected in operating results in the period in which the reserves are changed.

The IBNR reserve includes a provision for claims that have occurred but have not yet been reported to us, some of which may not yet be known to the insured, as well as a provision for future development on reported claims. IBNR represents a significant proportion of our total net loss reserves, particularly for long-tail liability classes. In fact, approximately 52% of our aggregate net loss reserves at December 31, 2016 were for IBNR losses and loss expenses.

### **Critical Judgments and Key Assumptions**

We determine the amount of our loss reserves based on an estimation process that is very complex and considers information from both company specific and industry data, as well as general economic and other information. The estimation process is a combination of objective and subjective information, the blending of which requires significant professional judgment. There are various assumptions required, including future trends in frequency and severity of claims, operational changes in claim handling and case reserving practices, and trends related to general economic and social conditions. Informed judgments as to our ultimate exposure to losses are an integral component of our loss reserve estimation process.

Given the inherent complexity of our loss reserve estimation process and the potential variability of the assumptions used, the actual emergence of losses will vary, perhaps substantially, from the estimate of losses included in our financial statements, particularly in those instances where settlements or other claim resolutions do not occur until well into the future. Our net loss reserves at December 31, 2016 were \$4.7 billion. Therefore, a rela-

tively small percentage change in the estimate of net loss reserves would have a material effect on our results of operations.

There is greater inherent uncertainty in estimating insurance reserves for certain types of property and casualty insurance lines, particularly liability lines, where a longer period of time may elapse before a definitive determination of ultimate liability and losses may be made. In addition, the technological, judicial, regulatory and political climates involving these types of claims are continuously evolving. There is also greater uncertainty in establishing reserves with respect to business that is new to us, particularly new business which is generated with respect to newly introduced product lines, by newly appointed agents or in geographies in which we have less experience in conducting business, such as certain new program business written by AIX, Chaucer's U.S. casualty treaty and international liability lines, our professional liability specialty lines, our excess and surplus specialty lines, and business written in the western part of the United States. In some of these cases, there is less historical experience or knowledge and less data upon which we can rely. A combination of business that is both new to us and has longer development periods provides even greater uncertainty in estimating insurance reserves. In our management and professional liability lines, we are modestly increasing, and expect to continue to increase, our exposure to longer-tailed liability lines, including directors and officers liability, errors and omissions liability and product liability coverages. The Chaucer business acquired in 2011 contains several liability lines, of which financial institution and professional liability, U.S. casualty treaty liability, international liability and energy liability, contribute the most uncertainty. Chaucer's U.S. casualty treaty lines have grown in 2015 and 2016, due to our expanded underwriting capabilities.

We regularly update our reserve estimates as new information becomes available and additional events occur which may impact the resolution of unsettled claims. Reserve adjustments are reflected in the results of operations as adjustments to losses and LAE. Often, these adjustments are recognized in periods subsequent to the period in which the underlying policy was written and the loss event occurred. When these types of subsequent adjustments affect prior years, they are described separately as "prior year reserve development". Such development can be either favorable or unfavorable to our financial results and may vary by line of business. As discussed below, estimated loss and LAE reserves for claims occurring in prior years developed unfavorably by \$140.3 million for the year ended December 31, 2016, and developed favorably by \$94.3 million, and \$99.1 million for the

years ended December 31, 2015, and 2014, respectively. Additionally, our estimated loss and LAE reserves for catastrophe claims occurring in prior years developed favorably by \$34.9 million, \$21.8 million and \$18.3 million for the years ended December 31, 2016, 2015 and 2014, respectively. However, there can be no assurance that current loss and LAE reserves will be sufficient.

We regularly review our reserving techniques, our overall reserving position and our reinsurance. Based on (i) our review of historical data, legislative enactments, judicial decisions, legal developments in impositions of damages and policy coverage, political attitudes and trends in general economic conditions, (ii) our review of per claim information, (iii) our historical loss experience and that of the industry, (iv) the nature of policies written by us, and (v) our internal estimates of required reserves, we believe that adequate provision has been made for loss reserves. However, establishment of appropriate reserves is an inherently uncertain process, and there can be no certainty that current established reserves will prove adequate in light of subsequent actual experience. A significant change to the estimated reserves could have a material impact on our results of operations and financial position. An increase or decrease in reserve estimates would result in a corresponding decrease or increase in financial results. For example, each one percentage point change in the aggregate loss and LAE ratio resulting from a change in reserve estimation is currently projected to have an approximate \$46 million impact on operating income, based on 2016 full year premiums.

The major causes of material uncertainty relating to ultimate losses and LAE ("risk factors") generally vary for each line of business, as well as for each separately analyzed component of the line of business. In some cases, such risk factors are explicit assumptions of the estimation method and in others, 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 substantially unchanged. Actual results will likely vary from expectations for each of these assumptions, resulting in an ultimate claim liability that is different from that being estimated currently.

Some risk factors affect multiple lines of business. Examples include changes in claim handling and claim reserving practices, changes in claim settlement patterns, regulatory and legislative actions, court actions, timeliness of claim reporting, state mix of claimants, and degree of claimant fraud. Additionally, there is also a higher degree of uncertainty due to growth in our newly acquired businesses, with respect to which we have less familiarity and, in some cases, limited historical claims experience. The extent of the impact of a risk factor will also vary by com-

ponents within a line of business. Individual risk factors are subject to interactions with other risk factors within line of business components. Thus, risk factors can have offsetting or compounding effects on required reserves.

Inflation generally increases the cost of losses covered by insurance contracts. The effect of inflation varies by product. Our property and casualty insurance premiums are established before the amount of losses and LAE and the extent to which inflation may affect such expenses are known. Consequently, we attempt, in establishing rates and reserves, to anticipate the potential impact of inflation in the projection of ultimate costs. For example, we monitor and have seen recent increasing trends in medical costs, wages and legal costs, which are key considerations in setting reserve assumptions for workers' compensation and other liability lines. We are also monitoring the continued advancements in technology and design found in automobiles and homes and the potential for increased claims settlement costs that may result from repairs or replacement of such equipment. Increases are reflected in our current reserve estimates, but continued increases could contribute to increased losses and LAE in the future.

We are also defendants in various litigation matters, including putative class actions, which may seek punitive damages, bad faith or extra-contractual damages, legal fees and interest, or claim a broader scope of policy coverage or settlement and payment obligations than our interpretation. Resolution of these cases are often highly unpredictable and could involve material unanticipated damage awards.

## **Loss and LAE Reserves by Line of Business**

### ***Reserving Process Overview***

Our loss reserves include amounts related to short-tail and long-tail classes of business. "Tail" refers to the time period between the occurrence of a loss and the final settlement of the claim. The longer the time span between the incidence of a loss and the settlement of the claim (i.e., a longer tail), the more the ultimate settlement amount may likely vary from our original estimate.

Short-tail classes consist principally of automobile physical damage, homeowners property, commercial property and marine business. The Chaucer business, while having more longer-tail coverages than our traditional U.S. business, contains a substantial book of worldwide property insurance and reinsurance business, including certain high excess property layers, marine property, aviation property and energy property business, which has relatively short development patterns. For these property coverages, claims are generally reported and settled shortly after the loss occurs because the claims relate to tangible property and are more likely to be discovered shortly after the loss occurs. Consequently, the estimation of loss reserves for these classes is generally less complex. However, this is less



true for our Chaucer assumed reinsurance business and high excess property layers where there is often a longer period of time between the date a claim is incurred and the date the claim is reported to us, as the reinsurer, as compared with our direct insurance operations. This delay in reporting and recognition of the extent of a loss may be greater where Chaucer is not the lead syndicate handling a claim. Therefore, the risk of delayed recognition of loss reserve development is higher for our assumed reinsurance and high excess property layers than for our direct insurance lines.

While we estimate that a majority of our written premium is in what we would characterize as shorter-tailed classes of business, most of our loss reserves relate to longer-tail liability classes of business. Long-tailed classes include commercial liability, automobile liability, workers' compensation, contract surety and other types of third-party coverage. Chaucer's longer-tailed lines include aviation liability, trade credit and political risk classes, marine liability, energy liability, nuclear liability, U.S. casualty treaty liability, international liability, specialist liability, and financial institutions and professional liability. For many liability claims, significant periods of time, ranging up to several years or more, may elapse between the occurrence of the loss, the discovery and reporting of the loss to us and the settlement of the claim. As a result, loss experience in the more recent accident years for long-tailed liability coverage has limited statistical credibility because a relatively small proportion of losses in these accident years (the calendar years in which losses are incurred) are reported claims and an even smaller proportion are paid losses. Liability claims are also more susceptible to litigation and can be significantly affected by changing contract interpretations, the legal environment, the risk and expense of protracted litigation and inflation. Consequently, the estimation of loss reserves for these coverages is more complex and typically subject to a higher degree of variability and uncertainty compared to short-tailed coverages.

Most of our indirect business from discontinued voluntary and involuntary pools is long-tailed casualty reinsurance. Reserve estimates for this business are therefore subject to the variability caused by extended loss emergence periods. The estimation of loss reserves for this business is further complicated by delays between the time the claim is reported to the ceding insurer and when it is reported by the ceding insurer to the pool manager and then to us, and by our dependence on the quality and consistency of the loss reporting by the ceding company and actuarial estimates by the pool manager.

A review of loss reserves for each of the classes of business which we write is conducted regularly, generally quarterly. This review process takes into consideration a variety of trends that impact the ultimate settlement of claims. Where appropriate, the review includes a review of overall

payment patterns and the emergence of paid and reported losses relative to expectations.

The loss reserve estimation process relies on the basic assumption that past experience, adjusted for the effects of current developments and likely trends, is an appropriate basis for predicting future outcomes. As part of this process, we use a variety of analytical methods that consider experience, trends and other relevant factors. IBNR reserves are generally calculated by first projecting the ultimate cost of all claims that have been reported or expected to be reported in the future and then subtracting reported losses and loss expenses. Reported losses include cumulative paid losses and loss expenses plus case reserves. Within the loss reserving process, standard actuarial methods which include: (1) loss development factor methods; (2) expected loss methods (Bornheutter-Ferguson); and (3) adjusted loss methods (Berquist-Sherman), are given due consideration. These methods are described below:

- Loss development factor methods generally assume that the losses yet to emerge for an accident year are proportional to the paid or reported loss amount observed to date. Historical patterns of the development of paid and reported losses by accident year can be predictive of the expected future patterns that are applied to current paid and reported losses to generate estimated ultimate losses by accident year.
- Bornheutter-Ferguson methods utilize the product of the expected ultimate losses times the proportion of ultimate losses estimated to be unreported or unpaid to calculate IBNR. The expected ultimate losses are based upon current estimates of ultimate losses from prior accident years, adjusted to reflect expected earned premium, current rating, claims cost levels and changes in business mix. The expected losses, and corresponding loss ratios, are a critical component of Bornheutter-Ferguson methodologies and provide a general reasonability guide.
- Berquist-Sherman methods are used for estimating reserves in business lines where historical development patterns may be deemed less reliable for more recent accident years' ultimate losses. Under these methods, patterns of historical paid or reported losses are first adjusted to reflect current payment settlement patterns and case reserve adequacy and then evaluated in the same manner as the loss development factor methods described above. When the adequacy of case reserves change, the Berquist-Sherman incurred method may be deemed more reliable than the reported loss development factor method. Likewise, when the settlement patterns change, the Berquist-Sherman paid method may be deemed more reliable than the paid loss development factor method.



In addition to the methods described above, various tailored reserving methodologies are used for certain businesses. For example, for some low volume and high volatility classes of business, special reserving techniques are utilized that estimate IBNR by selecting the loss ratio that balances actual reported losses to expected reported losses as defined by the estimated underlying reporting pattern. Also, for some classes with long exposure periods (e.g., energy, construction, engineering and political risks), earnings patterns plus an estimated reporting lag applied to the Bornheutter-Ferguson initial expected loss ratio are used to estimate IBNR. This is done in order to reflect the changing average exposure periods by policy year (and consequently accident year).

In completing the loss reserve analysis, a variety of assumptions must be made for each line of business, coverage and accident year. Each estimation method has its own pattern, parameter and/or judgmental dependencies, with no estimation method being better than the others in all situations. The relative strengths and weaknesses of the various estimation methods, when applied to a particular class of business, can also change over time, depending on the underlying circumstances. In many cases, multiple estimation methods will be valid for the particular facts and circumstances of the relevant class of business. The manner of application and the degree of reliance on a given method will vary by line of business and coverage, and by accident year based on an evaluation of the above dependencies and the potential volatility of the loss frequency and severity patterns. The estimation methods selected or given weight at a particular valuation date are those that are believed to produce the most reliable indication for the loss reserves being evaluated. Selections incorporate input from claims personnel, pricing actuaries, and underwriting management on loss cost trends and other factors that could affect ultimate losses.

For most classes of shorter-tailed business in our Commercial and Personal Lines segments, the emergence of paid and incurred losses generally exhibits a relatively stable pattern of loss development from one accident year to the next. Thus, for these classes, the loss development factor method is generally appropriate. For many of the classes of shorter-tailed business in our Chaucer segment, the emergence of paid and incurred losses may exhibit a relatively volatile pattern of loss development from one accident year to the next. In certain cases where there is a relatively low level of reliability placed on the available paid and incurred loss data, expected loss methods or adjusted loss methods are considered appropriate for the most recent accident year.

For longer-tailed lines of business, applying the loss development factor method often requires even more judgment in selecting development factors, as well as more sig-

nificant extrapolation. For those long-tailed lines of business with high frequency and relatively low per-loss severity (e.g., personal automobile liability), volatility will often be sufficiently modest for the loss development factor method to be given significant weight, even in the most recent accident years, but expected loss methods and adjusted loss methods are always considered and frequently utilized in the selection process. For those long-tailed lines of business with low frequency and high loss potential (e.g., commercial liability), anticipated loss experience is less predictable because of the small number of claims and erratic claim severity patterns. In these situations, the loss development factor methods may not produce a reliable estimate of ultimate losses in the most recent accident years since many claims either have not yet been reported or are only in the early stages of the settlement process. Therefore, the loss reserve estimates for these accident years are based on methods less reliant on extrapolation, such as Bornheutter-Ferguson. Over time, as a greater number of claims are reported and the statistical credibility of loss experience increases, loss development factor methods or adjusted loss methods are given increasing weight.

Management endeavors to apply as much available data as practicable to estimate the loss reserve amount for each line of business, coverage and accident year, utilizing varying assumptions, projections and methods. The ultimate outcome is likely to fall within a range of potential outcomes around this loss reserve estimated amount.

Our carried reserves for each line of business and coverage are determined based on this quarterly loss reserving process. In making the determination, we consider numerous quantitative and qualitative factors. Quantitative factors include changes in reserve estimates in the period, the maturity of the accident year, trends observed over the recent past, the level of volatility within a particular class of business, the estimated effects of reinsurance, including reinstatement premiums, general economic trends, and other factors. Qualitative factors may include legal and regulatory developments, changes in claim handling and case reserving practices, recent entry into new markets or products, changes in underwriting practices or business mix, concerns that we do not have sufficient or quality historical reported and paid loss and LAE information with respect to a particular line or segment of our business, effects of the economy and political outlook, perceived anomalies in the historical results, evolving trends or other factors. In doing so, we must evaluate whether a change in the data represents credible actionable information or an anomaly. Such an assessment requires considerable judgment. Even if a change is determined to be apparent, it is not always possible to determine the extent of the change. As a result, there can be a time lag between the emergence

of a change and a determination that the change should be partially or fully reflected in the carried loss reserves. In general, changes are made more quickly to reserves for more mature accident years and less volatile classes of business.

#### ***Reserving Process Uncertainties***

As stated above, numerous factors (both internal and external) contribute to the inherent uncertainty in the process of establishing loss reserves, including changes in the rate of inflation for goods and services related to insured damages (e.g., medical care, home repairs, etc.), changes in the judicial interpretation of policy provisions, and settlement obligations, changes in the general attitude of juries in determining damage awards, legislative actions, changes in the extent of insured injuries, changes in the trend of expected frequency and/or severity of claims, changes in our book of business (e.g., change in mix due to new product offerings, new geographic areas, etc.), changes in our underwriting practices, and changes in claim handling procedures and/or systems. Regarding our indirect business from voluntary and involuntary pools, we are provided loss estimates by managers of each pool. We adopt reserve estimates for the pools that consider this information and other facts.

In addition, we must consider the uncertain effects of emerging or potential claims and coverage issues that arise as legal, judicial, social conditions, political risks, and economic conditions change. For example, claims which we consider closed may be re-opened as additional damages surface or new liability or damage theories are presented. Also, historically we have observed more frequent and higher severity in workers' compensation, bodily injury and other liability claims, and more credit related losses (for example, in our surety business) during periods of economic uncertainty or high unemployment. These and other issues could have a negative effect on our loss reserves by either extending coverage beyond the original underwriting intent or by increasing the number or size of claims.

As part of our loss reserving analysis, we consider the various factors that contribute to the uncertainty in the loss reserving process. Those factors that could materially affect our loss reserve estimates include loss development patterns and loss cost trends, reporting lags, rate and exposure level changes, the effects of changes in coverage and policy limits, business mix shifts, the effects of regulatory and legislative developments, economic circumstances, the effects of changes in judicial interpretations, the effects of emerging claims and coverage issues and the effects of changes in claim handling and claim reserving practices. In making estimates of reserves, however, we do not necessarily make an explicit assumption for each of these factors. Moreover, all estimation methods do not utilize the

same assumptions and typically no single method is determinative in the reserve analysis for a line of business and coverage. Consequently, changes in our loss reserve estimates generally are not the result of changes in any one assumption. Instead, the variability will be affected by the interplay of changes in numerous assumptions, many of which are implicit to the approaches used.

For each line of business and coverage, we regularly adjust the assumptions and methods used in the estimation of loss reserves in response to our actual loss experience, as well as our judgments regarding changes in trends and/or emerging patterns. In those instances where we primarily utilize analyses of historical patterns of the development of paid and reported losses, this may be reflected, for example, in the selection of revised loss development factors. In longer-tailed classes of business and for which loss experience is less predictable due to potential changes in judicial interpretations, potential legislative actions, the cost of litigation or determining liability and the ultimate loss, inflation, potential claims and other issues, this may be reflected in a judgmental change in our estimate of ultimate losses for particular accident years.

The Chaucer segment contains run-off business comprised of liability lines, notably financial institutions and professional liability business. There is particular uncertainty around the reserve estimates in respect of business written in 2007 and 2008 which have been subject to claims arising out of the financial turmoil in that time period, particularly in the financial institutions book. These claims are unlikely to be settled for some time since they contain numerous coverage issues and in many cases involve class action lawsuits that are likely to take several years to resolve. We have utilized substantially all of our available reinsurance with respect to losses and LAE related to financial institutions business written in 2008.

The future impact of the various factors that contribute to the uncertainty in the loss reserving process is impossible to predict. There is potential for significant variation in the development of loss reserves, particularly for long-tailed classes of business and classes of business that are more vulnerable to economic or political risks.

#### ***Reserving Process for Catastrophe Events***

The estimation of claims and claims expense reserves for catastrophes also comprises estimates of losses from reported claims and IBNR, primarily for damage to property. In general, our estimates for catastrophe reserves are determined on an event basis by considering various sources of available information, including specific loss estimates reported to us based on claim adjuster inspections, overall industry loss estimates, and our internal data regarding exposures related to the geographical location of the event. However, depending on the nature of the catas-

trophe, the estimation process can be further complicated by other impediments. For example, for hurricanes and other severe wind storms, complications often include the inability of insureds to promptly report losses, delays in the ability of claims adjusting staff to inspect losses, difficulties in determining whether losses are covered by our homeowners policy (generally for damage caused by wind or wind driven rain) or are specifically excluded from coverage caused by flood, and challenges in estimating additional living expenses, assessing the impact of demand surge, exposure to mold damage, and the effects of numerous other considerations. Another example is the complication of estimating the cost of business interruption coverage on commercial lines policies. Estimates for catastrophes which occur at or near the end of a financial reporting period may be even less reliable since we will have less claims data available and little time to complete our estimation process. In such situations, we may adapt our practices to accommodate the circumstances.

For events designated as catastrophes which affect our Commercial and Personal Lines business segments, we generally calculate IBNR reserves directly as a result of an estimated IBNR claim count and an estimated average claim amount for each event. Such an assessment involves a comprehensive analysis of the nature of the event, of policyholder exposures within the affected geographic area and of available claims intelligence. Depending on the nature of the event, available claims intelligence could include surveys of field claims associates within the affected geographic area, feedback from a catastrophe claims team sent into the area, as well as data on claims reported as of the financial statement date. In addition, loss emergence from similar historical events is compared to the estimated IBNR for our current catastrophe events to help assess the reasonableness of our estimates.

For events designated as catastrophes which affect our Chaucer business segment, we initially calculate IBNR reserves using a ground up exposure by exposure analysis based on each cedant or insured. These are supported by broker supplied information, catastrophe modeling and industry event estimates. As more specific claim level data becomes available over time for each catastrophe event, these initial estimates are revised and updated by looking at the paid and incurred claim development and by considering it in comparison to previous catastrophe loss events.

#### ***Reserving Sensitivity Analysis***

The following discussion presents disclosure related to possible variation in net reserve estimates due to changes in key assumptions. This information is provided for illustrative purposes only. Many other assumptions may also lead to material reserve adjustments. If any such variations do occur, then they would likely occur over a period of several years and therefore their impact on our results of oper-

ations would be recognized during the same periods. It is important to note, however, that there is the potential for future variations greater than the amounts described below and for any such variations to be recognized in a single quarterly or annual period. No consideration has been given to potential correlation or lack of correlation among key assumptions or among lines of business and coverage as described below. As a result and because there are so many other factors which affect our net reserve estimate, it would be inappropriate to take the amounts described below and simply add them together in an attempt to estimate volatility in total. While we believe these are reasonably likely scenarios, the reader should not consider the following sensitivity analysis as illustrative of a net reserve range.

- **Personal and Commercial Automobile Bodily Injury** – reserves recorded for bodily injury on U.S. voluntary business were \$595.8 million as of December 31, 2016. A key assumption for bodily injury is the inflation rate underlying the estimated reserve. A five point change (e.g., 4% changed to 9% or -1%) in the embedded inflation rate would have changed total reserves by approximately \$53 million, either positive or negative, respectively, at December 31, 2016.
- **Personal Automobile Personal Injury Protection Medical Payment** – reserves recorded for personal injury protection medical payment on U.S. voluntary business were \$144.2 million as of December 31, 2016. A key assumption for this coverage is the inflation rate underlying the estimated reserve. Given the long reporting pattern for this line of business, an additional key assumption is the amount of additional development required to reach full maturity, thereby reflecting ultimate costs, as represented by the tail factor. A five point change in the embedded inflation rate and a one point change to the tail factor assumption (e.g., 1.02 changed to 1.01 or 1.03) would have changed total reserves by approximately \$67 million, either positive or negative, at December 31, 2016.
- **Workers' Compensation** – reserves recorded for workers' compensation on U.S. voluntary business were \$369.2 million as of December 31, 2016. A key assumption for workers' compensation is the inflation rate underlying the estimated reserve. Given the long reporting pattern for this line of business, an additional key assumption is the amount of additional development required to reach full maturity, thereby reflecting ultimate costs, as represented by the tail factor. A five point change in the embedded inflation rate and a one point change to the tail factor assumption would have changed total reserves by approximately \$83 million, either positive or negative, at December 31, 2016.

- **Monoline and Multiple Peril General Liability** – reserves recorded for monoline and multiple peril general liability on U.S. voluntary business were \$672.0 million as of December 31, 2016. A key assumption for monoline and multiple peril general liability is the implied adequacy of the underlying case reserves. A ten point change in case adequacy (e.g., 10% deficiency changed to 0% or 20% deficiency) would have changed total reserves by approximately \$63 million, either positive or negative, at December 31, 2016.
- **Specialty Programs** – reserves recorded (including allocated LAE) for the AIX Companies were \$342.3 million as of December 31, 2016. Two key assumptions underlying the actuarial reserve analysis for specialty programs are the inflation rate underlying the estimated reserve for our commercial automobile liability, general liability and workers' compensation coverages, as well as the tail factor selection for workers' compensation. A five point change to the embedded inflation rate for the aforementioned coverages, and a one point change in the workers' compensation tail factor on AIX program business would have changed total reserves by approximately \$50 million at December 31, 2016.
- **New classes of business** – claims reserves recorded for new classes of Chaucer business (primarily within international liability, U.S. casualty treaty and new lines written in overseas offices) were \$221.7 million as of December 31, 2016. An increase in the ultimate loss ratio by 5%, 10% and 15% in the 2014 and prior, 2015 and 2016 years of account, respectively, on these classes would have increased total reserves by approximately \$33 million at December 31, 2016.
- **Casualty classes of business** – claims reserves recorded for casualty classes of Chaucer business were \$457.6 million as of December 31, 2016. An increase in the ultimate loss ratio of 2.5% across all classes and years of account would have increased total reserves by approximately \$41 million at December 31, 2016.
- **Trade Credit Coverages** – Chaucer has experienced losses in its trade credit coverages within the marine line primarily attributable to the worldwide drop in commodity prices in 2016. Claims reserves for these losses as of December 31, 2016 were \$21 million. If Chaucer were to experience another 10 individual claims, at the same average cost of the 28 notified to date, and were to not make any subrogation type recoveries (on existing or the new claims) then this would have increased total reserves by approximately \$21 million at December 31, 2016.

### ***Carried Reserves and Reserve Rollforward***

The table below provides a reconciliation of the gross beginning and ending reserve for unpaid losses and loss adjustment expenses.

YEARS ENDED DECEMBER 31 (in millions)	2016	2015	2014
Gross loss and LAE reserves, beginning of year	<b>\$6,574.4</b>	\$6,391.7	\$6,231.5
Reinsurance recoverable on unpaid losses	<b>2,280.8</b>	1,983.0	2,030.4
Net loss and LAE reserves, beginning of year	<b>4,293.6</b>	4,408.7	4,201.1
Net incurred losses and LAE in respect of losses occurring in:			
Current year	<b>2,859.3</b>	3,000.2	3,044.9
Prior year non-catastrophe development	<b>140.3</b>	(94.3)	(99.1)
Prior year catastrophe development	<b>(34.9)</b>	(21.8)	(18.3)
Total incurred losses and LAE	<b>2,964.7</b>	2,884.1	2,927.5
Net payments of losses and LAE in respect of losses occurring in:			
Current year	<b>1,142.7</b>	1,245.6	1,328.7
Prior years	<b>1,367.2</b>	1,418.4	1,398.9
Total payments	<b>2,509.9</b>	2,664.0	2,727.6
Commutation of Chaucer Flagstone reinsurance agreement	—	—	85.7
Transfer of U.K. motor business	—	(300.6)	—
Effect of foreign exchange rate changes	<b>(73.8)</b>	(34.6)	(78.0)
Net reserve for losses and LAE, end of year	<b>4,674.6</b>	4,293.6	4,408.7
Reinsurance recoverable on unpaid losses	<b>2,274.8</b>	2,280.8	1,983.0
Gross reserve for losses and LAE, end of year	<b>\$6,949.4</b>	\$6,574.4	\$6,391.7



The table below summarizes the gross reserve for losses and LAE by line of business.

DECEMBER 31 (in millions)	2016	2015	2014
Commercial multiple peril	\$ 899.7	\$ 725.1	\$ 661.5
Workers' compensation	580.2	615.2	615.2
Commercial automobile	374.2	336.2	307.8
Other commercial lines			
AIX program business	453.2	398.6	342.9
General liability	261.9	204.8	181.5
Surety	72.4	36.2	19.2
Umbrella	112.6	95.1	89.6
Other lines	311.5	228.2	182.6
Total other commercial lines	1,211.6	962.9	815.8
Total Commercial Lines	3,065.7	2,639.4	2,400.3
Personal automobile	1,430.2	1,407.5	1,407.0
Homeowners and other personal	123.8	120.2	121.4
Total Personal	1,554.0	1,527.7	1,528.4
Total Chaucer	2,289.4	2,372.5	2,425.8
Total Other Segment	40.3	34.8	37.2
Total loss and LAE reserves	\$6,949.4	\$6,574.4	\$6,391.7

Within other commercial lines in the table above, general liability is comprised of both monoline general liability and certain management and professional liability coverages, and other lines is primarily comprised of lawyers professional liability, fidelity, marine, miscellaneous property, and healthcare lines. Loss and LAE reserve development in our Other Segment is related to our run-off voluntary assumed reinsurance pools business. Also included in the above table, primarily in other lines, are \$61.0 million, \$57.7 million and \$60.6 million of asbestos and environmental reserves as of December 31, 2016, 2015 and 2014, respectively. Included in the Chaucer segment in the above table are \$117.0 million, \$166.0 million and \$203.3 million of reserves as of December 31, 2016, 2015 and 2014, respectively, related to Chaucer's financial and professional liability lines written in 2008 and prior periods.

#### Prior Year Development

In 2016, total net unfavorable prior year loss and LAE development, including catastrophe losses, was \$105.4 million, or approximately 2% of total net reserves, comprised of unfavorable non-catastrophe loss and LAE development of \$140.3 million, partially offset by favorable catastrophe loss development of \$34.9 million. In 2015, total net favorable prior year loss and LAE development, including catastrophe losses, was \$116.1 million, or approximately 3% of total net reserves, comprised of favor-

able non-catastrophe loss and LAE development of \$94.3 million and favorable catastrophe loss development of \$21.8 million. In 2014, total net favorable prior year loss and LAE development, including catastrophe losses, was \$117.4 million, or approximately 3% of total net reserves, comprised of favorable non-catastrophe loss and LAE development of \$99.1 million and favorable catastrophe loss development of \$18.3 million.

As a result of our 2016 fourth quarter reserve review of domestic lines of business, as discussed further below, carried domestic reserves for prior accident years, excluding catastrophes, were increased by \$174.1 million in the fourth quarter, of which \$161.5 million related to Commercial Lines. The majority of this adjustment is attributed to our long-tailed commercial liability coverages, including our AIX program business. In general, higher than expected loss and LAE emergence in 2016 led us to adjust our reserve assumptions in our fourth quarter reserve review and place greater weight on the adverse severity trends experienced in the most recent calendar years.

It is not possible to know whether the factors that affected loss reserves in the year ended December 31, 2016 will also occur in future periods. As discussed in detail in this Form 10-K, there are inherent uncertainties in estimating reserves for losses and LAE and we encourage you to read this Form 10-K for more information about our reserving process and the judgments, uncertainties and risks associated therewith.

The table below provides a summary of (favorable)/unfavorable loss and LAE reserve development, excluding catastrophes.

YEARS ENDED DECEMBER 31 (in millions)	2016	2015	2014
Commercial multiple peril	\$ 74.2	\$ 15.0	\$ (4.9)
Workers' compensation	(46.7)	(46.9)	(5.6)
Commercial automobile	27.5	23.4	15.1
Other commercial lines:			
AIX program business	75.3	70.7	10.9
General liability	56.0	14.3	2.3
Surety	35.3	1.5	(5.2)
Umbrella	(9.0)	(19.4)	(1.4)
Other lines	10.4	(13.4)	(2.0)
Total other commercial lines	168.0	53.7	4.6
Total Commercial Segment	223.0	45.2	9.2
Personal automobile	4.8	(7.2)	(5.9)
Homeowners and other personal lines	(0.5)	(12.5)	0.8
Total Personal Segment	4.3	(19.7)	(5.1)
Total Chaucer Segment	(95.3)	(120.1)	(104.6)
Total Other Segment	8.3	0.3	1.4
Total loss and LAE reserve development, excluding catastrophes	\$ 140.3	\$ (94.3)	\$ (99.1)



#### **2016 Loss and LAE Development, excluding catastrophes**

In 2016, net unfavorable loss and LAE development was \$140.3 million, primarily as a result of net unfavorable development of \$223.0 million for Commercial Lines, partially offset by favorable development of \$95.3 million for Chaucer. The net unfavorable Commercial Lines development primarily resulted from higher than expected losses in other commercial lines of \$168.0 million, which includes the AIX program business. This was primarily driven by AIX programs and business classes which have since been terminated or substantially revised, general liability coverages in accident years 2012 through 2015, and surety bonds in accident years 2012 through 2015. We also experienced higher than expected losses within the commercial multiple peril line of \$74.2 million for accident years 2012 through 2015 and the commercial automobile line of \$27.5 million in accident years 2012 through 2014, both primarily within liability coverages. Partially offsetting the unfavorable development was lower than expected losses of \$46.7 million within the workers' compensation line, primarily related to accident years 2013 through 2015, and, to a lesser extent, our commercial umbrella line related to accident year 2015.

Chaucer's favorable development during 2016 was primarily the result of lower than expected losses in the energy line of \$27.6 million, primarily in the 2013 through 2015 accident years, in the marine and aviation line of \$24.2 million, primarily in the 2008, 2009, 2014 and 2015 accident years and in the property line of \$17.5 million, primarily in the 2013 through 2015 accident years. Additionally, Chaucer experienced lower than expected losses within casualty and other lines, specifically the specialist and international liability lines, of \$13.4 million, primarily in the 2014 and prior accident years. Partially offsetting Chaucer's favorable development was the unfavorable impact of foreign exchange rate movements on prior years' loss reserves. See "Foreign Exchange" section above for further discussion.

#### **2015 Loss and LAE Development, excluding catastrophes**

In 2015, net favorable loss and LAE development was \$94.3 million, primarily as a result of favorable development of \$120.1 million for Chaucer, partially offset by net unfavorable development of \$45.2 million for Commercial Lines. As a result of our year-end 2015 reserve review of domestic commercial and personal lines of business, carried reserves were adjusted among several of these lines of business, impacting the prior year development by line, although these adjustments had no impact on aggregate domestic carried reserves.

Chaucer's favorable development was primarily the result of lower than expected losses in the energy line of

\$39.9 million, primarily in the 2012 through 2014 accident years, in the marine and aviation line of \$29.6 million, primarily in the 2010, 2012 and 2013 accident years and the property line of \$18.5 million, primarily in the 2012 through 2014 accident years. Additionally, Chaucer experienced lower than expected losses within casualty and other lines, specifically the specialist and international liability lines, of \$21.9 million primarily in the 2008, 2011 and 2013 accident years. Chaucer's favorable development was also partially attributable to the favorable impact of foreign exchange rate movements on prior years' loss reserves. See "Foreign Exchange" section above for further discussion.

The net unfavorable Commercial Lines development primarily resulted from higher than expected losses in other commercial lines of \$53.7 million. This was primarily driven by AIX programs and business classes which have since been terminated and general liability lines in accident years 2009 through 2012, partially offset by lower than expected losses in the commercial umbrella line in accident years 2012 through 2014 and in the healthcare line in accident years 2010 through 2014. We also experienced higher than expected losses within the commercial automobile line of \$23.4 million, primarily related to liability coverage in accident years 2011 through 2013, and in the commercial multiple peril line, primarily in accident years 2008, 2009 and 2011. Partially offsetting the unfavorable development was lower than expected losses of \$46.9 million within the workers' compensation line, primarily related to accident years 2005 through 2014, and, to a lesser extent, our commercial umbrella line, primarily related to our 2012 through 2014 accident years.

#### **2014 Loss and LAE Development, excluding catastrophes**

In 2014, net favorable loss and LAE development was \$99.1 million, primarily as a result of favorable development of \$104.6 million for Chaucer, partially offset by net unfavorable development of \$9.2 million for Commercial Lines. Chaucer's favorable development was primarily the result of lower than expected losses in the marine and aviation line of \$40.1 million, primarily in the 2011 through 2013 accident years. Additionally, Chaucer experienced lower than expected losses within the property line of \$21.5 million, primarily in the 2010 through 2013 accident years, and in casualty and other lines, specifically the specialty liability line of \$21.4 million, primarily in the 2010 and 2013 accident years. Chaucer's favorable development was also partially attributable to the favorable impact of foreign exchange rate movements on prior years' loss reserves. See "Foreign Exchange" section above for further discussion.

The net unfavorable Commercial Lines development primarily resulted from higher than expected large losses

within the commercial automobile coverages of \$23.1 million, which includes the AIX program business, primarily related to liability coverage in the 2009 through 2012 accident years. Partially offsetting the unfavorable development was lower than expected losses within the workers' compensation line, primarily related to the 2007 through 2012 accident years, and the surety line, primarily related to the 2013 accident year.

### Catastrophe Loss Development

In 2016, favorable catastrophe development was \$34.9 million, primarily due to lower than expected losses in our property line, within our Chaucer segment, of \$28.1 million and to a lesser extent, in our commercial multiple peril line, within Commercial Lines. In 2015, favorable catastrophe development was \$21.8 million, primarily due to lower than expected losses in our property line, within our Chaucer segment, of \$25.3 million, partially offset by higher than expected losses in our homeowners line, within our Personal Lines segment. In 2014, favorable catastrophe development was \$18.3 million, primarily due to lower than expected losses in our property, marine and energy lines, within our Chaucer segment, of \$23.2 million, partially offset by higher than expected losses in our Commercial Lines segment.

### 2016 Fourth Quarter Domestic Business Loss and LAE Reserve Increase

The table below provides a summary of (favorable)/unfavorable loss and LAE reserve development excluding catastrophes for the three months ended December 31, 2016:

<i>(in millions)</i>	
Commercial multiple peril	\$ 43.7
Workers' compensation	(32.0)
Commercial automobile	18.4
Other commercial lines:	
AIX program business	49.6
General liability	45.2
Surety	37.9
Umbrella	(9.4)
Other lines	8.1
Total other commercial lines	131.4
Total Commercial Lines Segment	161.5
Personal automobile	8.2
Homeowners and other personal lines	(3.0)
Total Personal Lines Segment	5.2
Total Other Segment	7.4
Total domestic business loss and LAE reserve development, excluding catastrophes <sup>(1)</sup>	\$174.1

(1) For the three months ended December 31, 2016, prior year favorable reserve development for catastrophes was \$2.0 million for our domestic business.

Through the first nine months of 2016, we recorded \$61.5 million of unfavorable loss and LAE reserve development for our domestic business excluding catastrophes, driven by higher than expected large losses in our commercial liability coverages, primarily in our commercial multiple peril line and both our AIX program business and general liability coverages that are within other commercial lines. Additionally, we incurred higher than expected legal defense costs, a component of LAE expenses, during the first nine months of 2016. Other product lines also reported increased claim activity, including commercial automobile and surety.

There was an increased level of loss and LAE activity recorded in certain lines in 2015 that continued throughout 2016, and in some cases intensified into the fourth quarter, and appears to represent longer-term trends that management concluded required recognition. As a result of these trends, during the fourth quarter of 2016, we performed a more in-depth actuarial reserve review in several areas. We assessed the recent large loss activity in our monoline and multiple peril general liability and surety lines and the emergence of such relative to the timing and amounts of expected large losses. For surety, the majority of the recent large loss activity emerged throughout 2016 and intensified during the fourth quarter. We also conducted additional analyses of our general liability coverages and AIX program business within other commercial lines. The results of these analyses indicated that the assumed tail risk included in the loss development patterns needed to be increased. Our claims and actuarial staff also conducted a review of legal defense costs and other claim-specific adjusting expenses as a result of an emerging trend of increased expenses in these areas over recent quarters. This review concluded that the ultimate costs of these loss adjustment expense were higher than previously estimated, causing management to record an increase in estimated LAE, primarily in our commercial multiple peril and general liability product lines.

As a result of our fourth quarter reserve review, we recognized unfavorable prior year reserve development of \$174.1 million for our domestic business excluding catastrophes, largely driven by adverse emergence in most Commercial Lines liability coverages reflecting worsening trends in the number and nature of high severity losses and higher than anticipated legal defense costs. We reacted to this adverse emergence by updating our assumptions about loss severity, loss development patterns, expected loss ratios and loss adjustment expenses for the most recent accident years, placing greater weight on the adverse severity trends experienced in the most recent calendar years. The adverse development in our AIX program business was primarily due to the general liability and commercial auto-

mobile liability coverages in the 2011 through 2014 accident years. Additionally, we recognized adverse development in our general liability and commercial multiple peril coverages primarily in accident years 2012 through 2015, contract surety business primarily related to the 2012 through 2015 accident years, and commercial automobile line primarily related to liability coverages for accident years 2012 through 2014. These increases in Commercial Lines reserves were partially offset by favorable development in our workers' compensation line, primarily in the 2013 through 2015 accident years and, to a lesser extent, our commercial umbrella coverage in the 2015 accident year. The adverse prior year reserve development for personal lines was primarily due to higher than expected losses in our bodily injury coverage in accident years 2013 through 2015. The adverse prior year development for our Other segment was due to our run-off voluntary assumed reinsurance pools business. The reserve increase was based on an updated third-party actuarial study received in the fourth quarter for the Excess and Casualty Reinsurance Association ("ECRA") pool that primarily consists of asbestos and environmental exposures.

#### **Asbestos and Environmental Reserves**

Although we attempt to limit our exposures to asbestos and environmental damage liability through specific policy exclusions, we have been and may continue to be subject to claims related to these exposures. Ending loss and LAE reserves for all direct business written by our property and casualty companies related to asbestos and environmental damage liability were \$9.9 million, \$9.5 million and \$10.1 million, net of reinsurance of \$19.9 million, \$20.5 million, and \$21.4 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Activity for our asbestos and environmental reserves was not significant to our 2016, 2015 or 2014 financial results. In recent years, average asbestos and environmental payments have declined modestly. As a result of our historical direct underwriting mix of Commercial Lines policies toward smaller and middle market risks, past asbestos and environmental damage liability loss experience has remained minimal in relation to our total loss and LAE incurred experience.

In addition, we have established gross and net loss and LAE reserves for assumed reinsurance pool business with asbestos and environmental damage liability of \$31.2 million, \$27.7 million and \$29.1 million at December 31, 2016, 2015 and 2014, respectively. These reserves relate to pools in which we have terminated our participation; however, we continue to be subject to claims related to years in which we were a participant. Results of operations from these pools are included in our Other segment. A significant

part of our pool reserves relates to our participation in the ECRA voluntary pool from 1950 to 1982. In 1982, the pool was dissolved and since that time, the business has been in run-off. Our percentage of the total pool liabilities varied from 1% to 6% during these years. Our participation in this pool has resulted in average paid losses of approximately \$2 million annually over the past ten years. Our ECRA reserves were increased by \$7.4 million based on an updated third-party actuarial study received in the fourth quarter.

We estimate our ultimate liability for asbestos, environmental and toxic tort liability claims, whether resulting from direct business, assumed reinsurance or pool business, based upon currently known facts, reasonable assumptions where the facts are not known, current law and methodologies currently available. Although these outstanding claims are not significant, their existence gives rise to uncertainty and are discussed because of the possibility that they may become significant. We believe that, notwithstanding the evolution of case law expanding liability in asbestos and environmental claims, recorded reserves related to these claims are adequate. Nevertheless, the asbestos, environmental and toxic tort liability reserves could be revised, and any such revisions could have a material adverse effect on our results of operations for a particular quarterly or annual period or on our financial position.

#### **REINSURANCE**

We maintain a reinsurance program designed to protect against large or unusual losses and LAE activity. We utilize a variety of reinsurance agreements that are intended to control our exposure to large property and casualty losses, stabilize earnings and protect capital resources, including facultative reinsurance, excess of loss reinsurance and catastrophe reinsurance. We determine the appropriate amount of reinsurance based upon our evaluation of the risks insured, exposure analyses prepared by consultants, our capital allocation models and on market conditions, including the availability and pricing of reinsurance. Reinsurance contracts do not relieve us from our primary obligations to policyholders. Failure of reinsurers to honor their obligations could result in losses to us. We believe that the terms of our reinsurance contracts are consistent with industry practice in that they contain standard terms and conditions with respect to lines of business covered, limit and retention, arbitration and occurrence. Based on an ongoing review of our reinsurers' financial statements, their history of timely payments to us, reported financial strength ratings from rating agencies, and the analysis and guidance of our reinsurance advisors, we believe that our reinsurers are financially sound.

Catastrophe reinsurance serves to protect us, as the ceding insurer, from significant losses arising from a single event including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, severe winter weather, fire, explosions, and terrorism. Although we believe our catastrophe reinsurance program, including our retention and co-participation amounts for 2017, are appropriate given our surplus level and the current reinsurance pricing environment, there can be no assurance that our reinsurance program will provide coverage levels that will prove adequate should we experience losses from one significant or several large catastrophes during 2017. Additionally, as a result of the current economic environment, as well as losses incurred by reinsurers in the past several years, the availability and pricing of appropriate reinsurance programs may be adversely affected in future renewal periods. We may not be able to pass these costs on to policyholders in the form of higher premiums or assessments.

See “Reinsurance” in Item 1 – Business of this Form 10-K for further information on our reinsurance programs and “Reinsurance Recoverable Balances” within “Critical Accounting Estimates” in Management’s Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K for discussion of our critical accounting estimates for reinsurance recoverable balances.

## INVESTMENTS

### INVESTMENT RESULTS

Net investment income before income taxes was as follows:

DECEMBER 31	2016	2015	2014
(dollars in millions)			
Fixed maturities	\$ 245.1	\$ 253.8	\$ 255.8
Equity securities	18.6	17.5	16.5
Other investments	26.7	18.1	9.0
Investment expenses	(11.0)	(10.3)	(11.0)
Net investment income	\$ 279.4	\$ 279.1	\$ 270.3
Earned yield, fixed maturities	3.51%	3.61%	3.71%
Earned yield, total portfolio	3.38%	3.44%	3.42%

The increase in net investment income in both 2016 and 2015 was primarily due to the investment of higher operational cash flows and to additional income from our commercial mortgage loan participations, private equity partnerships and equity securities. These increases were partially offset by the impact of lower new money yields, the effect of lower investment assets associated with our repurchases of stock, repayments of debt and the transfer of the U.K. motor business. We expect average investment yields to continue to decline as new money rates remain lower than embedded book yields.

### INVESTMENT PORTFOLIO

We held cash and investment assets diversified across several asset classes, as follows:

DECEMBER 31	2016		2015	
(dollars in millions)				
	Carrying Value	% of Total Carrying Value	Carrying Value	% of Total Carrying Value
Fixed maturities, at fair value	\$7,331.3	84.0%	\$ 6,983.4	84.2%
Equity securities, at fair value	584.4	6.7	576.6	7.0
Other investments	533.8	6.1	393.4	4.7
Cash and cash equivalents	282.6	3.2	338.8	4.1
Total cash and investments	\$8,732.1	100.0%	\$ 8,292.2	100.0%

### CASH AND INVESTMENTS

Total cash and investments increased \$439.9 million, or 5.3%, for the year ended December 31, 2016 primarily due to positive operational cashflows and market value appreciation, partially offset by funding various financing activities, including stock repurchases and debt repayments.

The following table provides information about the investment types of our fixed maturities portfolio:

DECEMBER 31	2016			
(in millions)				
Investment Type	Amortized Cost	Fair Value	Net Unrealized Gain (Loss)	Change in Net Unrealized for the Year
U.S. Treasury and government agencies	\$ 342.5	\$ 341.1	\$ (1.4)	\$ (3.4)
Foreign government	235.8	240.7	4.9	3.8
Municipals:				
Taxable	964.2	993.8	29.6	(13.3)
Tax-exempt	101.6	101.6	—	(2.9)
Corporate	3,989.8	4,053.8	64.0	72.9
Asset-backed:				
Residential mortgage-backed	978.2	974.2	(4.0)	(12.5)
Commercial mortgage-backed	550.6	554.3	3.7	2.2
Asset-backed	72.4	71.8	(0.6)	—
Total fixed maturities	\$7,235.1	\$7,331.3	\$ 96.2	\$ 46.8

The increase in net unrealized gains on fixed maturities was primarily due to narrower corporate credit spreads in 2016.



Amortized cost and fair value by rating category were as follows:

DECEMBER 31		2016			2015		
(dollars in millions)							
NAIC Designation	Rating Agency Equivalent Designation	Amortized Cost	Fair Value	% of Total Fair Value	Amortized Cost	Fair Value	% of Total Fair Value
1	Aaa/Aa/A	\$4,867.7	\$4,927.6	67.2%	\$4,849.3	\$4,939.9	70.7%
2	Baa	1,955.4	1,975.8	26.9	1,648.3	1,646.0	23.6
3	Ba	203.2	210.8	2.9	219.4	206.4	3.0
4	B	195.9	203.7	2.8	185.0	172.3	2.5
5	Caa and lower	11.8	11.9	0.2	26.6	15.6	0.2
6	In or near default	1.1	1.5	—	5.4	3.2	—
Total fixed maturities		\$7,235.1	\$7,331.3	100.0%	\$6,934.0	\$6,983.4	100.0%

Based on ratings by the National Association of Insurance Commissioners (“NAIC”), approximately 94% of the fixed maturity portfolio consisted of investment grade securities at December 31, 2016 and December 31, 2015. The quality of our fixed maturity portfolio remains strong based on ratings, capital structure position, support through guarantees, underlying security, issuer diversification and yield curve position.

Our investment portfolio primarily consists of fixed maturity securities whose fair value is susceptible to market risk, specifically interest rate changes. Duration is a measurement used to quantify our inherent interest rate risk and analyze invested assets relative to our reserve liabilities.

The duration of our fixed maturity portfolio was as follows:

DECEMBER 31		2016			2015		
(dollars in millions)							
Duration		Amortized Cost	Fair Value	% of Total Fair Value	Amortized Cost	Fair Value	% of Total Fair Value
0-2 years		\$1,168.6	\$1,190.2	16.2%	\$1,271.9	\$1,289.7	18.5%
2-4 years		2,107.4	2,171.2	29.6	1,820.4	1,836.7	26.3
4-6 years		1,941.4	1,971.8	26.9	2,225.1	2,236.5	32.0
6-8 years		1,426.7	1,423.0	19.4	1,395.5	1,394.1	20.0
8-10 years		515.1	498.4	6.8	140.5	144.5	2.1
10+ years		75.9	76.7	1.1	80.6	81.9	1.1
Total fixed maturities		\$7,235.1	\$7,331.3	100.0%	\$6,934.0	\$6,983.4	100.0%
Weighted average duration:			4.5			4.3	

Our fixed maturity portfolio remains well laddered with a weighted average duration of 4.5 years, which is within our target range of 1 to 2 times the duration of our insurance liabilities.

We deposit funds with various state and governmental authorities as well as with Lloyd’s. See Note 3 – “Investments” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K for additional information.

Our fixed maturity and equity securities are classified as available-for-sale and are carried at fair value. Financial instruments whose value was determined using significant management judgment or estimation constituted less than 1% of the total assets we measured at fair value. See also Note 5 – “Fair Value” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

Equity securities primarily consist of income-oriented large capitalization common stocks and U.S. market equity index exchange traded funds.



Other investments consisted primarily of participations in commercial mortgage loan obligations, investments in private equity limited partnerships and overseas deposits. Commercial mortgage loan participations represent our interest in commercial mortgage loans originated by a third-party. We share, on a pro-rata basis, in all related cash flows of the underlying mortgage loans, which are investment-grade quality and diversified by geographic area and property type. Our investments in limited partnerships include interests in middle market private credit, mezzanine and buyout funds. Overseas deposits are foreign and U.S. dollar-denominated investments maintained in overseas funds and managed exclusively by Lloyd's. These funds are required in order to protect policyholders in overseas markets and enable Chaucer to operate in those markets. Access to those funds is restricted, and we have no control over the investment strategy.

Although we expect to invest new funds primarily in investment grade fixed maturities, we have invested, and expect to continue to invest a portion of funds in common equity securities, below investment grade fixed maturities and other investment assets.

#### OTHER-THAN-TEMPORARY IMPAIRMENTS

For the years ended December 31, 2016, 2015 and 2014 we recognized in earnings \$27.9 million, \$26.8 million, and \$5.5 million, respectively, of OTTI on fixed maturity and equity securities. In 2016, OTTI consisted primarily of \$16.1 million on fixed maturities we intended to sell, \$8.8 million related to estimated credit losses on fixed maturities and \$2.7 million on equity securities. In 2015, OTTI consisted of \$16.0 million related to estimated credit losses on fixed maturities, \$4.0 million on fixed maturities we intended to sell and \$6.8 million on equities. OTTI in 2016 and 2015 related to the energy sector was \$16.6 million and \$19.6 million, respectively.

#### UNREALIZED LOSSES

The following table provides information about our fixed maturities and equity securities that were in an unrealized loss position including the length of time the securities have been in an unrealized loss position. See also Note 3 – “Investments” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

DECEMBER 31 (in millions)	2016		2015	
	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value
Fixed maturities:				
Investment grade:				
12 months or less	\$ 60.2	\$2,356.9	\$ 43.3	\$2,168.8
Greater than 12 months	8.7	134.1	25.5	323.4
Total investment grade fixed maturities	68.9	2,491.0	68.8	2,492.2
Below investment grade:				
12 months or less	1.2	46.0	19.6	165.5
Greater than 12 months	12.2	81.8	26.5	63.2
Total below investment grade fixed maturities	13.4	127.8	46.1	228.7
Equity securities:				
12 months or less	0.7	16.3	7.6	166.8
Total	\$ 83.0	\$2,635.1	\$122.5	\$2,887.7

Gross unrealized losses on fixed maturities and equity securities decreased \$39.5 million compared to December 31, 2015, primarily attributable to narrower credit spreads. At December 31, 2016, gross unrealized losses consisted primarily of \$49.0 million of corporate fixed maturities, \$13.6 million of residential mortgage-backed securities and \$9.2 million on municipal securities.

We view gross unrealized losses on fixed maturities and equity securities as temporary since it is our assessment that these securities will recover in the near term, allowing us to realize their anticipated long-term economic value. With respect to gross unrealized losses on fixed maturities, we do not intend to sell, nor is it more likely than not we will be required to sell, such debt securities before this expected recovery of amortized cost (see also “Liquidity and Capital Resources” in Management’s Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K). With respect to equity securities, we have the intent and ability to retain such investments for the period of time anticipated to allow for this expected recovery in fair value. Inherent in our assessment are the risks that, subsequent to the balance sheet date, market factors may differ from our expectations; the global economic recovery is less robust than we expect or reverts to recessionary trends; unexpected fiscal, tax or trade policies may be implemented with unfavorable impacts on investment values; stress in the commodities sectors, including oil and gas and metals and mining, may persist for an extended period of time; we may decide to subsequently

sell a security for unforeseen business needs; or changes in the credit assessment or equity characteristics from our original assessment may lead us to determine that a sale at the current value would maximize recovery on such investments. To the extent that there are such adverse changes, an OTTI would be recognized as a realized loss. Although unrealized losses are not reflected in the results of financial operations until they are realized or deemed “other-than-temporary”, the fair value of the underlying investment, which does reflect the unrealized loss, is reflected in our Consolidated Balance Sheets.

The following table sets forth gross unrealized losses for fixed maturities by maturity period and for equity securities at December 31, 2016 and 2015. Actual maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations, with or without call or prepayment penalties, or we may have the right to put or sell the obligations back to the issuers.

DECEMBER 31	2016	2015
(in millions)		
Due in one year or less	\$ 0.3	\$ 1.5
Due after one year through five years	15.9	26.5
Due after five years through ten years	37.6	66.1
Due after ten years	10.0	10.8
	63.8	104.9
Mortgage-backed and asset-backed securities	18.5	10.0
Total fixed maturities	82.3	114.9
Equity securities	0.7	7.6
Total fixed maturities and equity securities	\$ 83.0	\$ 122.5

The carrying values of fixed maturity securities on non-accrual status at December 31, 2016 and 2015 were not material. The effects of non-accruals compared with amounts that would have been recognized in accordance with the original terms of the fixed maturities, were reductions in net investment income of \$1.1 million, \$0.8 million and \$2.1 million for the years ended December 31, 2016, 2015 and 2014, respectively. Any defaults in the fixed maturities portfolio in future periods may negatively affect investment income.

Our investment portfolio and shareholders' equity can be significantly impacted by changes in market values of our securities. Market volatility could increase and defaults on fixed income securities could occur. As a result, we could incur additional realized and unrealized losses in future periods, which could have a material adverse impact on our results of operations and/or financial position.

Monetary policies in the developed economies, particularly in the United States, Europe and Japan, are supportive of moderate economic growth, while fiscal policies are more divergent and subject to change. Major central banks continue to closely monitor developments in global financial markets and the outlook for growth and are committed to adjust monetary policy as required to provide liquidity funding, support growth and achieve inflation targets. In the United States, the Federal Reserve (the “Fed”) increased its target for the federal funds rate by 0.25% in December and raised its range to 0.50% to 0.75%. The Fed expects that labor market conditions will strengthen further and inflation will rise to 2 percent over the medium term. The Fed has communicated that the timing and size of future adjustments to the federal funds rate will depend on the realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. Based on the Fed's December 2016 economic projections, the federal funds target rate may be increased by 0.25% two or three times during 2017. While the Fed believes near-term risks to the economic outlook appear roughly balanced, they continue to closely monitor inflation indicators and global economic and financial developments.

While the United States has reduced its extraordinary measures and begun to tighten monetary policy, other major central banks continue with their stimulus policies as they seek higher growth and confront inflation and inflation expectations running below target. The removal, modification or suggestion of changes in these policies could have an adverse effect on prevailing market interest rates and on issuers' level of business activity or liquidity, increasing the probability of future defaults. Fundamental conditions in the corporate sector generally remain sound. Operating conditions for metals and mining and oil and gas producers remain challenged, but improvement in supply/demand fundamentals has recently provided greater stability. While we may experience defaults on fixed income securities, particularly with respect to non-investment grade debt securities, it is difficult to foresee which issuers, industries or markets, other than those previously cited, will be affected. As a result, the value of our fixed maturity portfolio could change rapidly in ways we cannot currently anticipate, and we could incur additional realized and unrealized losses in future periods.

## OTHER ITEMS

Net income also included the following items:

YEARS ENDED DECEMBER 31

(in millions)

2016	Commercial Lines	Personal Lines	Chaucer	Other	Discontinued Operations	Total
Net realized investment gains (losses)	\$ 7.5	\$ 3.5	\$ (0.9)	\$ (1.5)	\$ —	\$ 8.6
Net loss from repayment of debt	—	—	—	(88.3)	—	(88.3)
Gain on disposal of U.K. motor business	—	—	1.1	—	—	1.1
Other non-operating items	2.5	—	0.3	0.2	—	3.0
Discontinued operations, net of tax	—	—	—	—	(1.0)	(1.0)
2015						
Net realized investment gains	\$ 12.3	\$ 6.4	\$ 0.4	\$ 0.4	\$ —	\$ 19.5
Net loss from repayment of debt	—	—	—	(24.1)	—	(24.1)
Gain on disposal of U.K. motor business	—	—	38.4	—	—	38.4
Other non-operating items	—	(0.2)	0.2	0.1	—	0.1
Discontinued operations, net of tax	—	—	—	—	0.7	0.7
2014						
Net realized investment gains (losses)	\$ 20.7	\$ 10.0	\$ 20.8	\$ (1.4)	\$ —	\$ 50.1
Loss from settlement of pension obligation	(4.8)	(2.2)	—	(5.1)	—	(12.1)
Net loss from repayment of debt	—	—	—	(0.1)	—	(0.1)
Other non-operating items	(0.9)	(0.3)	0.3	—	—	(0.9)
Discontinued operations, net of tax	—	—	—	—	(0.3)	(0.3)

We manage investment assets for our Commercial Lines, Personal Lines, and Other segments based on the requirements of our U.S. combined property and casualty companies. We allocate the investment income, expenses and realized gains and losses to our Commercial Lines, Personal Lines and Other segments based on actuarial information related to the underlying businesses. We manage investment assets separately for our Chaucer segment.

Net realized gains on investments were \$8.6 million, \$19.5 million, and \$50.1 million for 2016, 2015, and 2014, respectively. Net realized gains in 2016 were primarily due to \$36.4 million of gains recognized from the sale of securities, primarily equities, and to a lesser extent, fixed maturities. These gains were partially offset by \$27.9 million of OTTI losses. Net realized gains in 2015 were primarily due to \$39.9 million of gains recognized from the sale of equity securities and, to a lesser extent, fixed maturities, and \$6.4 million of gains from other investments, primarily partnerships. These gains were partially offset by \$26.8 million of OTTI losses. Net realized gains in 2014 were primarily due to \$55.4 million of gains recognized from the sale of equity securities and to a lesser extent, fixed maturities, partially offset by \$5.5 million of OTTI losses.

In 2016, we redeemed senior debentures with a net carrying value of \$375.2 million at a cost of \$461.3 million, resulting in a loss of \$86.1 million. Additionally, in 2016

we repurchased senior debentures with a net carrying value of \$11.9 million at a cost of \$14.1 million, resulting in a loss of \$2.2 million. In 2015, through several transactions, we repurchased senior debentures with a net carrying value of \$90.2 million at a cost of \$114.3 million, resulting in a loss of \$24.1 million.

Effective June 30, 2015, we transferred our U.K. motor business to an unaffiliated U.K.-based insurance provider, which resulted in the recognition of a \$40.6 million gain, net of tax. See also “Disposal of U.K. Motor Business” in Note 2 – “Dispositions of Businesses” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

During 2014, we provided eligible former employees with a one-time choice of electing to receive a lump-sum settlement of their remaining qualified defined pension benefit. Including this voluntary lump-sum program, we settled \$55.1 million of our pension obligations with an equal amount paid from plan assets. As a result, we recorded settlement losses of \$10.8 million, reflecting the accelerated recognition of unamortized losses in the plan proportionate to the obligation that was settled. Additionally, we terminated a small qualified plan, which also resulted in the accelerated recognition of unamortized losses of \$1.3 million.

## QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

### INTEREST RATE SENSITIVITY

Operations are subject to risk resulting from interest rate fluctuations, which may adversely impact the valuation of the investment portfolio. In a rising interest rate environment, the value of the fixed maturity sector, which comprises 84% of our investment portfolio, may decline as a result of decreases in the fair value of the securities. Our intent is to hold securities to maturity and recover the decline in valuation as prices accrete to par. However, our intent may change prior to maturity due to changes in the financial markets, our analysis of an issuer's credit metrics and prospects, or as a result of changes in cash flow needs. Interest rate fluctuations may also reduce net investment income and as a result, profitability. The portfolio may realize lower yields and therefore lower net investment

income on securities because the securities with prepayment and call features may prepay at a different rate than originally projected. Also, funds may not be available to invest at higher interest rates.

In a declining interest rate environment, prepayments and calls may increase as issuers exercise their option to refinance at lower rates. The resulting funds would be reinvested at lower yields.

The following table illustrates the estimated impact on the fair value of our fixed maturity portfolio at December 31, 2016 and 2015 of hypothetical changes in prevailing interest rates, defined as changes in interest rates on U.S. Treasury debt. It does not reflect changes in credit spreads, liquidity spreads and other factors that affect the value of securities. Since changes in prevailing interest rates are often accompanied by changes in these other factors, the reader should not assume that an actual change in interest rates would result in the values illustrated.

(dollars in millions)

Investment Type	+300bp	+200bp	+100bp	0	-100bp	-200bp	-300bp
Residential mortgage-backed securities	\$ 820	\$ 870	\$ 920	\$ 975	\$1,015	\$1,025	\$1,020
Municipal securities	960	1,005	1,050	1,095	1,145	1,180	1,195
All other fixed maturity securities	4,635	4,830	5,040	5,260	5,485	5,680	5,735
Total December 31, 2016	\$6,415	\$6,705	\$7,010	\$7,330	\$7,645	\$7,885	\$7,950
Total December 31, 2015	\$ 6,145	\$ 6,410	\$ 6,690	\$ 6,985	\$ 7,260	\$ 7,455	\$ 7,485

Our overall investment strategy is intended to balance investment income with credit and interest rate risk, while maintaining sufficient liquidity and the opportunity for capital growth. The asset allocation process takes into consideration the types of business written and the level of surplus required to support our different businesses and the risk return profiles of the underlying asset classes. We look to balance the goals of capital preservation, net investment income stability, liquidity and total return.

The majority of our assets are invested in the fixed income markets. Through fundamental research and credit analysis, with a focus on value investing, our investment professionals seek to identify a portfolio of stable income-producing higher quality U.S. government, foreign government, municipal, corporate, residential and commercial mortgage-backed securities and asset-backed securities. We have a general policy of diversifying investments both within and across major investment and industrial sectors to mitigate credit and interest rate risk. We monitor the credit quality of our investments and our exposure to individual markets, borrowers, industries, sectors and, in the

case of commercial mortgage-backed securities and commercial mortgage loan participations, property types and geographic locations. In addition, we currently carry debt that is subject to interest rate risk, which was issued at fixed interest rates between 4.50% and 8.207%. Current market conditions, in light of our risk tolerance, restrict our ability to invest fixed income assets at similar rates of return; therefore, earnings on a similar level of assets are not sufficient to cover current debt interest costs.

### EQUITY PRICE RISK

Our equity securities portfolio is exposed to equity price risk arising from potential volatility in equity market prices. Portfolio characteristics are analyzed regularly and price risk is actively managed through a variety of techniques. A hypothetical increase or decrease of 10% in the market price of our equity securities would have resulted in an increase or decrease in the fair value of the equity securities portfolio of approximately \$58 million at December 31, 2016 and 2015, respectively.

## FOREIGN CURRENCY EXCHANGE RISK

Chaucer has exposure to foreign currency risk, most notably in insurance contracts and invested assets. Some of the insurance contracts provide that ultimate losses may be payable in foreign currencies depending on the country of original loss. Foreign currency exchange rate risk exists to the extent that there is an increase in the exchange rate of the foreign currency in which losses are ultimately owed. Thus, Chaucer attempts to manage foreign currency risk by seeking to match liabilities under insurance and reinsurance policies that are payable in foreign currencies with cash and investments that are denominated in such currencies. We may also utilize foreign currency forward contracts as part of our investment strategy. The principal currency creating foreign exchange investment risk for us is the U.K. pound sterling, and to a lesser extent, the Canadian dollar, Euro, Australian dollar and Swiss franc. A hypothetical 10% reduction in the value of foreign denominated investments would be expected to produce a loss in fair value of approximately \$58 million and \$59 million at December 31, 2016 and 2015, respectively.

## INCOME TAXES

We are subject to the tax laws and regulations of the U.S. and foreign countries in which we operate. We file a consolidated U.S. federal income tax return that includes the holding company and its U.S. subsidiaries. Generally, taxes are accrued at the U.S. statutory tax rate of 35% for income from the U.S. operations. Our primary non-U.S. jurisdiction is in the U.K. In July 2013, the U.K. statutory tax rate decreased from 23% to 21% effective April 1, 2014 and from 21% to 20% effective April 1, 2015. In November 2015, the U.K. statutory tax rate decreased from 20% to 19% effective April 1, 2017 and from 19% to 18% effective April 1, 2020 respectively. A further decrease in the U.K. tax rate was enacted in September 2016 to reduce the U.K. statutory rate from 19% to 17% rather than to the previously enacted rate of 18%, effective April 1, 2020. We accrue taxes on certain non-U.S. income that is subject to U.S. tax at the U.S. tax rate. Foreign tax credits, where available, are utilized to offset U.S. tax as permitted. Certain of our non-U.S. income is not subject to U.S. tax until repatriated. Foreign taxes on this non-U.S. income are accrued at the local foreign rate and do not have an accrual for U.S. deferred taxes since these earnings are intended to be indefinitely reinvested overseas.

The provision for income taxes from continuing operations was an expense of \$36.2 million, \$108.6 million and \$95.7 million in 2016, 2015 and 2014, respectively. These amounts resulted in consolidated effective tax rates of 18.8%, 24.7% and 25.3% on pre-tax income for 2016,

2015 and 2014, respectively. These provisions reflect benefits related to tax planning strategies implemented in prior years of \$20.7 million, \$13.3 million and \$16.2 million in 2016, 2015 and 2014, respectively. The provision for 2015 reflects a \$15.6 million tax savings, net of a \$1.7 million provision for uncertain tax positions, on the transfer of the U.K. motor business. The transfer of the U.K. motor business was structured as a tax-free reorganization exempt from current U.S. and U.K. taxation under the business exemption and substantial shareholdings exemption rules, respectively. Since the proceeds from this transaction are expected to be indefinitely reinvested overseas, U.S. taxes have not been recognized. The provision for 2014 also included a benefit related to the reduction of a valuation allowance of \$2.9 million, and a \$6.9 million benefit related to foreign exchange loss deductions on our 2013 and 2014 U.S. tax returns. Absent these benefits, the provision for income taxes for 2016, 2015, and 2014 would have been expenses of \$56.9 million, or 29.6%, \$137.5 million, or 31.3%, and \$121.7 million, or 32.2%, respectively. The decrease in the 2016 effective tax rate is primarily due to lower underwriting income. The decrease in the 2015 effective tax rate is primarily due to an increase in our recognition of foreign tax credits for taxes paid in certain foreign jurisdictions.

The income tax provision on operating income was an expense of \$83.5 million, \$125.5 million and \$108.3 million for 2016, 2015 and 2014, respectively. These provisions resulted in effective tax rates for operating income of 31.2%, 30.9% and 31.8% in 2016, 2015 and 2014, respectively. The increase in the 2016 effective tax rate is primarily due to a decrease in our operating income for 2016, whereas the decrease in the 2015 effective tax rate is primarily due to the increase in our recognition of foreign tax credits.

Included in our deferred tax net asset as of December 31, 2016 are assets of \$72.3 million related to alternative minimum tax ("AMT") credit carryforwards and \$22.3 million related to foreign tax credit carryforwards. We may utilize these credits to offset future taxable income. The result of their utilization will be a lower current tax rate offset by a higher deferred tax provision, and also lower cash expenditures for federal income taxes during the utilization period. There is no expiration on AMT credit carryforwards, and our foreign tax credit carryforwards will expire in 2026. It is our opinion that there will be sufficient future U.S. and U.K. taxable income to utilize these tax credit carryforwards. Our estimate of the amount and likely realization of tax credit carryforwards may change over time.



During 2014, we released the valuation allowance related to our deferred tax assets of \$2.9 million recorded in 2013. The release of this valuation allowance resulted from appreciation in our investment portfolio and is recorded as a \$2.9 million decrease in our income tax expense.

In prior years, we completed several transactions which resulted in the realization, for tax purposes only, of unrealized gains in our investment portfolio. As a result of these transactions, we were able to realize capital losses carried forward and to release the valuation allowance recorded against the deferred tax asset related to these losses. The releases of valuation allowances were recorded as a benefit in accumulated other comprehensive income. Previously unrealized benefits of \$20.7 million, \$13.3 million and \$16.2 million attributable to non-operating income, are recognized as part of our income from continuing operations during 2016, 2015 and 2014, respectively. The remaining amount of \$57.5 million in accumulated other comprehensive income will be released into income from continuing operations in future years, as the investment securities subject to these transactions are sold or mature.

The IRS audits of the years 2007 through 2010 were settled in 2014 with no material impact to our financial position or results of operations. There is no ongoing audit on our open tax years.

## **CRITICAL ACCOUNTING ESTIMATES**

The discussion and analysis of our financial condition and results of operations are based upon the consolidated financial statements. These statements have been prepared in accordance with U.S. GAAP, which requires us 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 financial statements and the reported amount of revenues and expenses during the reporting period. Actual results could differ from those estimates. The following critical accounting estimates are those which we believe affect the more significant judgments and estimates used in the preparation of our financial statements. Additional information about other significant accounting policies and estimates may be found in Note 1—"Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

## **RESERVE FOR LOSSES AND LOSS EXPENSES**

See "Reserve for Losses and Loss Adjustment Expenses" within "Results of Operations – Segments" in Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K for a discussion of our critical accounting estimates for loss reserves.

## **REINSURANCE RECOVERABLE BALANCES**

We share insurance risk of the primary underlying contracts with various insurance entities through the use of reinsurance contracts. As a result, when we experience loss events that are subject to a reinsurance contract, reinsurance recoveries are recorded. The amount of the reinsurance recoverable can vary based on the size of the individual loss or the aggregate amount of all losses in a particular line, book of business or an aggregate amount associated with a particular accident year. The valuation of losses recoverable depends on whether the underlying loss is a reported loss, or an incurred but not reported loss. For reported losses, we value reinsurance recoverables at the time the underlying loss is recognized, in accordance with contract terms. For incurred but not reported losses, we estimate the amount of reinsurance recoverable based on the terms of the reinsurance contracts and historical reinsurance recovery information and apply that information to the gross loss reserve estimates. The most significant assumption we use is the average size of the individual losses for those claims that have occurred but have not yet been reported to us. The reinsurance recoverable is based on what we believe are reasonable estimates and is disclosed separately on the financial statements. However, the ultimate amount of the reinsurance recoverable is not known until all losses are settled.

Reinsurance recoverables recorded on insurance losses ceded under reinsurance contracts are subject to judgments and uncertainties similar to those involved in estimating gross loss reserves, as disclosed above. In addition to these uncertainties, our reinsurance recoverables may prove uncollectible if the reinsurers are unable or unwilling to perform under the reinsurance contracts. In establishing our reinsurance allowance for amounts deemed uncollectible, we evaluate the financial condition of our reinsurers and monitor concentration of credit risk arising from our exposure to individual reinsurers. To determine if an allowance is necessary, we consider, among other factors, published financial information, reports from rating agencies, payment history, collateral held and our legal right to offset balances recoverable against balances we may owe. Our reinsurance allowance for doubtful accounts is subject to uncertainty and volatility due to the time lag involved in collecting amounts recoverable from

reinsurers. Over the period of time that losses occur, reinsurers are billed and amounts are ultimately collected, economic conditions, as well as the operational and financial performance of particular reinsurers, may change, and these changes may affect the reinsurers' willingness and ability to meet their contractual obligation to us. It is also difficult to fully evaluate the impact of major catastrophic events on the financial stability of reinsurers, as well as the access to capital that reinsurers may have when such events occur. The ceding of insurance does not legally discharge us from our primary liability for the full amount of the policies, and we will be required to pay the loss and bear collection risk even if the reinsurers fail to meet their obligations under the reinsurance contracts.

#### PENSION BENEFIT OBLIGATIONS

We currently have a U.S. qualified defined benefit plan, a defined benefit pension plan for our international subsidiary, Chaucer, and several smaller non-qualified benefit plans. In order to measure the liabilities and expense associated with these plans, we must make various estimates and key assumptions, including discount rates used to value liabilities, assumed rates of return on plan assets, employee turnover rates and anticipated mortality rates. Additionally, our Chaucer pension plan must also take into consideration inflation rates. These estimates and assumptions are reviewed at least annually and are based on our historical experience, as well as current facts and circumstances. In addition, we use outside actuaries to assist in measuring the expenses and liabilities associated with our defined benefit pension plans.

Two significant assumptions used in the determination of benefit plan obligations and expenses that are dependent on market factors, which have been subject to a greater level of volatility over the past few years, are the discount rate and the return on plan asset assumptions. The discount rate enables us to state expected future cash flows as a present value on the measurement date. We also use this discount rate in the determination of our pre-tax pension expense or benefit. A lower discount rate increases the present value of benefit obligations and increases pension expense. We determined our discount rate for the domestic and Chaucer plans utilizing independent yield curves which provide for a portfolio of high quality bonds that are expected to match the cash flows of our pension plans. Bond information used in the yield curve included only those rated Aa or better as of December 31, 2016 and 2015, respectively, and had been rated by at least two well-

known rating agencies. The following provides the discount rates for our qualified pension plan and Chaucer plan for the periods indicated.

<i>Discount Rate Assumptions:</i>	<i>U.S. Qualified Plan</i>	<i>Chaucer Plan</i>
2016	<b>4.25%</b>	<b>2.85%</b>
2015	4.875%	3.85%

To determine the expected long-term return on plan assets, we generally consider historical mean returns by asset class for passive indexed strategies, as well as current and expected asset allocations, and adjust for certain factors that we believe will have an impact on future returns. Actual returns on plan assets in any given year seldom result in the achievement of the expected rate of return on assets. Actual returns on plan assets in excess of these expected returns will generally reduce our net actuarial losses (or increase actuarial gains) that are reflected in the accumulated other comprehensive income balance in shareholders' equity, whereas actual returns on plan assets that are less than expected returns will generally increase our net actuarial losses (or decrease actuarial gains) that are reflected in accumulated other comprehensive income. These gains or losses are amortized into expense in future years. The U.S. qualified plan held assets consisting of approximately 85% fixed maturities and 15% equities at December 31, 2016. The composition of Chaucer's plan assets are approximately 55% equities, 35% fixed maturities, and 10% real estate funds at December 31, 2016.

<i>Expected Return on Asset Assumptions:</i>	<i>U.S. Qualified Plan</i>	<i>Chaucer Plan</i>
2016	<b>5.25%</b>	<b>5.45%</b>
2015	5.00%	5.45%

The increase in returns for the U.S. plan reflects long-term expectations for improvements, including increased interest rates, in the fixed maturities market in general.

Net actuarial losses of \$40.5 million and \$5.9 million were reflected as decreases to accumulated other comprehensive income in 2016 and 2015, respectively. Net actuarial losses in 2016 resulted primarily from decreases in the discount rate as compared to the prior year that were partially offset by benefits from investments gains experienced during the year. Net actuarial losses in 2015 resulted primarily from lower than expected investment gains that were experienced during the year that were partially offset by a slight increase from the change in the discount

rate as compared to the prior year. The change in these actuarial gains and losses is amortized into earnings in future periods. In 2016 and 2015, amortization of actuarial losses from prior years was \$10.1 million and \$10.5 million, respectively.

Expenses related to our defined benefit plans are generally calculated based upon information available at the beginning of the plan year. Our pre-tax expense related to our defined benefit plans was \$11.7 million and \$10.9 million for 2016 and 2015, respectively. Given the positive effect of our actual investment experience in 2016, and taking into consideration the decrease in discount rates for 2017, pension related expenses are expected to increase from \$11.7 million in 2016 to approximately \$13.7 million in 2017.

Holding all other assumptions constant (using the December 31, 2016 GBP to U.S. dollar conversion rate of 1.23), sensitivity to changes in our key assumptions related to our pension plans is as follows:

(in millions)	U.S. Qualified Plan	Chaucer Plan
<b>Discount Rate -</b>		
25 basis point increase		
Change in Benefit Obligation	\$ (10.8)	\$ (7.8)
Change in 2017 Expense	(1.2)	(1.3)
25 basis point decrease		
Change in Benefit Obligation	11.3	8.3
Change in 2017 Expense	1.3	1.4
<b>Expected Return on Plan Assets -</b>		
25 basis point increase		
Change in 2017 Expense	(1.1)	(0.3)
25 basis point decrease		
Change in 2017 Expense	1.1	0.3

#### OTHER-THAN-TEMPORARY IMPAIRMENTS

We employ a systematic methodology to evaluate declines in fair values below amortized cost for all fixed maturity and equity security investments. The methodology utilizes a quantitative and qualitative process that seeks to ensure that available evidence concerning the declines in fair value below amortized cost is evaluated in a disciplined manner. In determining whether a decline in fair value below amortized cost is other-than-temporary, we evaluate several factors and circumstances, including the issuer's overall financial condition; the issuer's credit and financial strength ratings; the issuer's financial performance, including earnings trends, dividend payments and asset quality; any specific events which may influence the operations of the issuer; the general outlook for market conditions in the industry or geographic region in which the issuer operates;

and the length of time and the degree to which the fair value of an issuer's securities remains below our cost. With respect to fixed maturity investments, we consider factors that might raise doubt about the issuer's ability to make contractual payments as they become due and whether we expect to recover the entire amortized cost basis of the security. With respect to equity securities, we consider our ability and intent to hold the investment for a period of time to allow for a recovery in value.

We monitor corporate fixed maturity securities with unrealized losses on a quarterly basis and more frequently when necessary to identify potential credit deterioration, as evidenced by ratings downgrades, unexpected price variances, and/or company or industry specific concerns. We apply consistent standards of credit analysis which includes determining whether the issuer is current on its contractual payments, and we consider past events, current conditions and reasonable forecasts to evaluate whether we expect to recover the entire amortized cost basis of the security. We utilize valuation declines as a potential indicator of credit deterioration and apply additional levels of scrutiny in our analysis as the severity of the decline increases or duration persists.

For our impairment review of asset-backed fixed maturity securities, we forecast our best estimate of the prospective future cash flows of the security to determine if we expect to recover the entire amortized cost basis of the security. Our analysis includes estimates of underlying collateral default rates based on historical and projected delinquency rates and estimates of the amount and timing of potential recovery. We consider available information relevant to the collectability of cash flows, including information about the payment terms of the security, prepayment speeds, the financial condition of the underlying borrowers, collateral trustee reports, credit ratings analysis and other market data when developing our estimate of the expected cash flows.

When an OTTI of a fixed maturity security occurs, and we intend to sell or more likely than not will be required to sell the investment before recovery of its amortized cost basis, the amortized cost of the security is reduced to its fair value, with a corresponding charge to earnings, which reduces net income and earnings per share. If we do not intend to sell the fixed maturity investment or more likely than not will not be required to sell it, we separate the OTTI into the amount we estimate represents the credit loss and the amount related to all other factors. The amount of the estimated loss attributable to credit is recognized in earnings, which reduces net income and earnings per share. The amount of the estimated OTTI that is

non-credit related is recognized in other comprehensive income, net of applicable taxes.

We estimate the amount of the OTTI that relates to credit by comparing the amortized cost of the fixed maturity security with the net present value of the fixed maturity security's projected future cash flows, discounted at the effective interest rate implicit in the investment prior to impairment. The non-credit portion of the impairment is equal to the difference between the fair value and the net present value of the fixed maturity security at the impairment measurement date.

OTTIs of equity securities are recorded as realized losses, which reduce net income and earnings per share. The new cost basis of an impaired security is not adjusted for subsequent increases in estimated fair value.

Temporary declines in market value are recorded as unrealized losses, which do not affect net income and earnings per share, but reduce accumulated other comprehensive income, which is reflected in our Consolidated Balance Sheets. We cannot provide assurance that the OTTIs will be adequate to cover future losses or that we will not have substantial additional impairments in the future. See "Investments" in Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K for further discussion regarding OTTIs and securities in an unrealized loss position.

#### DEFERRED TAX ASSETS

Deferred tax assets and liabilities primarily result from temporary differences between the amounts recorded in our consolidated financial statements and the tax basis of our assets and liabilities and loss and tax credit carryforwards. These temporary differences are measured at the balance sheet date using enacted tax rates expected to apply to taxable income in the years the temporary differences are expected to reverse.

The realization of deferred tax assets depends upon the existence of sufficient taxable income within the carryback or carryforward periods under the tax law in the applicable tax jurisdiction. Consideration is given to available positive and negative evidence, including reversals of deferred tax liabilities, projected future taxable income in each tax jurisdiction, tax planning strategies and recent financial operations. Valuation allowances are established if, based on the weight of available information, it is more likely

than not that all or some portion of the deferred tax assets will not be realized. The determination of the valuation allowance for our deferred tax assets requires management to make certain judgments and assumptions. Our judgments and assumptions are subject to change given the inherent uncertainty in predicting future performance and specific industry and investment market conditions. Changes in valuation allowances are generally reflected in income tax expense or as an adjustment to other comprehensive income depending on the nature of the item for which the valuation allowance is being recorded.

The following are the components of our deferred tax assets and liabilities as of December 31, 2016. There were no valuation allowances required as of December 31, 2016.

DEFERRED TAX ASSETS (LIABILITIES) (in millions)	AMOUNT
Tax attributes	
Tax credit carryforwards	\$ 94.6
Other	
Loss, LAE and unearned premium reserves, net	183.9
Deferred acquisition costs	(141.0)
Employee benefit plans	44.4
Investments, net	(27.9)
Software capitalization	(28.9)
Deferred Lloyd's underwriting income	(32.7)
Other, net	22.7
	20.5
Total	\$115.1

We have \$72.3 million of alternative minimum tax credit carryforwards and \$22.3 million of foreign tax credit carryforwards. The alternative minimum tax credit carryforwards have no expiration date and may be used to offset regular federal income taxes due from future income. The foreign tax credit carryforwards will expire beginning in 2026 and may be used to offset federal income taxes due from future foreign-sourced income. In addition, we have operating loss carryforwards from our Chaucer segment, which have no expiration date. Based on our projection of future economic conditions, taxable income, reversals of existing taxable temporary liabilities, and our strategic tax planning strategies, we believe that these tax credit carryforwards and operating loss carryforwards will be fully realized.



## STATUTORY SURPLUS OF U.S. INSURANCE SUBSIDIARIES

The following table reflects statutory surplus for our U.S. insurance subsidiaries:

DECEMBER 31	2016	2015
(in millions)		
Total Statutory Capital and Surplus - U.S. Insurance Subsidiaries	<b>\$2,173.4</b>	\$2,192.8

The statutory capital and surplus for our U.S. insurance subsidiaries decreased \$19.4 million during 2016, primarily due to a \$218.8 million dividend paid by Hanover Insurance to THG and an increase in the minimum pension liability, partially offset by operating results and unrealized and realized gains on investments.

The NAIC prescribes an annual calculation regarding risk based capital ("RBC"). RBC ratios for regulatory purposes, as described in the glossary, are expressed as a percentage of the capital required to be above the Authorized Control Level (the "Regulatory Scale"); however, in the insurance industry, RBC ratios are widely expressed as a percentage of the Company Action Level. The following table reflects the Company Action Level, the Authorized Control Level and RBC ratios for Hanover Insurance (which includes Citizens and other U.S. insurance subsidiaries), as of December 31, 2016 and 2015, expressed both on the Industry Scale (Total Adjusted Capital divided by the Company Action Level) and Regulatory Scale (Total Adjusted Capital divided by Authorized Control Level):

DECEMBER 31, 2016				
(dollars in millions)				
	Company Action Level	Authorized Control Level	RBC Ratio Industry Scale	RBC Ratio Regulatory Scale
The Hanover Insurance Company	<b>\$884.0</b>	<b>\$442.0</b>	<b>245%</b>	<b>490%</b>

DECEMBER 31, 2015				
The Hanover Insurance Company	\$ 757.1	\$ 378.5	288%	576%

## LLOYD'S CAPITAL REQUIREMENT

Chaucer, through its corporate member, operates in the Lloyd's market, which requires that each member deposit funds, referred to as "Funds at Lloyd's", to support its underwriting interests. Lloyd's sets required capital annually for all participating syndicates based on each syndicate's business plans, the rating and reserving

environment, and discussions with regulatory and rating agencies. Although the minimum capital levels are set by Lloyd's, it is the responsibility of Chaucer to continually monitor the risk profiles of its managed syndicates to ensure that the level of funding remains appropriate. Such capital is comprised of investments, undrawn letters of credit provided by various banks, and cash and cash equivalents.

We have the following securities, letters of credit and cash and cash equivalents pledged to Lloyd's to satisfy these capital requirements at December 31, 2016. At December 31, 2016, we are in compliance with the capital requirements and expect to be able to meet these capital requirements in the future.

DECEMBER 31, 2016	
(in millions)	
Fixed maturities, at fair value	<b>\$ 491.2</b>
Letters of credit	<b>209.6</b>
Cash and cash equivalents	<b>6.3</b>
Total pledged to Lloyd's	<b>\$ 707.1</b>

## LIQUIDITY AND CAPITAL RESOURCES

Liquidity is a measure of our ability to generate sufficient cash flows to meet the cash requirements of business operations. As a holding company, our primary ongoing source of cash is dividends from our insurance subsidiaries. However, dividend payments to us by our U.S. insurance subsidiaries are subject to limitations imposed by regulators, such as prior notice periods and the requirement that dividends in excess of a specified percentage of statutory surplus or prior year's statutory earnings receive prior approval (so called "extraordinary dividends"). Hanover Insurance paid \$218.8 million in dividends to the holding company during 2016. No dividends were paid to the holding company by Hanover Insurance in 2015 or 2014.

Dividend payments to the holding company by Chaucer are regulated by U.K. law. Dividends from Chaucer are dependent on dividends from its subsidiaries. Annual dividend payments from Chaucer are limited to retained earnings that are not restricted by capital and other requirements for business at Lloyd's. Also, Chaucer must provide advance notice to the U.K.'s Prudential Regulation Authority ("PRA") of certain proposed dividends or other payments from PRA regulated entities. Chaucer paid \$79.5 million, \$61.3 million and \$68.7 million in dividends during 2016, 2015 and 2014, respectively, to the holding company.



In connection with an intercompany borrowing arrangement between Chaucer and the holding company, interest on a \$300 million note is paid by Chaucer on a quarterly basis to the holding company. This interest may be deferred at the election of the holding company. If deferred, the interest is added to the principal. Chaucer paid interest to the holding company totaling \$22.4 million in 2016 and \$22.5 million in both 2015 and 2014.

Sources of cash for our insurance subsidiaries primarily consist of premiums collected, investment income and maturing investments. Primary cash outflows are paid claims, losses and loss adjustment expenses, policy and contract acquisition expenses, other underwriting expenses and investment purchases. Cash outflows related to losses and loss adjustment expenses can be variable because of uncertainties surrounding settlement dates for liabilities for unpaid losses and because of the potential for large losses either individually or in the aggregate. We periodically adjust our investment policy to respond to changes in short-term and long-term cash requirements.

Net cash provided by operating activities was \$737.6 million during 2016, as compared to \$438.4 million in 2015 and \$564.7 million in 2014. The \$299.2 million increase in 2016 compared to 2015 was primarily due to lower reinsurance payments in 2016 as compared to 2015. In 2015, reinsurance payments were made in connection with the disposal of the U.K. motor business that did not recur in 2016. Also contributing to the increase in cash were lower claims payments during 2016. These increases were partially offset by slightly lower premium collections during 2016. The \$126.3 million change in 2015 compared to 2014 was primarily due to higher federal income tax payments resulting from increased earnings, an increase in reinsurance payments, primarily due to the aforementioned disposal of the U.K. motor business, and slightly lower premium collections during 2015. These decreases were partially offset by lower claims payments.

Net cash used in investing activities was \$495.4 million during 2016, as compared to \$171.5 million during 2015 and \$600.7 million in 2014. During 2016, cash used in investing activities primarily related to net purchases of fixed maturities, commercial mortgage loan participations, and other investments. These cash outflows were partially offset by proceeds from net sales of equity securities. During 2015, cash used in investing activities primarily related to net purchases of commercial mortgage loan participations and fixed maturities. These cash outflows were partially offset by net cash received from the disposal of the U.K. motor business. In 2014, cash used in investing activities primarily related to net purchases of fixed maturities, equity securities, and other investments. See Note 3 – “Investments” in the Notes to Consolidated Financial

Statements included in Financial Statements and Supplementary Data of this Form 10-K.

Net cash used in financing activities was \$295.0 million during 2016, as compared to \$294.7 million during 2015 and \$71.7 million in 2014. During 2016, cash used in financing activities primarily resulted from the repayment of debt, repurchases of common stock, and dividend payments to shareholders. These cash outflows were partially offset by cash inflows related to the issuance, on April 8, 2016, of \$375.0 million of senior unsecured debentures. During 2015, cash used in financing activities primarily resulted from repurchases of common stock, repayments of debt and dividend payments to shareholders. During 2014, cash used in financing activities primarily resulted from the payment of dividends to shareholders and the repurchase of common stock, partially offset by cash inflows related to the exercise of employee stock options.

Dividends to common shareholders are subject to quarterly board approval and declaration. During 2016, as declared by the Board, we paid three quarterly dividends of \$0.46 per share and one quarterly dividend of \$0.50 per share to our shareholders totaling \$80.4 million. We believe that our holding company assets are sufficient to provide for future shareholder dividends should the Board of Directors declare them.

At December 31, 2016, THG, as a holding company, held approximately \$126.5 million of fixed maturities and cash. We believe our holding company assets will be sufficient to meet our 2017 obligations, which consist primarily of dividends to our shareholders (as and to the extent declared), the interest on our senior and subordinated debentures, certain costs associated with benefits due to our former life employees and agents, and, to the extent required, payments related to indemnification of liabilities associated with the sale of various subsidiaries. As discussed below, we have, and opportunistically may continue to, repurchase our common stock and debt. We may decide to provide funds to the holding company for these or other opportunities through dividends or short-term intercompany lending arrangements.

We expect to continue to generate sufficient positive operating cash to meet all short-term and long-term cash requirements relating to current operations, including the funding of our qualified defined benefit pension plan and the Chaucer pension plan. Based upon the current estimate of liabilities and certain assumptions regarding investment returns and other factors, our qualified defined benefit pension plan and Chaucer pension plan collectively have plan liabilities in excess of plan assets of approximately \$69 million. The ultimate payment amounts for our benefit plans are based on several assumptions, including but not limited to, the rate of return on plan assets, the discount rate for benefit obligations, mortality experience,

interest crediting rates, inflation and the ultimate valuation and determination of benefit obligations. Since differences between actual plan experience and our assumptions are almost certain, changes both positive and negative to our current funding status and ultimately our obligations in future periods are likely.

Our insurance subsidiaries maintain a high degree of liquidity within their respective investment portfolios in fixed maturity and short-term investments. We believe that the quality of the assets we hold will allow us to realize the long-term economic value of our portfolio, including securities that are currently in an unrealized loss position. We do not anticipate the need to sell these securities to meet our insurance subsidiaries' cash requirements since we expect our insurance subsidiaries to generate sufficient operating cash to meet all short-term and long-term cash requirements. However, there can be no assurance that unforeseen business needs or other items will not occur causing us to have to sell those securities in a loss position before their values fully recover, thereby causing us to recognize impairment charges in that time period.

Our Board of Directors has authorized aggregate repurchases of our common stock of up to \$900 million. Under the repurchase authorizations, the Company may repurchase, from time to time, common shares in amounts, at prices and at such times as the Company deems appropriate, subject to market conditions and other considerations. Repurchases may be executed using open market purchases, privately negotiated transactions, accelerated repurchase programs or other transactions. We are not required to purchase any specific number of shares or to make purchases by any certain date under this program. During 2016, we repurchased approximately 1.3 million shares of our common stock at a cost of \$105.6 million.

On April 8, 2016, we issued \$375.0 million aggregate principal amount of 4.50% senior unsecured debentures due April 15, 2026. Net proceeds of the debt issuance were \$370.7 million. The net proceeds were used, together with cash on hand, to redeem outstanding 7.50% senior notes due March 1, 2020 and 6.375% senior notes due June 15, 2021, resulting in a pre-tax loss of \$86.1 million, related primarily to the required "make-whole" provision in these issuances. During the fourth quarter of 2016, we also repurchased senior debentures with a net carrying value of \$11.9 million at a cost of \$14.1 million, resulting in a loss of \$2.2 million. During 2015, we repurchased senior debentures with a net carrying value of \$90.2 million at a cost of \$114.3 million, resulting in a loss of \$24.1 million. Additional information related to all borrowings is in Note 6 – "Debt and Credit Arrangements" in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K.

We have a \$200.0 million credit agreement which expires in November 2018, with an option to increase the facility to \$300.0 million assuming no default and satisfaction of certain other conditions. The agreement also includes a \$50 million sub-facility for standby letters of credit that can be used for general corporate purposes. Borrowings, if any, under the agreement are unsecured and incur interest at a rate per annum equal to, the higher of (a) the prime commercial lending rate of the administrative agent, (b) the Federal Funds Rate plus half of a percent, or (c) the one month Adjusted LIBOR plus one percent and any applicable margin. The agreement contains financial covenants including, but not limited to, maintaining at least a certain level of consolidated equity, maximum consolidated leverage ratios and requires certain of our subsidiaries to maintain a minimum RBC ratio. We had no borrowings under this agreement during 2016, 2015 and 2014.

Membership in the FHLBB provides us with access to additional liquidity based on our stock holdings and pledged collateral. At December 31, 2016, we had additional borrowing capacity of \$57.6 million. There were no borrowings outstanding under this agreement at December 31, 2016; however, we have borrowed and may continue to borrow, from time to time, through this facility to provide short term liquidity.

On October 15, 2015, we entered into a Standby Letter of Credit Facility Agreement (the "Facility Agreement") not to exceed £170.0 million (or \$209.6 million) outstanding at any one time, with the option to increase the amount available for issuances of letters of credit to £235.0 million (or \$289.8 million) in the aggregate on one occasion only during the term of the Facility Agreement (subject to the consent of all lenders and assuming no default and satisfaction of other specified conditions). The Facility Agreement provides certain covenants including, but not limited to, the syndicates' financial condition. The Facility Agreement provides regulatory capital supporting Chaucer's underwriting activities for the 2015, 2016 and 2017 years of account and each prior open year of account. The Facility Agreement is generally renewed biennially to support new underwriting years.

The Facility agreement is subject to a letter of credit commission fee on outstanding letters of credit that is payable quarterly. The Facility Agreement fee ranges from 1.125% to 1.50% per annum, depending on our credit ratings for portions that are not cash collateralized, and 0.275% per annum for portions that are cash collateralized. We may, from time to time, collateralize a portion of the outstanding letter of credit. In addition to the commission fee on the uncollateralized outstanding letter of

credit, a commitment fee in respect of the unutilized commitments under the Facility Agreement is payable quarterly, and ranges from 0.394% to 0.525% per annum, depending on our credit ratings. Chaucer is also required to pay customary agency fees. We paid \$3.5 million and \$3.7 million in interest costs in 2016 and 2015, respectively.

Simultaneous with the Facility Agreement, we entered into a Guaranty Agreement (the "Guaranty Agreement") with Lloyds Bank plc, as Facility Agent and Security Agent, pursuant to which, we unconditionally guarantee the obligations of Chaucer under the Facility Agreement. The Guaranty Agreement contains certain financial covenants that require us to maintain a minimum net worth, a minimum risk-based capital ratio at our primary U.S. domiciled property and casualty companies and a maximum leverage ratio, and certain negative covenants that limit our ability, among other things, to incur or assume certain debt, grant liens on our property, merge or consolidate, dispose of assets, materially change the nature or conduct of our business and make restricted payments (except, in each case, as provided by certain exceptions). The Guaranty

Agreement also contains certain customary representations and warranties.

At December 31, 2016, we were in compliance with the covenants of our debt and credit agreements.

### CONTRACTUAL OBLIGATIONS

Financing obligations generally include repayment of our senior debentures, subordinated debentures, borrowings from the FHLBB, and operating lease payments. The following table represents our annual payments related to the contractual principal and interest payments of these financing obligations as of December 31, 2016 and operating lease payments reflect expected cash payments based upon lease terms. In addition, we also have included our estimated payments related to our loss and LAE obligations and our current expectation of payments to be made to support the obligations of our benefit plans. The following table also includes commitments to purchase investment securities at a future date. Actual payments may differ from the contractual and/or estimated payments in the table.

DECEMBER 31, 2016

(in millions)

	Maturity less than 1 year	Maturity 1-3 years	Maturity 4-5 years	Maturity in excess of 5 years	Total
Debt <sup>(1)</sup>	\$ —	\$ —	\$ —	\$ 797.3	\$ 797.3
Interest associated with debt <sup>(1)</sup>	47.7	89.4	89.4	523.2	749.7
Operating lease commitments <sup>(2)</sup>	16.7	27.3	14.8	2.9	61.7
Qualified defined benefit pension plan funding obligations <sup>(3)</sup>	7.4	—	—	—	7.4
Non-qualified defined benefit pension and post-retirement benefit obligation <sup>(4)</sup>	4.0	6.7	6.0	12.6	29.3
Investment commitments <sup>(5)</sup>	43.2	51.6	15.2	0.1	110.1
Loss and LAE obligations <sup>(6)</sup>	2,206.0	2,220.5	952.0	1,570.9	6,949.4

(1) Debt includes our senior debentures due in 2026, which pay annual interest at a rate of 4.50%, our senior debentures due in 2025, which pay annual interest at a rate of 7.625%, our subordinated debentures due in 2053, which pay annual interest at a rate of 6.35%, and our subordinated debentures due in 2027, which pay cumulative dividends at an annual rate of 8.207%. Payments related to the principal amounts of these agreements represent contractual maturity; therefore, principal and interest associated with these obligations are reflected in the above table based upon the contractual maturity dates. In addition, we have \$125.0 million of borrowings under a collateralized borrowing program with the FHLBB that pays interest monthly at a rate of 5.50% annually. Such borrowings are available for a twenty-year term or through September 25, 2029. Also, interest includes contractual interest related to the uncollateralized portion of our £170.0 million Standby Letter of Credit Facility.

(2) Our U.S. and international subsidiaries are lessees with a number of operating leases.

(3) Reflects the minimum amount expected to be contributed to the Chaucer plan based upon results of its triennial funding review, expected to be completed in 2017, and the plan's current funded status. We do not expect to make any significant contributions to our U.S. qualified plan in order to meet our minimum funding requirements for the next several years and therefore no contributions to that plan are included in this schedule. However, additional contributions may be required in the future to both plans based on the level of pension assets and liabilities in future periods.

The ultimate payment amount for our pension plans are based on several assumptions, including, but not limited to, the rate of return on plan assets, the discount rate for benefit obligations, mortality experience, interest crediting rates and the ultimate valuation of benefit obligations. Differences between actual plan experience and our assumptions are likely and will likely result in changes to our funding obligations in future periods.

(4) Non-qualified defined benefit pension and postretirement benefit obligations reflect estimated payments to be made through plan year 2026 for pension, postretirement and postemployment benefits, although it is likely that payments will be made beyond 2026. Estimates of these payments and the payment patterns are based upon historical experience.

(5) Investment commitments relate primarily to partnerships.

(6) Unlike many other forms of contractual obligations, loss and LAE reserves do not have definitive due dates and the ultimate payment dates are subject to a number of variables and uncertainties. As a result, the total loss and LAE reserve payments to be made by period, as shown in the table, are estimates based principally on historical experience.

## OFF-BALANCE SHEET ARRANGEMENTS

We currently do not have any material off-balance sheet arrangements that are reasonably likely to have an effect on our financial position, revenues, expenses, results of operations, liquidity, capital expenditures, or capital resources.

## CONTINGENCIES AND REGULATORY MATTERS

Information regarding litigation and legal contingencies appears in Note 18—“Commitments and Contingencies” in the Notes to Consolidated Financial Statements included in Financial Statements and Supplementary Data of this Form 10-K. Information related to certain regulatory and industry developments are contained in “Regulation” in Part 1 – Item 1 of this Form 10-K and in “Risk Factors” in Part 1 – Item 1A of this Form 10-K.

## RATING AGENCIES

Insurance companies are rated by rating agencies to provide both industry participants and insurance consumers information on specific insurance companies. Higher ratings generally indicate the rating agencies’ opinion regarding financial stability and a stronger ability to pay claims.

We believe that strong ratings are important factors in marketing our products to our agents and customers, since rating information is broadly disseminated and generally used throughout the industry. Insurance company financial strength ratings are assigned to an insurer based upon factors deemed by the rating agencies to be relevant to policyholders and are not directed toward protection of investors. Such ratings are neither a rating of securities nor a recommendation to buy, hold or sell any security. Customers typically focus on claims-paying ratings, while creditors focus on debt ratings. Investors use both to evaluate a company’s overall financial strength.

## RISKS AND FORWARD-LOOKING STATEMENTS

Management’s Discussion and Analysis contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. For a discussion of indicators of forward-looking statements and specific important factors that could cause actual results to differ materially from those contained in forward-looking statements, see “Risk Factors” in Part 1 – Item 1A of this Form 10-K. This Management’s Discussion and Analysis should be read and interpreted in light of such factors.

## GLOSSARY OF SELECTED INSURANCE TERMS

**Account business** – Customers with multiple policies and/or coverages.

**Account rounding** – The conversion of single policy customers to accounts with multiple policies and/or additional coverages.

**Benefit payments** – Payments made to an insured or their beneficiary in accordance with the terms of an insurance policy.

**Capacity** – The maximum amount of business which may be accepted by a syndicate or a corporate member on a syndicate, expressed in terms of gross premium written, net of commission.

**Casualty insurance** – Insurance that is primarily concerned with the losses caused by injuries to third persons and their property (other than the policyholder) and the related legal liability of the insured for such losses.

**Catastrophe** – A severe loss, resulting from natural or manmade events, including, among others, hurricanes, tornadoes and other windstorms, earthquakes, hail, severe winter weather, fire, explosions, and terrorism.

**Catastrophe loss** – Loss and directly identified loss adjustment expenses from catastrophes, including development on prior years’ catastrophe loss reserves. The Insurance Services Office (“ISO”) Property Claim Services (“PCS”) defines a catastrophe loss as an event that causes \$25 million or more in U.S. industry insured property losses and affects a significant number of property and casualty policyholders and insurers. In addition to those catastrophe events declared by ISO, claims management also generally includes within the definition of a “catastrophe loss”, a property loss event that causes approximately \$5 million or more in Company insured losses and affects in excess of one hundred policy holders or multiple independent risks. For the international business in our Chaucer segment, management utilizes a “catastrophe loss” definition that is substantially consistent with the ISO definition framework.

**Cede; cedent; ceding company** – When a party reinsures its liability with another, it “cedes” business and is referred to as the “cedent” or “ceding company”.

**Corporate member** – A company admitted to membership of Lloyd’s and which provides capital in support of a Lloyd’s syndicate to enable the syndicate to undertake underwriting risks.

**Credit spread** – The difference between the yield on the debt securities of a particular corporate debt issue and the yield of a similar maturity of U.S. Treasury debt securities.



**Current accident year results** – A non-GAAP measure of the estimated earnings impact of current premiums offset by estimated loss experience and expenses for the current accident year. This measure includes the estimated increase in revenue associated with higher prices (premiums), including those caused by price inflation and changes in exposure, partially offset by higher volume driven expenses and inflation of loss costs. Volume driven expenses include acquisition costs such as commissions paid to agents, which are typically based on a percentage of premium dollars.

**Earned premium** – The portion of a premium that is recognized as income, or earned, based on the expired portion of the policy period, that is, the period for which loss coverage has actually been provided. For example, after six months, \$50 of a \$100 annual premium is generally considered earned premium. The remaining \$50 of annual premium is unearned premium. Net earned premium is earned premium net of reinsurance.

**Economic interest** – The share of syndicate underwriting capacity supported by capital from Chaucer Holdings Limited.

**Excess of loss reinsurance** – Reinsurance that indemnifies the insured against all or a specific portion of losses under reinsured policies in excess of a specified dollar amount or “retention”.

**Exposure** – As it relates to underwriting, a measure of the rating units or premium basis of a risk; for example, an exposure of a number of automobiles. As it relates to loss events, the maximum value of claims made on an insurer from an event or events that would result in the total exhaustion of the cover or indemnity offered by an insurance policy.

**Exposure management actions** – Actions that focus on improving underwriting profitability and/or lessening earnings volatility by reducing our exposures and property concentrations in certain geographies and lines that are more prone to both catastrophe and non-catastrophe losses. These actions include, but are not limited to, non-renewal, rate increases, stricter underwriting standards and higher deductible utilization, agency management actions, and more selective portfolio management by modifying our business mix.

**Frequency** – The number of claims occurring during a given coverage period.

**Funds at Lloyd's** – Funds held in trust at Lloyd's as security for the policyholders and to support a corporate member's overall underwriting activities. The funds must be in a form approved by Lloyd's and be maintained at certain specified levels.

**Inland Marine Insurance** – In Commercial Lines, this is a type of coverage developed for shipments that do not involve ocean transport. It covers articles in transit by all forms of land and air transportation as well as bridges, tunnels and other means of transportation and communication. In the context of Personal Lines, this term relates to floater policies that cover expensive personal items such as fine art and jewelry.

**Loss adjustment expenses (“LAE”)** – Expenses incurred in the adjusting, recording, and settlement of claims. These expenses include both internal company expenses and outside services. Allocated LAE (“ALAE”) refers to defense and cost containment expenses, including legal fees, court costs, and investigation fees. Unallocated LAE (“ULAE”) refers to expenses that generally cannot be associate with a specific claim. ULAE includes internal costs such as salaries, fringe benefits and other overhead costs associated with the claim settlement process and external adjustment and appraisal fees.

**Loss costs** – An amount of money paid for an insurance claim.

**Loss reserves** – Liabilities established by insurers to reflect the estimated cost of claims payments and the related expenses that the insurer will ultimately be required to pay in respect of insurance it has written. Reserves are established for losses and for LAE.

**Managing agent** – An agent that runs the affairs of a syndicate.

**Peril** – A cause of loss.

**Price(ing) increase or decrease (Commercial Lines and Chaucer)** – Represents the average change in premium on renewed policies caused by the estimated net effect of base rate changes, discretionary pricing, inflation or changes in policy level exposure or insured risk.

**Price(ing) increase or decrease (Personal Lines)** – The estimated cumulative premium effect of approved rate actions applied to policies available for renewal, regardless of whether or not policies are actually renewed. Pricing changes do not represent actual increases or decreases realized by the Company.

**Property insurance** – Insurance that provides coverage for tangible property in the event of loss, damage or loss of use.

**Rate** – The estimated pure pricing factor upon which the policyholder's premium is based excluding changes in exposure or risk.



#### **Ratios:<sup>(1)</sup>**

**Catastrophe loss ratio** – The ratio of catastrophe losses incurred to premiums earned.

**Combined ratio** – This ratio is the GAAP equivalent of the statutory ratio that is widely used as a benchmark for determining an insurer's underwriting performance. A ratio below 100% generally indicates profitable underwriting prior to the consideration of investment income. A combined ratio over 100% generally indicates unprofitable underwriting prior to the consideration of investment income. The combined ratio is the sum of the loss and loss adjustment expense ratio and the expense ratio.

**Expense Ratio** – The ratio of underwriting expenses (including the amortization of deferred acquisition costs), less premium installment fee income and premium charge offs, to premiums earned for a given period.

**Loss and Loss adjustment expense ("LAE") ratio** – The ratio of loss and loss adjustment expenses to premiums earned for a given period.

**Loss ratio** – The ratio of losses to premiums earned for a given period.

**Reinstatement premium** – A pro-rata reinsurance premium that may be charged for reinstating the amount of reinsurance coverage reduced as the result of a reinsurance loss payment under a reinsurance treaty. For events that we are the insured party, the charge would decrease premiums; for events where we provide reinsurance coverage, the charge would increase premiums. For example, in 2005, this premium was required to ensure that our property catastrophe occurrence treaty, which was exhausted by Hurricane Katrina, was available again in the event of another large catastrophe loss in 2005.

**Reinsurance** – An arrangement in which an insurance company, or a reinsurance company, known as the reinsurer, agrees to indemnify another insurance or reinsurance company, known as the ceding company, against all or a portion of the insurance or reinsurance risks underwritten by the ceding company under one or more policies. Reinsurance can provide a ceding company with several benefits, including a reduction in net liability on risks and catastrophe protection from large or multiple losses. Reinsurance does not legally discharge the primary insurer from its liability with respect to its obligations to the insured.

**Risk based capital ("RBC")** – A method of measuring the minimum amount of capital appropriate for an insurance company to support its overall business operations in consideration of its size and risk profile. The RBC ratio for regulatory purposes is calculated as total adjusted capital divided by required risk based capital. Total adjusted capital for property and casualty companies is capital and surplus, adjusted for the non-tabular reserve discount applicable to our assumed discontinued accident and health insurance business. The Company Action Level is the first level at which regulatory involvement is specified based upon the level of capital.

Regulators may take action for reasons other than triggering various RBC action levels. The various action levels are summarized as follows:

- The Company Action Level, which equals 200% of the Authorized Control Level, requires a company to prepare and submit a RBC plan to the commissioner of the state of domicile. A RBC plan proposes actions which a company may take in order to bring statutory capital above the Company Action Level. After review, the commissioner will notify the company if the plan is satisfactory.
- The Regulatory Action Level, which equals 150% of the Authorized Control Level, requires the insurer to submit to the commissioner of the state of domicile an RBC plan, or if applicable, a revised RBC plan. After examination or analysis, the commissioner will issue an order specifying corrective actions to be taken.
- The Authorized Control Level authorizes the commissioner of the state of domicile to take whatever regulatory actions are considered necessary to protect the best interest of the policyholders and creditors of the insurer.
- The Mandatory Control Level, which equals 70% of the Authorized Control Level, authorizes the commissioner of the state of domicile to take actions necessary to place the company under regulatory control (i.e., rehabilitation or liquidation).

**Security Lending** – We engage our banking provider to lend securities from our investment portfolio to third parties. These lent securities are fully collateralized by cash. We monitor the fair value of the securities on a daily basis to assure that the collateral is maintained at a level of at least 102% of the fair value of the loaned securities. We record securities lending collateral as a cash equivalent, with an offsetting liability in expenses and taxes payable.

**Severity** – A monetary increase in the loss costs associated with the same or similar type of event or coverage.

**Solvency II** – European Commission-led fundamental review of the capital adequacy regime for the European insurance industry.

**Specialty Lines** – A major component of our other commercial lines. There is no accepted industry definition of “specialty lines”, but for our purpose specialty lines consist of products such as inland and ocean marine, surety, specialty property, professional liability, management liability and various other program businesses. When discussing net premiums written and other financial measures of our specialty businesses, we may include non-specialty premiums that are written as part of the entire account.

**Statutory accounting practices** – Recording transactions and preparing financial statements in accordance with the rules and procedures prescribed or permitted by insurance regulatory authorities including the NAIC, which in general reflect a liquidating, rather than going concern, concept of accounting.

**Syndicate** – A group of members underwriting insurance at Lloyd’s through the agency of a managing agent, to whom a particular syndicate number is assigned.

**Underwriting** – The process of selecting risks for insurance and determining in what amounts and on what terms the insurance company will accept risks.

**Underwriting expenses** – Expenses incurred in connection with the acquisition, pricing and administration of a policy or contract, and other insurance company expenses unrelated to claims handling or investments.

**Unearned premiums** – The portion of a premium representing the unexpired amount of the contract term as of a certain date.

**Written premium** – The premium assessed for the entire coverage period of an insurance policy or contract without regard to how much of the premium has been earned. See also “earned premium” above. Net premium written is written premium net of reinsurance.

(1) Ratios may not be comparable to similarly titled measures of other companies.

## Item 7A — Quantitative and Qualitative Disclosures about Market Risk

Reference is made to “Quantitative and Qualitative Disclosures about Market Risk” in Management’s Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K.

## Item 8 — Financial Statements and Supplementary Data

### REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM



To the Board of Directors and Shareholders of  
The Hanover Insurance Group, Inc.:

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of The Hanover Insurance Group, Inc. and its subsidiaries at December 31, 2016 and December 31, 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedules listed in the index appearing under Item 15(a)(2) present fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedules, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedules, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

*PricewaterhouseCoopers LLP*

/s/ PricewaterhouseCoopers LLP  
Boston, MA  
February 22, 2017

**THE HANOVER INSURANCE GROUP, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF INCOME**

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions, except per share data)</i>			
<b>Revenues</b>			
Premiums	\$4,628.1	\$4,704.8	\$4,710.3
Net investment income	279.4	279.1	270.3
Net realized investment gains (losses):			
Net realized gains from sales and other	36.5	46.3	55.6
Net other-than-temporary impairment losses on investments recognized in earnings	(27.9)	(26.8)	(5.5)
Total net realized investment gains	8.6	19.5	50.1
Fees and other income	29.7	30.6	36.9
Total revenues	4,945.8	5,034.0	5,067.6
<b>Losses and expenses</b>			
Losses and loss adjustment expenses	2,964.7	2,884.1	2,927.5
Amortization of deferred acquisition costs	1,035.2	1,033.2	1,040.0
Interest expense	54.9	60.6	65.8
Gain on disposal of U.K. motor business	(1.1)	(38.4)	—
Net loss from repayment of debt	88.3	24.1	0.1
Other operating expenses	611.5	631.0	656.2
Total losses and expenses	4,753.5	4,594.6	4,689.6
Income before income taxes	192.3	439.4	378.0
Income tax expense:			
Current	52.1	55.8	27.1
Deferred	(15.9)	52.8	68.6
Total income tax expense	36.2	108.6	95.7
Income from continuing operations	156.1	330.8	282.3
Net (loss) gain from discontinued operations (net of income tax benefit of \$2.8, \$0.5 and \$0.1 in 2016, 2015 and 2014)	(1.0)	0.7	(0.3)
Net income	\$ 155.1	\$ 331.5	\$ 282.0
<b>Earnings per common share:</b>			
<b>Basic:</b>			
Income from continuing operations	\$ 3.65	\$ 7.53	\$ 6.41
Net (loss) gain from discontinued operations	(0.02)	0.02	—
Net income per share	\$ 3.63	\$ 7.55	\$ 6.41
Weighted average shares outstanding	42.8	43.9	44.0
<b>Diluted:</b>			
Income from continuing operations	\$ 3.61	\$ 7.39	\$ 6.29
Net (loss) gain from discontinued operations	(0.02)	0.01	(0.01)
Net income per share	\$ 3.59	\$ 7.40	\$ 6.28
Weighted average shares outstanding	43.2	44.8	44.9

The accompanying notes are an integral part of these consolidated financial statements.

**THE HANOVER INSURANCE GROUP, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions)</i>			
Net income	<b>\$ 155.1</b>	\$ 331.5	\$ 282.0
Other comprehensive income (loss), net of tax:			
Available-for-sale securities:			
Net appreciation (depreciation) during the period	<b>28.8</b>	(138.0)	40.0
Change in other-than-temporary impairment losses recognized in other comprehensive income (loss)	<b>7.3</b>	(13.0)	1.6
Total available-for-sale securities	<b>36.1</b>	(151.0)	41.6
Pension and postretirement benefits:			
Net actuarial losses and prior service costs arising in the period	<b>(30.3)</b>	(2.8)	(22.6)
Amortization recognized as net periodic benefit and postretirement cost	<b>6.4</b>	8.5	14.4
Total pension and postretirement benefits	<b>(23.9)</b>	5.7	(8.2)
Cumulative foreign currency translation adjustment:			
Amount recognized as cumulative foreign currency translation during the period	<b>(3.3)</b>	(7.2)	(4.6)
Total other comprehensive income (loss), net of tax	<b>8.9</b>	(152.5)	28.8
Comprehensive income	<b>\$ 164.0</b>	\$ 179.0	\$ 310.8

The accompanying notes are an integral part of these consolidated financial statements.



**THE HANOVER INSURANCE GROUP, INC. AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**

DECEMBER 31 2016 2015

(in millions, except share data)

**Assets**

Investments:		
Fixed maturities, at fair value (amortized cost of \$7,235.1 and \$6,934.0)	\$ 7,331.3	\$ 6,983.4
Equity securities, at fair value (cost of \$498.4 and \$528.5)	584.4	576.6
Other investments	533.8	393.4
Total investments	8,449.5	7,953.4
Cash and cash equivalents	282.6	338.8
Accrued investment income	61.7	62.9
Premiums and accounts receivable, net	1,438.1	1,391.7
Reinsurance recoverable on paid and unpaid losses and unearned premiums	2,611.8	2,635.0
Deferred acquisition costs	517.5	508.8
Deferred income taxes	115.1	137.9
Goodwill	184.8	186.0
Other assets	479.8	483.7
Assets of discontinued operations	79.5	83.0
Total assets	\$14,220.4	\$13,781.2

**Liabilities**

Loss and loss adjustment expense reserves	\$ 6,949.4	\$ 6,574.4
Unearned premiums	2,561.0	2,540.8
Expenses and taxes payable	728.0	724.9
Reinsurance premiums payable	251.9	205.2
Debt	786.4	803.1
Liabilities of discontinued operations	86.2	88.4
Total liabilities	11,362.9	10,936.8

Commitments and contingencies

**Shareholders' Equity**

Preferred stock, par value \$0.01 per share; 20.0 million shares authorized; none issued	—	—
Common stock, par value \$0.01 per share; 300.0 million shares authorized; 60.5 million shares issued	0.6	0.6
Additional paid-in capital	1,846.7	1,833.5
Accumulated other comprehensive income	62.8	53.9
Retained earnings	1,875.6	1,803.5
Treasury stock at cost (18.1 and 17.5 million shares)	(928.2)	(847.1)
Total shareholders' equity	2,857.5	2,844.4
Total liabilities and shareholders' equity	\$14,220.4	\$13,781.2

The accompanying notes are an integral part of these consolidated financial statements.

**THE HANOVER INSURANCE GROUP, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions)</i>			
<b>Preferred Stock</b>			
Balance at beginning and end of year	\$ —	\$ —	\$ —
<b>Common Stock</b>			
Balance at beginning and end of year	0.6	0.6	0.6
<b>Additional Paid-in Capital</b>			
Balance at beginning of year	1,833.5	1,830.7	1,830.1
Employee and director stock-based awards and other	13.2	2.8	0.6
Balance at end of year	1,846.7	1,833.5	1,830.7
<b>Accumulated Other Comprehensive Income (Loss), net of tax</b>			
<b>Net Unrealized Appreciation (Depreciation) on Investments:</b>			
Balance at beginning of year	149.9	300.9	259.3
Net appreciation (depreciation) on available-for-sale securities	36.1	(151.0)	41.6
Balance at end of year	186.0	149.9	300.9
<b>Defined Benefit Pension and Postretirement Plans:</b>			
Balance at beginning of year	(78.6)	(84.3)	(76.1)
Net amount arising in the period	(30.3)	(2.8)	(22.6)
Net amount recognized as net periodic benefit cost	6.4	8.5	14.4
Balance at end of year	(102.5)	(78.6)	(84.3)
<b>Cumulative Foreign Currency Translation Adjustment:</b>			
Balance at beginning of year	(17.4)	(10.2)	(5.6)
Amount recognized as cumulative foreign currency translation during the year	(3.3)	(7.2)	(4.6)
Balance at end of year	(20.7)	(17.4)	(10.2)
Total accumulated other comprehensive income	62.8	53.9	206.4
<b>Retained Earnings</b>			
Balance at beginning of year	1,803.5	1,558.7	1,349.1
Net income	155.1	331.5	282.0
Dividends to shareholders	(80.4)	(74.2)	(67.0)
Stock-based compensation	(2.6)	(12.5)	(5.4)
Balance at end of year	1,875.6	1,803.5	1,558.7
<b>Treasury Stock</b>			
Balance at beginning of year	(847.1)	(752.4)	(762.9)
Shares purchased at cost	(105.6)	(127.3)	(20.4)
Net shares reissued at cost under employee stock-based compensation plans	24.5	32.6	30.9
Balance at end of year	(928.2)	(847.1)	(752.4)
Total shareholders' equity	\$2,857.5	\$2,844.4	\$2,844.0

The accompanying notes are an integral part of these consolidated financial statements.

**THE HANOVER INSURANCE GROUP, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions)</i>			
<b>Cash Flows From Operating Activities</b>			
Net income	\$ 155.1	\$ 331.5	\$ 282.0
Adjustments to reconcile net income to net cash provided by operating activities:			
Gain on disposal of U.K. motor business	(1.1)	(38.4)	—
Net loss from repayment of debt	88.3	24.1	0.1
Net realized investment gains	(8.6)	(19.1)	(50.2)
Net amortization and depreciation	30.7	30.2	33.5
Stock-based compensation expense	12.0	12.3	15.1
Amortization of defined benefit plan costs	9.9	12.7	22.1
Deferred income tax expense	(13.2)	53.1	68.6
Change in deferred acquisition costs	(7.8)	6.9	(19.6)
Change in premiums receivable, net of reinsurance premiums payable	(28.2)	(52.5)	(184.1)
Change in loss, loss adjustment expense and unearned premium reserves	527.8	121.0	256.3
Change in reinsurance recoverable	(35.8)	(27.0)	115.9
Change in expenses and taxes payable	6.9	(1.0)	12.5
Other, net	1.6	(15.4)	12.5
Net cash provided by operating activities	737.6	438.4	564.7
<b>Cash Flows From Investing Activities</b>			
Proceeds from disposals and maturities of fixed maturities	1,602.3	1,696.4	1,323.1
Proceeds from disposals of equity securities and other investments	271.1	329.4	175.2
Purchase of fixed maturities	(2,020.9)	(1,792.2)	(1,710.1)
Purchase of equity securities and other investments	(351.2)	(428.8)	(379.7)
Cash received from disposal of U.K. motor business, net of cash transferred	6.9	44.3	—
Capital expenditures	(15.7)	(19.5)	(11.2)
Other investing activities	12.1	(1.1)	2.0
Net cash used in investing activities	(495.4)	(171.5)	(600.7)
<b>Cash Flows From Financing Activities</b>			
Proceeds from exercise of employee stock options	16.2	16.6	12.6
Proceeds from debt borrowings, net	370.7	—	—
Change in cash collateral related to securities lending program	(6.4)	15.7	7.4
Dividends paid to shareholders	(80.4)	(74.2)	(67.0)
Repayment of debt	(475.4)	(114.3)	(0.7)
Repurchases of common stock	(105.6)	(127.3)	(20.4)
Other financing activities	(14.1)	(11.2)	(3.6)
Net cash used in financing activities	(295.0)	(294.7)	(71.7)
Effect of exchange rate changes on cash	(3.4)	(6.7)	(5.2)
Net change in cash and cash equivalents	(56.2)	(34.5)	(112.9)
Cash and cash equivalents, beginning of year	338.8	373.3	486.2
Cash and cash equivalents, end of year	\$ 282.6	\$ 338.8	\$ 373.3
<b>Supplemental Cash Flow Information</b>			
Interest payments	\$ 53.1	\$ 60.8	\$ 64.1
Income tax net payments	\$ 29.7	\$ 56.9	\$ 8.4

The accompanying notes are an integral part of these consolidated financial statements.

# Notes to Consolidated Financial Statements

## 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### A. BASIS OF PRESENTATION AND PRINCIPLES OF CONSOLIDATION

The consolidated financial statements of The Hanover Insurance Group, Inc. ("THG" or the "Company"), include the accounts of The Hanover Insurance Company ("Hanover Insurance") and Citizens Insurance Company of America ("Citizens"), THG's principal U.S. domiciled property and casualty companies; Chaucer Holdings Limited ("Chaucer"), a specialist insurance underwriting group which operates through the Society and Corporation of Lloyd's ("Lloyd's"); and certain other insurance and non-insurance subsidiaries. These legal entities conduct their operations through several business segments discussed in Note 14 – "Segment Information". The consolidated financial statements also include the Company's discontinued operations, consisting primarily of the Company's former life insurance businesses, and its accident and health business. All intercompany accounts and transactions have been eliminated.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America ("U.S. GAAP") requires the Company 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 financial statements and the reported amount of revenues and expenses during the reporting period. Actual results could differ from those estimates. In the opinion of the Company's management these financial statements reflect all adjustments, consisting of normal recurring items necessary for a fair presentation of the financial position and results of operations.

### B. INVESTMENTS

Fixed maturities and equity securities are classified as available-for-sale and are carried at fair value, with unrealized gains and losses, net of taxes, reported in accumulated other comprehensive income, a separate component of shareholders' equity. The amortized cost of fixed maturities is adjusted for amortization of premiums and accretion of discounts to maturity.

Other investments consist primarily of mortgage participations, limited partnerships and overseas deposits. Mortgage participations represent interests in commercial mortgage loans originated and serviced by a third-party of which the Company shares, on a pro-rata basis, in all related cash flows of the underlying mortgage loans. Due to certain reacquisition rights retained by the third-party in the loan participation, these investments are accounted for

as secured borrowings under Accounting Standards Codification ("ASC") 860, *Transfers and Servicing* ("ASC 860"). Mortgage participations are stated at unpaid principal balances adjusted for deferred fees or expenses, net of reserves. Reserves on mortgages are established and are collectively evaluated based on losses expected by the Company for loans that may not be collectible in full. In establishing reserves, the Company considers, among other things, the estimated fair value of the underlying collateral.

Investments in limited partnership interests include interests in private equity funds. Where the Company's interest is so minor that it exercises virtually no influence over operating and financial policies, investments in limited partnership interests are accounted for in accordance with the cost method of accounting; all other investments in limited partnership interests are accounted for in accordance with the equity method of accounting.

Overseas deposits are investments maintained in overseas funds and managed exclusively by Lloyd's. These funds are required in order to protect policyholders in overseas markets and enable the Company to operate in those markets. Overseas deposits are carried at fair value. Realized and unrealized gains and losses on overseas deposits, including the impact of foreign currency movements, are reflected in the income statement in the period the gain or loss was generated.

Net investment income includes interest, dividends and income from limited partnership interests and overseas deposits. Interest income is recognized based on the effective yield method which includes the amortization of premiums and accretion of discounts. The effective yield used to determine the amortization for fixed maturities subject to prepayment risk, such as mortgage-backed and asset-backed securities, is recalculated and adjusted periodically based upon actual historical and projected future cash flows. The adjustment to yields for highly rated prepayable fixed maturities are accounted for using the retrospective method. The adjustment to yields for all other prepayable fixed maturities are accounted for using the prospective method. Fixed maturities and mortgage participations that are delinquent are placed on non-accrual status, and thereafter interest income is recognized only when cash payments are received.

Realized investment gains and losses are reported as a component of revenues based upon specific identification of the investment assets sold. When an other-than-temporary decline in value of a specific investment is deemed to have occurred, and a charge to earnings is required, the Company recognizes a realized investment loss.

The Company reviews investments in an unrealized loss position to identify other-than-temporary declines in value. When it is determined that a decline in value of an equity security is other-than-temporary, the Company reduces the cost basis of the security to fair value with a corresponding charge to earnings. When an other-than-temporary decline in value of a debt security is deemed to have occurred, the Company must assess whether it intends to sell the security or more likely than not will be required to sell the security before recovery of its amortized cost basis. If the debt security meets either of these two criteria, an other-than-temporary impairment (“OTTI”) is recognized in earnings equal to the entire difference between the security’s amortized cost basis and its fair value at the impairment measurement date. If the Company does not intend to sell the debt security and it is not more likely than not the Company will be required to sell the security before recovery of its amortized cost basis, the credit loss portion of an OTTI is recorded through earnings while the portion attributable to all other factors is recorded separately as a component of other comprehensive income. The amount of the OTTI that relates to credit is estimated by comparing the amortized cost of the fixed maturity security with the net present value of the security’s projected future cash flows, discounted at the effective interest rate implicit in the investment prior to impairment. The non-credit portion of the impairment is equal to the difference between the fair value and the net present value of the security’s cash flows at the impairment measurement date. Once an OTTI has been recognized, the new amortized cost basis of the security is equal to the previous amortized cost less the amount of OTTI recognized in earnings. For equity method investments, an impairment is recognized when evidence demonstrates that an other-than-temporary loss in value has occurred, including the absence of the ability to recover the carrying amount of the investment or the inability of the investee to sustain a level of earnings that would justify the carrying amount of the investment.

### C. FINANCIAL INSTRUMENTS

In the normal course of business, the Company may enter into transactions involving various types of financial instruments, including debt, investments such as fixed maturities, equity securities and mortgage loans, investment and loan commitments, swap contracts, option contracts, forward contracts and futures contracts. These instruments involve credit risk and could also be subject to risk of loss due to interest rate and foreign currency fluctuation. The Company evaluates and monitors each financial instrument individually and, when appropriate, obtains collateral or other security to minimize losses.

### D. CASH AND CASH EQUIVALENTS

Cash and cash equivalents includes cash on hand, amounts due from banks and highly liquid debt instruments purchased with an original maturity of three months or less.

### E. DEFERRED ACQUISITION COSTS

Acquisition costs consist of commissions, underwriting costs and other costs, which vary with, and are primarily related to, the successful production of premiums. Acquisition costs are deferred and amortized over the terms of the insurance policies.

Deferred acquisition costs (“DAC”) for each operating segment are reviewed to determine if the costs are recoverable from future income, including investment income. If such costs are determined to be unrecoverable, they are expensed at the time of determination. Although recoverability of DAC is not assured, the Company believes it is more likely than not that all of these costs will be recovered. The amount of DAC considered recoverable, however, could be reduced in the near term if the estimates of total revenues discussed above are reduced or permanently impaired as a result of a disposition of a line of business. The amount of amortization of DAC could be revised in the near term if any of the estimates discussed above are revised.

### F. REINSURANCE RECOVERABLES

The Company shares certain insurance risks it has underwritten, through the use of reinsurance contracts, with various insurance entities. Reinsurance accounting is followed for ceded transactions when the risk transfer provisions of ASC 944, *Financial Services – Insurance* (“ASC 944”), have been met. As a result, when the Company experiences loss or claims events that are subject to a reinsurance contract, reinsurance recoverables are recorded. The amount of the reinsurance recoverable can vary based on the terms of the reinsurance contract, the size of the individual loss or claim, or the aggregate amount of all losses or claims in a particular line or book of business or an aggregate amount associated with a particular accident year. The valuation of losses or claims recoverable depends on whether the underlying loss or claim is a reported loss or claim, or an incurred but not reported loss. For reported losses and claims, the Company values reinsurance recoverables at the time the underlying loss or claim is recognized, in accordance with contract terms. For incurred but not reported losses, the Company estimates the amount of reinsurance recoverables based on the terms of the reinsurance contracts and historical reinsurance recovery information and applies that information to the gross loss reserve. Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability asso-



ciated with the reinsured business and the balance is disclosed separately in the financial statements. However, the ultimate amount of the reinsurance recoverable is not known until all losses and claims are settled. Allowances are established for amounts deemed uncollectible and reinsurance recoverables are recorded net of these allowances. The Company evaluates the financial condition of its reinsurers and monitors concentration risk to minimize its exposure to significant credit losses from individual reinsurers.

#### **G. PROPERTY, EQUIPMENT AND CAPITALIZED SOFTWARE**

Property, equipment, leasehold improvements and capitalized software are recorded at cost, less accumulated depreciation and amortization. Depreciation is generally provided using the straight-line method over the estimated useful lives of the related assets, which generally range from 3 to 30 years. The estimated useful life for capitalized software is generally 5 to 7 years. Amortization of leasehold improvements is provided using the straight-line method over the lesser of the term of the leases or the estimated useful life of the improvements.

The Company tests for the recoverability of long-lived assets whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable. The Company recognizes impairment losses only to the extent that the carrying amounts of long-lived assets exceed the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the assets. When an impairment loss occurs, the Company reduces the carrying value of the asset to fair value and no longer depreciates the asset. Fair values are estimated using discounted cash flow analysis.

#### **H. GOODWILL AND INTANGIBLE ASSETS**

In accordance with the provisions of ASC 350, *Intangibles-Goodwill and Other*, the Company carries its goodwill at cost, net of amortization accumulated prior to January 1, 2002, and net of impairments. Increases to goodwill are generated through acquisition and represent the excess of the cost of an acquisition over the fair value of net assets acquired, including any intangibles acquired. Since January 1, 2002, goodwill is no longer amortized but rather, is reviewed for impairment. Additionally, acquisitions can also produce intangible assets, which have either a definite or indefinite life. Intangible assets with definite lives are amortized over that life, whereas those intangible assets determined to have an indefinite life are reviewed at least annually for impairment.

The Company tests for the recoverability of goodwill and intangible assets with indefinite lives annually or whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable. The Company recognizes impairment losses only to the extent that the carrying amounts of reporting units with goodwill exceed the fair value. The amount of the impairment loss that is recognized is determined based upon the excess of the carrying value of goodwill compared to the implied fair value of the goodwill, as determined with respect to all assets and liabilities of the reporting unit. The Company has performed its annual review of goodwill and intangible assets with indefinite lives for impairment in the fourth quarters of 2016 and 2015 with no impairments recognized. At December 31, 2016 and 2015, Chaucer held intangible assets with indefinite lives of \$47.0 million and \$56.2 million, respectively, which represents approximately 76% and 74% of the Company's balance, respectively. In addition, at December 31, 2016 and 2015, goodwill held by Chaucer was \$6.0 million and \$7.2 million, respectively. The remaining balance relates to the U.S. Companies. The changes in the value of intangible assets with indefinite lives from December 31, 2015 represent foreign exchange differences arising during 2016 whereas the changes in the value of intangible assets with indefinite lives during 2015 were primarily related to the disposition of the U.K. motor business on June 30, 2015. See Note 2 – "Dispositions of Businesses".

#### **I. LIABILITIES FOR LOSSES, LAE, AND UNEARNED PREMIUMS**

Liabilities for outstanding claims, losses and loss adjustment expenses ("LAE") are estimates of payments to be made for reported losses and LAE and estimates of losses and LAE incurred but not reported. These liabilities are determined using case basis evaluations and statistical analyses of historical loss patterns and represent estimates of the ultimate cost of all losses incurred but not paid. These estimates are continually reviewed and adjusted as necessary; adjustments are reflected in current operations. Estimated amounts of salvage and subrogation on unpaid losses are deducted from the liability for unpaid claims.

Premiums for direct and assumed business are reported as earned on a pro-rata basis over the contract period. The unexpired portion of these premiums is recorded as unearned premiums.

All losses, LAE and unearned premium liabilities are based on the various estimates discussed above. Although the adequacy of these amounts cannot be assured, the

Company believes that it is more likely than not that these liabilities and accruals will be sufficient to meet future obligations of policies in force. The amount of liabilities and accruals, however, could be revised in the near-term if the estimates discussed above are revised.

#### **J. DEBT**

The Company's debt at December 31, 2016 includes senior debentures, subordinated debentures, and collateralized borrowings with the Federal Home Loan Bank of Boston ("FHLBB"). Debt instruments are carried at principal amount borrowed, net of any applicable unamortized discounts and issuance costs. See Note 6 – "Debt and Credit Arrangements".

#### **K. PREMIUM, PREMIUM RECEIVABLE, FEE REVENUE AND RELATED EXPENSES**

Insurance premiums written are generally recorded at the policy inception and are primarily earned on a pro-rata basis over the terms of the policies for all products. Premiums written include estimates, primarily in the Chaucer segment, that are derived from multiple sources, which include the historical experience of the underlying business, similar businesses and available industry information. These estimates are regularly reviewed and updated, and any resulting adjustments are included in the current year's results. Unearned premium reserves represent the portion of premiums written that relates to the unexpired terms of the underlying in-force insurance policies and reinsurance contracts. Premium receivables reflect the unpaid balance of premium written as of the balance sheet date. Premium receivables are generally short-term in nature and are reported net of an allowance for estimated uncollectible premium accounts. The Company reviews its receivables for collectability at the balance sheet date. The allowance for uncollectible accounts was not material as of December 31, 2016 and 2015. Ceded premiums are charged to income over the applicable term of the various reinsurance contracts with third-party reinsurers. Reinsurance reinstatement premiums, when required, are recognized in the same period as the loss event that gave rise to the reinstatement premiums. Losses and related expenses are matched with premiums, resulting in their recognition over the lives of the contracts. This matching is accomplished through estimated and unpaid losses and amortization of deferred acquisition costs.

#### **L. INCOME TAXES**

The Company is subject to the tax laws and regulations of the U.S. and foreign countries in which it operates. The Company files a consolidated U.S. federal income tax return that includes the holding company and its U.S. subsidiaries. Generally, taxes are accrued at the U.S. statutory tax rate of 35% for income from the U.S. operations. The Company's primary non-U.S. jurisdiction is the United Kingdom ("U.K."). In July 2013, the U.K. statutory rate decreased from 23% to 21% effective April 1, 2014 and from 21% to 20% effective April 1, 2015. In November 2015, the U.K. statutory tax rate decreased from 20% to 19% effective April 1, 2017 and from 19% to 18% effective April 1, 2020. A further decrease was enacted in September 2016 to reduce the U.K. statutory rate from 19% to 17%, instead of the 18%, effective April 1, 2020. The Company accrues taxes on certain non-U.S. income that is subject to U.S. tax at the U.S. tax rate. Foreign tax credits, where available, are utilized to offset U.S. tax as permitted. Certain non-U.S. income of the Company is not subject to U.S. tax until repatriated. Foreign taxes on this non-U.S. income are accrued at the local foreign rate and do not have an accrual for U.S. deferred taxes since these earnings are intended to be indefinitely reinvested overseas.

The Company's accounting for income taxes represents its best estimate of various events and transactions.

Deferred income taxes are generally recognized when assets and liabilities have different values for financial statement and tax reporting purposes, and for other temporary taxable and deductible differences as defined by ASC 740, Income Taxes ("ASC 740"). These temporary differences are measured at the balance sheet date using enacted tax rates expected to apply to taxable income in the years the temporary differences are expected to reverse. These differences result primarily from insurance reserves, deferred acquisition costs, tax credit carryforwards, employee benefit plans and deferred Lloyd's underwriting income.

The realization of deferred tax assets depends upon the existence of sufficient taxable income within the carryback or carryforward periods under the tax law in the applicable tax jurisdiction. Consideration is given to all available positive and negative evidence, including reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. Valuation allowances are established if, based on available information, it is determined that it is more likely than not that all or some portion of the deferred tax assets will not

be realized. Changes in valuation allowances are generally reflected in income tax expense or as an adjustment to other comprehensive income (loss) depending on the nature of the item for which the valuation allowance is being recorded.

#### **M. STOCK-BASED COMPENSATION**

The Company recognizes the fair value of compensation costs for all share-based payments, including employee stock options, in the financial statements. Unvested awards are generally expensed on a straight line basis, by tranche, over the vesting period of the award. The Company's stock-based compensation plans are discussed further in Note 11 – "Stock-Based Compensation Plans".

#### **N. EARNINGS PER SHARE**

Earnings per share ("EPS") for the years ended December 31, 2016, 2015 and 2014 is based on a weighted average of the number of shares outstanding during each year. Basic and diluted EPS is computed by dividing income available to common stockholders by the weighted average number of shares outstanding for the period. The weighted average shares outstanding used to calculate basic EPS differ from the weighted average shares outstanding used in the calculation of diluted EPS due to the effect of dilutive employee stock options, nonvested stock grants and other contingently issuable shares. If the effect of such items is antidilutive, the weighted average shares outstanding used to calculate diluted EPS are equal to those used to calculate basic EPS.

Options to purchase shares of common stock whose exercise prices are greater than the average market price of the common shares are not included in the computation of diluted earnings per share because the effect would be antidilutive.

#### **O. FOREIGN CURRENCY**

The Company's reporting currency is the U.S. dollar. The functional currencies of the Company's foreign operations are the U.K. pound sterling ("GBP"), U.S. dollar, and Canadian dollar. Assets and liabilities of foreign operations are translated into the U.S. dollar using the exchange rates in effect at the balance sheet date. Revenues and expenses of foreign operations are translated using the average exchange rate for the period. Gains or losses from translating the financial statements of foreign operations are recorded in the cumulative translation adjustment, as a separate component of accumulated other comprehensive income. Gains and losses arising from transactions denominated in a foreign currency, other than the Company's functional currencies, are included in net income (loss), except for the Company's foreign currency denominated

available-for-sale investments. The Company's foreign currency denominated available-for-sale investments' change in exchange rates between the local currency and the functional currency at each balance sheet date represents an unrealized appreciation or depreciation in value of these securities, and is included as a component of accumulated other comprehensive income.

The Company manages its exposure to foreign currency risk primarily by matching assets and liabilities denominated in the same currency. To the extent that assets and liabilities in foreign currencies are not matched, the Company is exposed to foreign currency risk. For functional currencies, the related exchange rate fluctuations are reflected in other comprehensive income (loss). The Company translated Chaucer's balance sheet at December 31, 2016 and 2015 from GBP to U.S. dollars using a conversion rate of 1.23 and 1.47, respectively. The Company recognized \$22.3 million in foreign currency transaction losses in the Consolidated Statements of Income during the year ended December 31, 2016, and \$8.5 million and \$3.3 million in foreign currency transaction gains for the years ended December 31, 2015 and 2014, respectively. These amounts include realized losses of Euro denominated securities of \$0.7 million, \$3.4 million, and \$1.3 million in 2016, 2015, and 2014, respectively.

#### **P. NEW ACCOUNTING PRONOUNCEMENTS**

##### **Recently Implemented Standards**

In May 2015, the Financial Accounting Standards Board ("FASB") issued ASC Update No. 2015-09, (Topic 944) *Financial Services- Insurance: Disclosures about Short-Duration Contracts*. This ASC update requires several additional disclosures regarding short-duration insurance contracts, including; disaggregated incurred and paid claims development information, quantitative and qualitative information about claim frequency and duration, and the sum of incurred but not reported liabilities plus expected development on reported claims included in the liability for unpaid claims and claim adjustment expenses along with a description of reserving methodologies. This information is required to be presented by accident year, for the number of years for which claims typically remain outstanding, but need not exceed 10 years. A reconciliation of the claims development disclosures to the aggregate carrying amount of the liability for unpaid claims and claim adjustment expenses, including a separate disclosure for reinsurance recoverables is also required for each period presented in the statement of financial position. In addition, this ASC update requires insurance entities to dis-

close information about significant changes in methodologies and assumptions used to calculate the liability for unpaid claims and claim adjustment expenses, including reasons for the change and the effects on the financial statements. The updated guidance is effective for annual periods beginning after December 15, 2015, and interim periods within annual periods beginning after December 15, 2016. Early adoption is permitted. The Company implemented this guidance beginning with its disclosures for the year ended December 31, 2016. The effect of implementing this guidance was not material to the Company's financial position or results of operations, as the update is disclosure related.

In April 2015, the FASB issued ASC Update No. 2015-03, (Subtopic 835-30) *Interest-Imputation of Interest: Simplifying the Presentation of Debt Issuance Costs*. This ASC update requires that debt issuance costs be presented in the balance sheet as a direct deduction from the carrying amount of a debt liability, consistent with debt discounts or premiums, and amortization of debt issuance cost shall be reported as interest expense. The recognition and measurement guidance for debt issuance costs are not affected by the amendments in this ASC update. The updated guidance is to be applied on a retrospective basis and early adoption is permitted. The update is effective for financial statements issued for fiscal years beginning after December 15, 2015, and interim periods within those fiscal years. The Company implemented this guidance effective January 1, 2016. The effect of implementing this guidance was not material to the Company's financial position or results of operations.

In August 2014, the FASB issued ASC Update No. 2014-15, (Subtopic 205-40) *Presentation of Financial Statements – Going Concern*. This ASC update provides guidance on determining when and how to disclose going concern uncertainties in the financial statements, and requires management to perform interim and annual assessments of an entity's ability to continue as a going concern within one year of the date the financial statements are issued. The updated guidance is effective for annual periods ending after December 15, 2016 and interim periods thereafter. Early adoption is permitted. The Company implemented this guidance beginning with the year-ended December 31, 2016. The effect of implementing this guidance was not material to the Company's financial position or results of operations.

In April 2014, the FASB issued ASC Update No. 2014-08, (Topic 205 and Topic 360) *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*. This ASC update modifies the definition of dis-

continued operations by limiting discontinued operations reporting to disposals of components of an entity that represent strategic shifts that have (or will have) a major effect on an entity's operations and financial results. Also, this update requires additional financial statement disclosures about discontinued operations, as well as disposals of an individually significant component of an entity that do not qualify for discontinued operations presentation. This ASC update was effective for all disposals (or classifications as held for sale) of components of an entity that occurred within annual and interim periods beginning on or after December 15, 2014 and for all businesses that, on acquisition, were classified as held for sale that also occurred within interim and annual periods beginning on or after December 15, 2014. The Company implemented this guidance effective January 1, 2015. The effect of implementing this guidance was not material to the Company's financial position or results of operations.

#### Recently Issued Standards

In January 2017, the FASB issued ASC Update No. 2017-04, (Topic 350) *Intangibles – Goodwill and Other: Simplifying the Test for Goodwill Impairment*. This guidance eliminates step 2 from the goodwill impairment test. Instead, an entity should perform its goodwill impairment test by comparing the fair value of the reporting unit with its carrying amount, including any applicable income tax effects, and recognize an impairment for the amount by which the carrying amount exceeds the reporting unit's fair value. However, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The updated guidance is effective for annual or interim goodwill impairment tests performed in fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The Company does not expect the adoption of ASC Update No. 2017-04 to have a material impact on its financial position or results of operations.

In January 2017, the FASB issued ASC Update No. 2017-01, (Topic 805) *Business Combinations – Clarifying the Definition of a Business*. The amendments in this update provide a more robust framework to use in determining when a set of assets and activities constitute a business. This guidance narrows the definition of a business by providing specific requirements that contribute to the creation of outputs that must be present to be considered a business. The guidance further clarifies the appropriate accounting when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a



single identifiable asset or a group of similar identifiable assets is that of an acquisition (disposition) of assets, not a business. This framework will reduce the number of transactions that an entity must further evaluate to determine whether transactions are business combinations or asset acquisitions. The updated guidance is effective for interim and annual periods beginning after December 15, 2017, and should be applied on a prospective basis. Early adoption is permitted only for transactions that have not been reported in financial statements that have been issued. The Company does not expect the adoption of ASC Update No. 2017-01 to have a material impact on its financial position or results of operations.

In November 2016, the FASB issued ASC Update No. 2016-18 (Topic 230) *Statement of Cash Flows – Restricted Cash (a consensus of the FASB Emerging Issues Task Force)*. The amendments in this update require that restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. Current GAAP does not include specific guidance on the cash flow classification and presentation of changes in restricted cash. The updated guidance is effective for interim and annual periods beginning after December 15, 2017 and is required to be applied using a retrospective transition method to each period presented. Early adoption is permitted, including adoption in an interim period. However, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period. Implementing this guidance is not expected to have a significant impact on the Company's statement of cash flows, as restricted cash, if any, is currently included in total cash and cash equivalents.

In October 2016, the FASB issued ASC Update No. 2016-16, (Topic 740) *Income Taxes – Intra-Entity Transfers of Assets Other Than Inventory*. Under current GAAP, the tax effects of intra-entity transfers of assets (intercompany sales) are deferred until the assets are sold to an outside party or otherwise recovered through use. This ASC update eliminates this deferral of taxes for assets other than inventory and requires the recognition of taxes when the transfer occurs. The updated guidance is effective for interim and annual periods beginning after December 15, 2017, and should be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings. Early adoption is permitted, but this election must be made in the first interim period of the adoption year. The adoption of ASC Update No. 2016-16 is not expected to have any net impact on the Company's financial position or results of operations.

In August 2016, the FASB issued ASC Update No. 2016-15, (Topic 230) *Classification of Certain Cash Receipts and Cash Payments*. This ASC update provides specific guidance on the presentation of certain cash flow items where there is currently diversity in practice, including, but not limited to, debt prepayment or debt extinguishment costs, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, and distributions received from equity method investees. The updated guidance is effective for interim and annual periods beginning after December 15, 2017, and should be applied retrospectively unless impracticable. Early adoption is permitted. The Company is currently evaluating the impact of the adoption of ASC Update No. 2016-15.

In June 2016, the FASB issued ASC Update No. 2016-13, (Topic 326) *Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Instruments*. This ASC update introduces new guidance for the accounting for credit losses on financial instruments within its scope. A new model, referred to as the current expected credit losses model, requires an entity to determine credit-related impairment losses for financial instruments held at amortized cost and to estimate these expected credit losses over the life of an exposure (or pool of exposures). The estimate of expected credit losses should consider both historical and current information, reasonable and supportable forecasts, as well as estimates of prepayments. The estimated credit losses and subsequent adjustment to such loss estimates, will be recorded through an allowance account which is deducted from the amortized cost of the financial instrument, with the offset recorded in current earnings. ASC No. 2016-13 also modifies the impairment model for available-for-sale debt securities. The new model will require an estimate of expected credit losses only when the fair value is below the amortized cost of the asset, thus the length of time the fair value of an available-for-sale debt security has been below the amortized cost will no longer affect the determination of whether a credit loss exists. In addition, credit losses on available-for-sale debt securities will be limited to the difference between the security's amortized cost basis and its fair value. The updated guidance is effective for interim and annual periods beginning after December 15, 2019. Early adoption is permitted for periods beginning after December 15, 2018. The Company is evaluating the impact of the adoption of ASC Update No. 2016-13 on its financial position and results of operations.

In March 2016, the FASB issued ASC Update No. 2016-09, (Topic 718) *Compensation – Stock Compensation: Improvements to Employee Share-Based Payment Accounting*.



This ASC update requires all excess tax benefits and tax deficiencies to be recognized as income tax expense or benefit in the income statement, and be treated as discreet items in the reporting period in which they occur. Additionally, excess tax benefits will be classified with other income tax cash flows as an operating activity and cash paid by an employer when directly withholding shares for tax withholding purposes will be classified as a financing activity. Awards that are used to settle employee tax liabilities will be allowed to qualify for equity classification for withholdings up to the maximum statutory tax rates in applicable jurisdictions. Regarding forfeitures, a company can make an entity-wide accounting policy election to either continue estimating the number of awards that are expected to vest or account for forfeitures when they occur. The updated guidance is effective for interim and annual periods beginning after December 15, 2016. The Company will adopt this standard effective January 1, 2017 and will retain its current forfeiture policy of accruing the compensation cost based on the number of awards that are expected to vest. The effect this guidance will have on the Company's results of operations is dependent on the future tax benefits or deficiencies that are recognized related to stock-based compensations awards, and could be material in any one quarterly or annual period. The adoption of this guidance is not expected to result in any cumulative effect adjustments and will not have a material impact on the liquidity of the Company.

In February 2016, the FASB issued ASC Update No. 2016-02, (Topic 842) *Leases*. This ASC update requires a lessee to recognize a right-of-use asset, which represents the lessee's right to use a specified asset for the lease term, and a corresponding lease liability, which represents a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis, for all leases that extend beyond 12 months. For finance or capital leases, interest on the lease liability will be recognized separately from amortization of the right-of-use asset in the statements of income and comprehensive income. In addition, the repayment of the principal portion of the lease liability will be classified as a financing activity while the interest component will be included in the operating section of the statement of cash flows. For operating leases, the asset and liability will be amortized as a single lease cost, such that the cost of the lease is allocated over the lease term, on a generally straight-line basis, with all cash flows included within operating activities in the statement of cash flows. The updated guidance is effective for interim and annual periods beginning after December 15, 2018 and is required to be implemented by applying a modified retrospective transition approach. The Company is continuing

to evaluate the impact of the adoption of ASC Update No. 2016-02 on its results of operations. It is expected that assets and liabilities will increase based on the present value of remaining lease payments for leases in place at the adoption date; however, the impact is not expected to be significant to the Company's financial position.

In January 2016, the FASB issued ASC Update No. 2016-01, (Subtopic 825-10) *Financial Instruments – Overall: Recognition and Measurement of Financial Assets and Financial Liabilities*. This ASC update requires unconsolidated equity investments to be measured at fair value with changes in the fair value recognized in net income, except for those accounted for under the equity method. This update eliminates the cost method for equity investments without readily determinable fair values and replaces with other methods, including the use of Net Asset Value ("NAV"). Additionally, when a public entity is required to measure fair value for disclosure purposes and holds financial instruments measured at amortized cost, the updated guidance requires these instruments to be measured using exit price. It also requires financial assets and financial liabilities to be presented separately in the notes to the financial statements, grouped by measurement category and form of financial asset. The updated guidance is effective for annual periods beginning after December 15, 2017. The Company will adopt the guidance effective January 1, 2018 through a cumulative effect adjustment to retained earnings. The adoption is not expected to have a material impact on the Company's financial position. The impact to the Company is expected to be increased volatility in net income beginning in 2018; the magnitude of such volatility will depend on the composition of the Company's investment portfolio in the future and changes in the fair value of the Company's investments.

In May 2014, the FASB issued ASC Update No. 2014-09, (Topic 606) *Revenue from Contracts with Customers*. This ASC was issued to clarify the principles for recognizing revenue. Insurance contracts and financial instrument transactions are not within the scope of this updated guidance, and; therefore, only an insignificant amount of the Company's revenue is subject to this updated guidance. In August 2015, the FASB issued ASC Update No. 2015-14, (Topic 606) *Revenue from Contracts with Customers*, which deferred the effective date of ASC Update No. 2014-09 by one year. Accordingly, the updated guidance is effective for periods beginning after December 15, 2017 and is not expected to have a material effect on the Company's financial position or results of operations.

#### Q. RECLASSIFICATIONS

Certain prior year amounts have been reclassified to conform to the current year presentation.

## 2. DISPOSITIONS OF BUSINESSES

### Disposal of U.K. Motor Business

Effective June 30, 2015, the Company transferred its U.K. motor business to an unaffiliated U.K.-based insurance provider. The transaction was executed through a 100 percent reinsurance arrangement for prior claim liabilities and in-force policies written by this division and the sale of two entities associated with this business. Total consideration from the sale of the Chaucer subsidiaries was \$64.9 million and the transaction resulted in a net gain of \$40.6 million.

The components of the gain are as follows:

(in millions)	
Total consideration	\$ 64.9
Less:	
Carrying value of subsidiaries	(7.6)
Intangibles and goodwill disposed <sup>(1)</sup>	(17.7)
Transaction expenses and employee-related and other costs <sup>(2)</sup>	(7.7)
Realized gain on investments transferred as part of reinsurance agreement <sup>(3)</sup>	5.8
Other items	0.7
Pre-tax gain	38.4
Income tax benefit	2.2
Net gain	\$ 40.6

(1) Reflects \$17.2 million of indefinite-lived intangible assets associated with the U.K. motor business upon THG's purchase of Chaucer in July 2011 and \$0.5 million of goodwill.

(2) Transaction costs include legal, actuarial and other professional fees.

(3) As part of the reinsurance agreement, investments were transferred, resulting in the recognition of net realized investment gains that were previously reflected in accumulated other comprehensive income.

In connection with the reinsurance arrangement, insurance liabilities of approximately \$443 million were ceded, including \$137.4 million of written premiums, and approximately \$419 million of investments, cash, and premiums receivable were transferred. The \$25 million difference between assets and liabilities approximates the DAC balance associated with this business.

### Discontinued Operations

Discontinued operations primarily consist of the Company's former life insurance businesses, which were sold prior to 2009, and its discontinued accident and health business.

The Company's former life insurance businesses include indemnity obligations for which it established reserves.

During 1999, the Company exited its accident and health insurance business, consisting of its Employee Benefit Services business, its Affinity Group Underwriters business and its accident and health assumed reinsurance pool business. Prior to 1999, these businesses comprised substantially all of the former Corporate Risk Management Services segment. Accordingly, the operating results of the discontinued segment have been reported in accordance with Accounting Principles Board Opinion No. 30, *Reporting the Results of Operations—Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions* ("APB Opinion No. 30"). On January 2, 2009, Hanover Insurance directly assumed a portion of the accident and health business; and therefore continues to apply APB Opinion No. 30 to this business. In addition, the remainder of the Discontinued First Allmerica Financial Life Insurance Company ("FAFLIC") accident and health business was reinsured by Hanover Insurance in connection with the sale of FAFLIC to Commonwealth Annuity, and has been reported in accordance with ASC 205, *Presentation of Financial Statements*.

At December 31, 2016 and 2015, the portion of the discontinued accident and health business that was directly assumed had assets of \$57.6 million and \$54.5 million, respectively, consisting primarily of invested assets, and liabilities of \$49.3 million and \$46.5 million, respectively, consisting primarily of policy liabilities. At December 31, 2016 and 2015, the assets and liabilities of this business, as well as those of the reinsured portion of the accident and health business are classified as assets and liabilities of discontinued operations in the Consolidated Balance Sheets.

Discontinued operations for the years ended December 31, 2016, 2015 and 2014 resulted in losses of \$1.0 million, gains of \$0.7 million and losses of \$0.3 million, respectively, net of tax.

### 3. INVESTMENTS

#### A. FIXED MATURITIES AND EQUITY SECURITIES

The amortized cost and fair value of available-for-sale fixed maturities and the cost and fair value of equity securities were as follows:

DECEMBER 31, 2016

(in millions)

	Amortized Cost or Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	OTTI Unrealized Losses
Fixed maturities:					
U.S. Treasury and government agencies	\$ 342.5	\$ 3.7	\$ 5.1	\$ 341.1	\$ —
Foreign government	235.8	5.4	0.5	240.7	—
Municipal	1,065.8	38.8	9.2	1,095.4	—
Corporate	3,989.8	113.0	49.0	4,053.8	15.8
Residential mortgage-backed	978.2	9.6	13.6	974.2	0.4
Commercial mortgage-backed	550.6	7.8	4.1	554.3	—
Asset-backed	72.4	0.2	0.8	71.8	—
Total fixed maturities	\$ 7,235.1	\$ 178.5	\$ 82.3	\$ 7,331.3	\$ 16.2
Equity securities	\$ 498.4	\$ 86.7	\$ 0.7	\$ 584.4	\$ —

DECEMBER 31, 2015

(in millions)

	Amortized Cost or Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	OTTI Unrealized Losses
Fixed maturities:					
U.S. Treasury and government agencies	\$ 447.1	\$ 5.5	\$ 3.5	\$ 449.1	\$ —
Foreign government	244.7	2.6	1.5	245.8	—
Municipal	1,074.5	50.0	4.2	1,120.3	—
Corporate	3,699.9	86.8	95.7	3,691.0	27.5
Residential mortgage-backed	887.6	13.4	4.9	896.1	0.3
Commercial mortgage-backed	499.6	5.8	4.3	501.1	—
Asset-backed	80.6	0.2	0.8	80.0	—
Total fixed maturities	\$ 6,934.0	\$ 164.3	\$ 114.9	\$ 6,983.4	\$ 27.8
Equity securities	\$ 528.5	\$ 55.7	\$ 7.6	\$ 576.6	\$ —

OTTI unrealized losses in the tables above represent OTTI recognized in accumulated other comprehensive income. This amount excludes net unrealized gains on impaired securities relating to changes in the value of such securities subsequent to the impairment measurement date of \$21.4 million and \$1.1 million as of December 31, 2016 and 2015, respectively.

The Company participates in a security lending program for the purpose of enhancing income. Securities on loan to

various counterparties had a fair value of \$29.9 million and \$36.2 million at December 31, 2016 and 2015, respectively, and were fully collateralized by cash. The fair value of the loaned securities is monitored on a daily basis, and the collateral is maintained at a level of at least 102% of the fair value of the loaned securities. Securities lending collateral is recorded by the Company in cash and cash equivalents, with an offsetting liability included in expenses and taxes payable.

At December 31, 2016 and 2015, fixed maturities with fair values of \$251.6 million and \$217.4 million, respectively, and amortized cost of \$238.5 million and \$206.5 million, respectively, were on deposit with various state and governmental authorities.

In accordance with Lloyd's operating guidelines, the Company deposits funds at Lloyd's to support underwriting operations. These funds are available only to fund claim obligations. At December 31, 2016 and 2015, fixed maturities with a fair value of \$491.2 million and \$440.6 million, respectively, and cash of \$6.3 million and \$7.0 million, respectively, were on deposit with Lloyd's.

The Company enters into various agreements that may require its fixed maturities to be held as collateral by others. At December 31, 2016 and 2015, fixed maturities with a fair value of \$217.9 million and \$188.1 million, respectively, were held as collateral for collateralized borrowings and other arrangements. Of these amounts, \$201.8 million and \$176.0 million related to the FHLBB collateralized borrowing program at December 31, 2016 and 2015, respectively. See Note 6 – "Debt and Credit Arrangements" for additional information related to the Company's FHLBB program.

The amortized cost and fair value by maturity periods for fixed maturities are shown below. Actual maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties, or the Company may have the right to put or sell the obligations back to the issuers.

DECEMBER 31	2016	
(in millions)	Amortized Cost	Fair Value
Due in one year or less	\$ 373.3	\$ 376.9
Due after one year through five years	3,132.1	3,217.4
Due after five years through ten years	1,806.1	1,802.1
Due after ten years	322.4	334.6
	5,633.9	5,731.0
Mortgage-backed and asset-backed securities	1,601.2	1,600.3
Total fixed maturities	\$7,235.1	\$ 7,331.3

## B. UNREALIZED GAINS AND LOSSES

Unrealized gains and losses on available-for-sale and other securities are summarized in the following table.

YEARS ENDED DECEMBER 31			
(in millions)	Fixed Maturities	Equity Securities and Other	Total
2016			
Net appreciation, beginning of year	\$ 116.5	\$ 33.4	\$ 149.9
Net appreciation on available-for-sale securities	36.9	39.2	76.1
Change in OTTI losses recognized in other comprehensive income	11.2	—	11.2
Provision for deferred income taxes	(37.5)	(13.7)	(51.2)
	10.6	25.5	36.1
Net appreciation, end of year	\$ 127.1	\$ 58.9	\$ 186.0
2015			
Net appreciation, beginning of year	\$ 250.0	\$ 50.9	\$ 300.9
Net depreciation on available-for-sale securities	(164.9)	(26.8)	(191.7)
Change in OTTI losses recognized in other comprehensive income	(20.0)	—	(20.0)
Provision for deferred income taxes	51.4	9.3	60.7
	(133.5)	(17.5)	(151.0)
Net appreciation, end of year	\$ 116.5	\$ 33.4	\$ 149.9
2014			
Net appreciation, beginning of year	\$ 212.1	\$ 47.2	\$ 259.3
Net appreciation on available-for-sale securities	76.3	10.2	86.5
Change in OTTI losses recognized in other comprehensive income	2.4	—	2.4
Provision for deferred income taxes	(40.8)	(6.5)	(47.3)
	37.9	3.7	41.6
Net appreciation, end of year	\$ 250.0	\$ 50.9	\$ 300.9

Equity securities and other balances at December 31, 2016, 2015 and 2014 include after-tax net appreciation on other invested assets of \$2.5 million, \$2.2 million and \$2.6 million, respectively.

### C. SECURITIES IN AN UNREALIZED LOSS POSITION

The following tables provide information about the Company's fixed maturities and equity securities that were in an unrealized loss position at December 31, 2016 and 2015 including the length of time the securities have been in an unrealized loss position:

DECEMBER 31, 2016

(in millions)

	12 months or less		Greater than 12 months		Total	
	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value
Fixed maturities:						
Investment grade:						
U.S. Treasury and government agencies	\$ 5.1	\$ 165.9	\$ —	\$ —	\$ 5.1	\$ 165.9
Foreign governments	0.5	55.0	—	1.8	0.5	56.8
Municipal	7.2	268.4	2.0	29.3	9.2	297.7
Corporate	30.6	1,081.0	5.0	64.2	35.6	1,145.2
Residential mortgage-backed	12.1	570.0	1.5	29.0	13.6	599.0
Commercial mortgage-backed	4.1	187.5	—	6.3	4.1	193.8
Asset-backed	0.6	29.1	0.2	3.5	0.8	32.6
Total investment grade	60.2	2,356.9	8.7	134.1	68.9	2,491.0
Below investment grade:						
Corporate	1.2	45.9	12.2	81.8	13.4	127.7
Residential mortgage-backed	—	0.1	—	—	—	0.1
Total below investment grade	1.2	46.0	12.2	81.8	13.4	127.8
Total fixed maturities	61.4	2,402.9	20.9	215.9	82.3	2,618.8
Equity securities	0.7	16.3	—	—	0.7	16.3
Total	\$ 62.1	\$ 2,419.2	\$ 20.9	\$ 215.9	\$ 83.0	\$ 2,635.1

DECEMBER 31, 2015

(in millions)

	12 months or less		Greater than 12 months		Total	
	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value
Fixed maturities:						
Investment grade:						
U.S. Treasury and government agencies	\$ 1.5	\$ 139.0	\$ 2.0	\$ 77.2	\$ 3.5	\$ 216.2
Foreign governments	0.8	63.6	0.7	8.4	1.5	72.0
Municipal	2.3	143.0	1.9	57.4	4.2	200.4
Corporate	30.7	1,138.3	18.9	122.3	49.6	1,260.6
Residential mortgage-backed	3.0	334.5	1.9	47.0	4.9	381.5
Commercial mortgage-backed	4.2	293.8	0.1	9.7	4.3	303.5
Asset-backed	0.8	56.6	—	1.4	0.8	58.0
Total investment grade	43.3	2,168.8	25.5	323.4	68.8	2,492.2
Below investment grade:						
Corporate	19.6	165.5	26.5	63.2	46.1	228.7
Total fixed maturities	62.9	2,334.3	52.0	386.6	114.9	2,720.9
Equity securities	7.6	166.8	—	—	7.6	166.8
Total	\$ 70.5	\$ 2,501.1	\$ 52.0	\$ 386.6	\$ 122.5	\$ 2,887.7



The Company views gross unrealized losses on fixed maturities and equity securities as being temporary since it is its assessment that these securities will recover in the near term, allowing the Company to realize the anticipated long-term economic value. The Company employs a systematic methodology to evaluate declines in fair value below amortized cost for fixed maturity securities or cost for equity securities. In determining OTTI of fixed maturity and equity securities, the Company evaluates several factors and circumstances, including the issuer's overall financial condition; the issuer's credit and financial strength ratings; the issuer's financial performance, including earnings trends, dividend payments and asset quality; any specific events which may influence the operations of the issuer; the general outlook for market conditions in the industry or geographic region in which the issuer operates; and the length of time and the degree to which the fair value of an issuer's securities remains below the Company's cost. With respect to fixed maturity investments, the Company considers any factors that might raise doubt about the issuer's ability to make contractual payments as they come due and whether the Company expects to recover the entire amortized cost basis of the security. With respect to equity securities, the Company considers its ability and intent to hold the investment for a period of time to allow for a recovery in value.

#### D. OTHER INVESTMENTS

The Company's mortgage participations were \$297.6 million and \$200.9 million at December 31, 2016 and 2015, respectively. Participating interests in commercial mortgage loans are originated and serviced by a third-party. For these investments, the Company shares, on a pro-rata basis, in all related cash flows of the underlying mortgages. Mortgage participations were comprised of the following property types and geographic locations.

DECEMBER 31	2016	2015
(in millions)		
Property Type:		
Office	\$ 109.8	\$ 75.0
Retail	64.7	58.8
Hotel	40.4	19.2
Apartments	38.4	33.4
Industrial	30.0	15.0
Mixed use	15.0	—
Valuation allowance	(0.7)	(0.5)
Total	\$ 297.6	\$ 200.9

DECEMBER 31	2016	2015
(in millions)		
Geographic Region:		
South Atlantic	\$ 72.0	\$ 47.0
Pacific	65.0	50.0
Mid-Atlantic	53.5	23.6
West South Central	51.3	35.0
New England	21.1	10.0
East North Central	10.4	10.8
West North Central	10.0	10.0
Other	15.0	15.0
Valuation allowance	(0.7)	(0.5)
Total	\$ 297.6	\$ 200.9

At December 31, 2016, scheduled maturities of mortgage participations were as follows: due in 2017 - \$0.5 million; 2020 - \$10.0 million; 2021 - \$50.0 million and thereafter - \$237.1 million. There were no scheduled loan maturities in 2018 or 2019. Actual maturities could differ from contractual maturities because borrowers may have the right to prepay obligations with or without prepayment penalties and loans may be refinanced. During 2016, the Company did not refinance any loans based on terms that differed from current market rates.

Other investments also include interests in limited partnerships and overseas deposits of \$121.3 million and \$102.2 million, respectively, at December 31, 2016, and \$79.9 million and \$100.9 million, respectively, at December 31, 2015.

#### E. OTHER

At December 31, 2016, the Company had no concentration of investments in a single investee that exceeded 10% of shareholders' equity except for fixed maturities invested in Federal Home Loan Mortgage Corp. ("FHLMC") and mortgage participations with a highly rated single third-party. At December 31, 2016, the Company held FHLMC with fair value of \$542.2 million and mortgage participations with a carrying value of \$295.9 million. At December 31, 2015, the Company had no concentration of investments in a single investee that exceeds 10% of shareholders' equity except for fixed maturities invested in FHLMC and Federal National Mortgage Association ("FNMA"). At December 31, 2015, the Company held FHLMC and FNMA with fair values of \$467.9 million and \$298.1 million, respectively.

At December 31, 2016, there were contractual investment commitments of up to \$128.8 million.

#### 4. INVESTMENT INCOME AND GAINS AND LOSSES

##### A. NET INVESTMENT INCOME

The components of net investment income were as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Fixed maturities	\$ 245.1	\$ 253.8	\$ 255.8
Equity securities	18.6	17.5	16.5
Other investments	26.7	18.1	9.0
Gross investment income	290.4	289.4	281.3
Less investment expenses	(11.0)	(10.3)	(11.0)
Net investment income	\$ 279.4	\$ 279.1	\$ 270.3

The carrying values of fixed maturity securities on non-accrual status at December 31, 2016 and 2015 were not material. The effects of non-accruals for the years ended December 31, 2016, 2015 and 2014, compared with amounts of net investment income that would have been recognized in accordance with the original terms of the fixed maturities, were reductions of \$1.1 million, \$0.8 million and \$2.1 million, respectively.

##### B. NET REALIZED INVESTMENT GAINS AND LOSSES

Net realized gains (losses) on investments were as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Equity securities	\$ 25.4	\$ 29.4	\$ 45.8
Fixed maturities	(16.6)	(13.9)	4.5
Other investments	(0.2)	4.0	(0.2)
Net realized investment gains	\$ 8.6	\$ 19.5	\$ 50.1

Included in the net realized investment gains (losses) were OTTI of investment securities recognized in earnings totaling \$27.9 million, \$26.8 million and \$5.5 million in 2016, 2015 and 2014, respectively.

##### Other-than-temporary-impairments

For 2016, total OTTI was \$21.2 million. Of this amount, \$27.9 million was recognized in earnings including \$6.7 million which was transferred from unrealized losses in accumulated other comprehensive income ("AOCI"). The \$27.9 million of OTTI recognized in earnings relates primarily to \$16.1 million of fixed maturity securities that the Company intended to sell, \$8.8 million of credit impairments and \$2.7 million of equities.

For 2015, total OTTI was \$49.5 million. Of this amount, \$26.8 million was recognized in earnings and the remaining \$22.7 million was recorded as unrealized losses in AOCI. The \$26.8 million of OTTI recognized in earnings relates to \$16.0 million of credit impairments, \$4.0 million of fixed maturity securities that the Company intended to sell and \$6.8 million of equities.

For 2014, total OTTI was \$5.4 million. Of this amount, \$5.5 million was recognized in earnings including \$0.1 million which was transferred from unrealized losses in AOCI. The \$5.5 million of OTTI recognized in earnings was related to fixed maturity securities that the Company intended to sell.

The methodology and significant inputs used to measure the amount of credit losses on fixed maturities in 2016 and 2015 were as follows:

Corporate bonds - the Company utilized a financial model that derives expected cash flows based on probability-of-default factors by credit rating and asset duration and loss-given-default factors based on security type. These factors are based on historical data provided by an independent third-party rating agency. In addition, other market data relevant to the realizability of contractual cash flows may be considered.

There were no credit impairments in 2014.

The following table provides rollforwards of the cumulative amounts related to the Company's credit loss portion of the OTTI losses on fixed maturity securities for which the non-credit portion of the loss is included in other comprehensive income.

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Credit losses as of the beginning of the year	\$ 18.0	\$ 4.2	\$ 7.8
Credit losses on securities for which an OTTI was not previously recognized	6.4	8.3	—
Additional credit losses on securities for which an OTTI was previously recognized	2.4	7.7	—
Reductions for securities sold, matured or called	(4.6)	(1.8)	(3.2)
Reductions for securities reclassified as intend to sell	(12.2)	(0.4)	(0.4)
Credit losses as of the end of the year	\$ 10.0	\$ 18.0	\$ 4.2

The proceeds from sales of available-for-sale securities and the gross realized gains and gross realized losses on those sales, were as follows:

YEARS ENDED DECEMBER 31

(in millions)

	Proceeds from Sales	Gross Gains	Gross Losses
2016			
Fixed maturities	\$ 563.8	\$ 11.7	\$ 7.0
Equity securities	\$ 245.0	\$ 31.1	\$ 3.0
2015			
Fixed maturities	\$ 1,167.6	\$ 15.0	\$ 9.3
Equity securities	\$ 270.0	\$ 36.9	\$ 4.2
2014			
Fixed maturities	\$ 349.5	\$ 5.8	\$ 2.6
Equity securities	\$ 156.1	\$ 46.2	\$ 0.8

Proceeds from sales of fixed maturities in 2015 included proceeds of \$379.6 million from the transfer of fixed maturity investments in connection with the disposal of the U.K. motor business and related gross gains of \$6.4 million and gross losses of \$0.6 million.

## 5. FAIR VALUE

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability, i.e., exit price, in an orderly transaction between market participants. The Company emphasizes the use of observable market data whenever available in determining fair value. Fair values presented for certain financial instruments are estimates which, in many cases, may differ significantly from the amounts that could be realized upon immediate liquidation. A hierarchy of the three broad levels of fair value are as follows, with the highest priority given to Level 1 as these are the most observable, and the lowest priority given to Level 3:

Level 1 – Unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 – Quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data, including model-derived valuations.

Level 3 – Unobservable inputs that are supported by little or no market activity.

When more than one level of input is used to determine fair value, the financial instrument is classified as Level 2 or 3 according to the lowest level input that has a significant impact on the fair value measurement.

The following methods and assumptions were used to estimate the fair value of each class of financial instruments and have not changed since last year.

### CASH AND CASH EQUIVALENTS

The carrying amount approximates fair value. Cash equivalents primarily consist of money market instruments, which are generally valued using unadjusted quoted prices in active markets that are accessible for identical assets and are classified as Level 1.

### FIXED MATURITIES

Level 1 securities generally include U.S. Treasury issues and other securities that are highly liquid and for which quoted market prices are available. Level 2 securities are valued using pricing for similar securities and pricing models that incorporate observable inputs including, but not limited to yield curves and issuer spreads. Level 3 securities include issues for which little observable data can be obtained, primarily due to the illiquid nature of the securities, and for which significant inputs used to determine fair value are based on the Company's own assumptions. Non-binding broker quotes are also included in Level 3.

The Company utilizes a third-party pricing service for the valuation of the majority of its fixed maturity securities and receives one quote per security. When quoted market prices in an active market are available, they are provided by the pricing service as the fair value and such values are classified as Level 1. 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 for those securities using pricing applications based on a market approach. Inputs into the fair value pricing common to all asset classes include: benchmark U.S. Treasury security yield curves; reported trades of identical or similar fixed maturity securities; broker/dealer quotes of identical or similar fixed maturity securities and structural characteristics such as maturity date, coupon, mandatory principal payment dates, frequency of interest and principal payments, and optional redemption features. Inputs into the fair value applications that are unique by asset class include, but are not limited to:

- U.S. government agencies – determination of direct versus indirect government support and whether any contingencies exist with respect to the timely payment of principal and interest.

- Foreign government – estimates of appropriate market spread versus underlying related sovereign treasury curve(s) dependent on liquidity and direct or contingent support.
- Municipals – overall credit quality, including assessments of the level and variability of: sources of payment such as income, sales or property taxes, levies or user fees; credit support such as insurance; state or local economic and political base; natural resource availability; and susceptibility to natural or man-made catastrophic events such as hurricanes, earthquakes or acts of terrorism.
- Corporate fixed maturities – overall credit quality, including assessments of the level and variability of: economic sensitivity; liquidity; corporate financial policies; management quality; regulatory environment; competitive position; ownership; restrictive covenants; and security or collateral.
- Residential mortgage-backed securities – estimates of prepayment speeds based upon: historical prepayment rate trends; underlying collateral interest rates; geographic concentration; vintage year; borrower credit quality characteristics; interest rate and yield curve forecasts; government or monetary authority support programs; tax policies; delinquency/default trends; and, in the case of non-agency collateralized mortgage obligations, severity of loss upon default and length of time to recover proceeds following default.
- Commercial mortgage-backed securities – overall credit quality, including assessments of the value and supply/demand characteristics of: collateral type such as office, retail, residential, lodging, or other; geographic concentration by region, state, metropolitan statistical area and locale; vintage year; historical collateral performance including defeasance, delinquency, default and special servicer trends; and capital structure support features.
- Asset-backed securities – overall credit quality, including assessments of the underlying collateral type such as credit card receivables, auto loan receivables and equipment lease receivables; geographic diversification; vintage year; historical collateral performance including delinquency, default and casualty trends; economic conditions influencing use rates and resale values; and contract structural support features.

Generally, all prices provided by the pricing service, except actively traded securities with quoted market prices, are reported as Level 2.

The Company holds privately placed fixed maturity securities and certain other fixed maturity securities that do not have an active market and for which the pricing service cannot provide fair values. The Company determines fair values for these securities using either matrix pricing utilizing the market approach or broker quotes. The Company will use observable market data as inputs into the fair value applications, as discussed in the determination of Level 2 fair values, to the extent it is available, but is also required to use a certain amount of unobservable judgment due to the illiquid nature of the securities involved. Unobservable judgment reflected in the Company's matrix model accounts for estimates of additional spread required by market participants for factors such as issue size, structural complexity, high bond coupon or other unique features. These matrix-priced securities are reported as Level 2 or Level 3, depending on the significance of the impact of unobservable judgment on the security's value. Additionally, the Company may obtain non-binding broker quotes which are reported as Level 3.

#### **EQUITY SECURITIES**

Level 1 consists of publicly traded securities, including exchange traded funds, valued at quoted market prices. Level 2 includes securities that are valued using pricing for similar securities and pricing models that incorporate observable inputs. Level 3 consists of common or preferred stock of private companies for which observable inputs are not available.

The Company utilizes a third-party pricing service for the valuation of the majority of its equity securities and receives one quote for each equity security. When quoted market prices in an active market are available, they are provided by the pricing service as the fair value and such values are classified as Level 1. The Company holds certain equity securities that have been issued by privately held entities that do not have an active market and for which the pricing service cannot provide fair values. Generally, the Company estimates fair value for these securities based on the issuer's book value and market multiples. These securities are reported as Level 2 or Level 3 depending on the significance of the impact of unobservable judgment on the security's value. Additionally, the Company may obtain non-binding broker quotes which are reported as Level 3.

## OTHER INVESTMENTS

Other investments primarily include mortgage participations, overseas trust funds required in connection with the Company's Lloyd's business and cost basis limited partnerships. Fair values of mortgage participations and other mortgage loans are estimated by discounting the contractual cash flows using the rates at which similar loans would be made to borrowers with comparable credit ratings and are reported as Level 3. Fair values of overseas trust funds are provided by the investment manager based on quoted prices for similar instruments in active markets and are reported as Level 2. The fair values of cost basis limited partnerships are based on the net asset value provided by the general partner and recent financial information and are excluded from the fair value hierarchy.

## DEBT

The fair value of debt is estimated based on quoted market prices for identical or similar issuances. If a quoted market price is not available, fair values are estimated using discounted cash flows that are based on current interest rates and yield curves for debt issuances with maturities and credit risks consistent with the debt being valued. Debt is reported as Level 2.

The estimated fair value of the financial instruments were as follows:

DECEMBER 31	2016		2015	
(in millions)	Carrying Value	Fair Value	Carrying Value	Fair Value
<b>Financial Assets</b>				
Cash and cash equivalents	\$ 282.6	\$ 282.6	\$ 338.8	\$ 338.8
Fixed maturities	7,331.3	7,331.3	6,983.4	6,983.4
Equity securities	584.4	584.4	576.6	576.6
Other investments	497.8	497.6	365.4	367.9
<b>Total financial assets</b>	<b>\$8,696.1</b>	<b>\$8,695.9</b>	<b>\$ 8,264.2</b>	<b>\$ 8,266.7</b>
<b>Financial Liabilities</b>				
Debt	\$ 786.4	\$ 841.9	\$ 803.1	\$ 927.8

The Company has processes designed to ensure that the values received from its third-party pricing service are accurately recorded, that the data inputs and valuation techniques utilized are appropriate and consistently applied and that the assumptions are reasonable and consistent with the objective of determining fair value. The Company performs a review of the fair value hierarchy classifications and of prices received from its pricing service on a quarterly basis. The Company reviews the pricing services' policies describing its methodology, processes, practices and inputs, including various financial models used to value securities. Also, the Company reviews the portfolio pricing, including a process for which securities with changes in prices that exceed a defined threshold are verified to independent sources, if available. If upon review, the Company is not satisfied with the validity of a given price, a pricing challenge would be submitted to the pricing service along with supporting documentation for its review. The Company does not adjust quotes or prices obtained from the pricing service unless the pricing service agrees with the Company's challenge. During 2016 and 2015, the Company did not adjust any prices received from its pricing service.

Changes in the observability of valuation inputs may result in a reclassification of certain financial assets or liabilities within the fair value hierarchy. Reclassifications between levels of the fair value hierarchy are reported as of the beginning of the period in which the reclassification occurs. As previously discussed, the Company utilizes a third-party pricing service for the valuation of the majority of its fixed maturities and equity securities. The pricing service 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 will use observable market data to the extent it is available, but may also be required to make assumptions for market based inputs that are unavailable due to market conditions.



The following tables provide, for each hierarchy level, the Company's assets that were measured at fair value on a recurring basis.

DECEMBER 31, 2016

(in millions)

	Total	Level 1	Level 2	Level 3
Fixed maturities:				
U.S. Treasury and government agencies	\$ 341.1	\$ 209.5	\$ 131.6	\$ —
Foreign government	240.7	47.3	193.4	—
Municipal	1,095.4	—	1,064.4	31.0
Corporate	4,053.8	—	4,049.6	4.2
Residential mortgage-backed, U.S. agency backed	924.4	—	924.4	—
Residential mortgage-backed, non-agency	49.8	—	49.8	—
Commercial mortgage-backed	554.3	—	539.3	15.0
Asset backed	71.8	—	71.8	—
Total fixed maturities	7,331.3	256.8	7,024.3	50.2
Equity securities	574.6	573.1	—	1.5
Other investments	106.3	—	102.2	4.1
Total investment assets at fair value	\$ 8,012.2	\$ 829.9	\$ 7,126.5	\$ 55.8

DECEMBER 31, 2015

(in millions)

	Total	Level 1	Level 2	Level 3
Fixed maturities:				
U.S. Treasury and government agencies	\$ 449.1	\$ 193.6	\$ 255.5	\$ —
Foreign government	245.8	52.5	193.3	—
Municipal	1,120.3	—	1,085.9	34.4
Corporate	3,691.0	—	3,687.3	3.7
Residential mortgage-backed, U.S. agency backed	824.5	—	824.5	—
Residential mortgage-backed, non-agency	71.6	—	71.6	—
Commercial mortgage-backed	501.1	—	484.1	17.0
Asset backed	80.0	—	79.5	0.5
Total fixed maturities	6,983.4	246.1	6,681.7	55.6
Equity securities	567.7	566.4	—	1.3
Other investments	104.5	—	100.9	3.6
Total investment assets at fair value	\$ 7,655.6	\$ 812.5	\$ 6,782.6	\$ 60.5

The following tables provide, for each hierarchy level, the Company's estimated fair values of financial instruments that were not carried at fair value.

DECEMBER 31, 2016

(in millions)

	Total	Level 1	Level 2	Level 3
Assets:				
Cash and cash equivalents	\$ 282.6	\$ 282.6	\$ —	\$ —
Equity securities	9.8	—	9.8	—
Other investments	297.2	—	—	297.2
Liabilities:				
Debt	\$ 841.9	\$ —	\$ 841.9	\$ —

DECEMBER 31, 2015

(in millions)

	Total	Level 1	Level 2	Level 3
Assets:				
Cash and cash equivalents	\$ 338.8	\$ 338.8	\$ —	\$ —
Equity securities	8.9	—	8.9	—
Other investments	203.5	—	—	203.5
Liabilities:				
Debt	\$ 927.8	\$ —	\$ 927.8	\$ —

Investments measured at fair value using net asset value based on an ownership interest in partners' capital have not been included in the tables above. The fair values of these investments were \$94.1 million and \$59.9 million as of December 31, 2016 and 2015, respectively, which were approximately 1% of total investment assets.

The following tables provide a reconciliation for all assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3).

YEAR ENDED DECEMBER 31, 2016

(in millions)

	Fixed Maturities				Total	Equity and Other	Total Assets
	Municipal	Corporate	Commercial mortgage-backed	Asset-backed			
Balance at beginning of year	\$ 34.4	\$ 3.7	\$ 17.0	\$ 0.5	\$ 55.6	\$ 4.9	\$ 60.5
Transfers out of Level 3	(1.2)	—	—	—	(1.2)	—	(1.2)
Total gains (losses):							
Included in total net realized investment gains (losses)	0.1	(0.2)	—	—	(0.1)	—	(0.1)
Included in other comprehensive income - net appreciation (depreciation) on available-for-sale securities	0.6	0.6	(0.2)	—	1.0	0.7	1.7
Purchases and sales:							
Purchases	—	0.3	—	—	0.3	—	0.3
Sales	(2.9)	(0.2)	(1.8)	(0.5)	(5.4)	—	(5.4)
Balance at end of year	\$ 31.0	\$ 4.2	\$ 15.0	\$ —	\$ 50.2	\$ 5.6	\$ 55.8

YEAR ENDED DECEMBER 31, 2015

(in millions)

	Fixed Maturities				Total	Equity and Other	Total Assets
	Municipal	Corporate	Commercial mortgage-backed	Asset-backed			
Balance at beginning of year	\$ 25.7	\$ 9.6	\$ 21.4	\$ —	\$ 56.7	\$ 5.0	\$ 61.7
Transfers into Level 3	—	—	—	1.3	1.3	—	1.3
Transfers out of Level 3	—	(4.6)	—	—	(4.6)	—	(4.6)
Total losses:							
Included in other comprehensive income - net depreciation on available-for-sale securities	(0.5)	(0.8)	(1.0)	(0.1)	(2.4)	(0.1)	(2.5)
Purchases and sales:							
Purchases	11.2	—	—	—	11.2	—	11.2
Sales	(2.0)	(0.5)	(3.4)	(0.7)	(6.6)	—	(6.6)
Balance at end of year	\$ 34.4	\$ 3.7	\$ 17.0	\$ 0.5	\$ 55.6	\$ 4.9	\$ 60.5

During the years ended December 31, 2016 and 2015, the Company transferred fixed maturities between Level 2 and Level 3 primarily as a result of assessing the significance of unobservable inputs on the fair value measurement. There were no transfers between Level 1 and Level 2 during 2016 or 2015. There were no Level 3 liabilities held by the Company for years ended December 31, 2016 and 2015.

The following table provides quantitative information about the significant unobservable inputs used by the Company in the fair value measurements of Level 3 assets. Where discounted cash flows were used in the valuation of fixed maturities, the internally-developed discount rate was adjusted by the significant unobservable inputs shown in the table. Valuations of \$0.6 million for securities based on broker quotes for which there was a lack of transparency as to inputs used to develop the valuations have been excluded.

(in millions)

	Valuation Technique	Significant Unobservable Inputs	Fair Value	Range (Wtd Average)	Fair Value	Range (Wtd Average)
Fixed maturities:						
Municipal	Discounted cash flow	Discount for:	\$ 31.0		\$ 34.4	
		Small issue size		0.7 - 6.8% (3.3%)		0.6 - 6.8% (3.2%)
		Credit stress		0.9 - 1.5% (1.2%)		0.9 - 1.5% (1.2%)
		Above-market coupon		0.3 - 0.5% (0.4%)		0.3 - 1.0% (0.4%)
Corporate	Discounted cash flow	Discount for:	4.0		3.7	
		Small issue size		2.0 - 2.5% (2.1%)		1.0% (1.0%)
		Credit stress		1.0% (1.0%)		10.0% (10.0%)
		Above-market coupon		0.3 - 0.8% (0.6%)		0.3 - 0.8% (0.6%)
Commercial mortgage-backed	Discounted cash flow	Discount for:	15.0		17.0	
		Small issue size		1.9 - 3.1% (2.6%)		0.5 - 1.0% (0.5%)
		Above-market coupon		0.5% (0.5%)		0.5% (0.5%)
		Lease structure		0.3% (0.3%)		0.3% (0.3%)
Asset backed	Discounted cash flow	Discount for:	—		0.5	
		Small issue size		N/A		0.7% (0.7%)
Equity securities	Market comparables	Net tangible asset market multiples	1.1	1.0X (1.0X)	1.1	1.0X (1.0X)
Other	Discounted cash flow	Discount rate	4.1	18.0% (18.0%)	3.6	18.0% (18.0%)

Significant increases (decreases) in any of the above inputs in isolation would result in a significantly lower (higher) fair value measurement. There were no interrelationships between these inputs which might magnify or mitigate the effect of changes in unobservable inputs on the fair value measurement.

## 6. DEBT AND CREDIT ARRANGEMENTS

Debt consists of the following:

DECEMBER 31	2016	2015
(in millions)		
Senior debentures maturing April 15, 2026	\$ 375.0	\$ —
Senior debentures maturing October 15, 2025	62.6	74.6
Senior debentures maturing June 15, 2021	—	300.0
Senior debentures maturing March 1, 2020	—	80.0
Subordinated debentures maturing March 30, 2053	175.0	175.0
Subordinated debentures maturing February 3, 2027	59.7	59.7
FHLBB borrowings (secured)	125.0	125.0
Total principal debt	797.3	814.3
Unamortized debt issuance costs	(10.9)	(11.2)
Total	\$ 786.4	\$ 803.1

On April 8, 2016, the Company issued \$375.0 million aggregate principal amount of 4.50% senior unsecured debentures due April 15, 2026. Net proceeds from the issuance were \$370.7 million. On May 21, 2016, the pro-

ceeds, together with cash on hand, were used to redeem the outstanding 7.50% senior notes due March 1, 2020 and the 6.375% senior notes due June 15, 2021. The redemption of these notes resulted in a pre-tax loss of \$86.1 million.

The Company also held 7.625% senior unsecured debentures that were issued on October 16, 1995 with a par value of \$200.0 million. As of December 31, 2016 and 2015, the remaining 7.625% senior debentures have a par value of \$62.6 million and \$74.6 million, respectively, and mature on October 15, 2025.

Both of the Company's outstanding senior debentures are subject to certain restrictive covenants, including limitations on the issuance or disposition of stock of restricted subsidiaries and limitations on liens, and pay interest semi-annually.

The Company also held \$175.0 million aggregate principal amount of 6.35% subordinated unsecured debentures due March 30, 2053. These debentures pay interest quarterly. The Company may redeem these debentures in whole at any time, or in part from time to time, on or after March 30, 2018, at a redemption price equal to their principal amount plus accrued and unpaid interest. In addition, the Company's subordinated debentures maturing February 3, 2027 have a par value of \$59.7 million as of December 31, 2016 and 2015 and pay cumulative dividends semi-annually at 8.207%.

In 2016, in addition to the redemption of the senior debentures maturing June 15, 2021 and March 1, 2020, the Company repurchased senior debentures maturing October 15, 2025, with a carrying value of \$11.9 million at a cost of \$14.1 million, resulting in a pre-tax loss of \$2.2 million.

In 2015, the Company repurchased senior debentures maturing March 1, 2020, with a carrying value of \$83.7 million at a cost of \$106.0 million, resulting in a pre-tax loss of \$22.3 million, and senior debentures maturing October 15, 2025, with a carrying value of \$6.5 million at a cost of \$8.3 million, resulting in a pre-tax loss of \$1.8 million.

In 2009, Hanover Insurance received a \$125.0 million FHLBB advance through its membership in the FHLBB. This collateralized advance bears interest at a fixed rate of 5.50% per annum over a twenty-year term. As collateral to FHLBB, the Company pledged government agency securities with a fair value of \$201.8 million and \$176.0 million, for the aggregate borrowings of \$125.0 million as of December 31, 2016 and December 31, 2015, respectively. The fair value of the collateral pledged must be maintained at certain specified levels of the borrowed amount, which can vary depending on the type of assets pledged. If the fair value of this collateral declines below these specified levels, the Company would be required to pledge additional collateral or repay outstanding borrowings. The Company is permitted to voluntarily repay the outstanding borrowings at any time, subject to a repayment fee. As a requirement of membership in the FHLBB, the Company maintains a certain level of investment in FHLBB stock. Total holdings of FHLBB stock were \$9.8 million and \$8.9 million at December 31, 2016 and 2015, respectively.

At December 31, 2016, the Company had a \$200.0 million credit agreement which expires in November 2018. The Company had no borrowings under this agreement. Additionally, the Company had a Standby Letter of Credit Facility not to exceed £170.0 million (or \$209.6 million). This Letter of Credit Facility provides regulatory capital supporting Chaucer's underwriting activities for the 2015, 2016 and 2017 years of account and each prior open year of account. Simultaneous with this agreement, THG entered into a Guaranty Agreement with Lloyds Bank plc, as Facility Agent and Security Agent, pursuant to which THG unconditionally guarantees the obligations of Chaucer under the Letter of Credit Facility.

Interest expense was \$54.9 million, \$60.6 million, and \$65.8 million in 2016, 2015 and 2014, respectively. At December 31, 2016, the Company was in compliance with the covenants associated with all of its debt indentures and credit arrangements.

## 7. INCOME TAXES

Provisions for income taxes have been calculated in accordance with the provisions of ASC 740. A summary of the components of income before income taxes and income tax expense in the Consolidated Statements of Income are shown below:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Income before income taxes:			
U.S.	\$ 70.8	\$ 220.9	\$ 185.6
Non-U.S.	121.5	218.5	192.4
	<b>\$ 192.3</b>	<b>\$ 439.4</b>	<b>\$ 378.0</b>

Income tax expense includes the following components:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Current:			
U.S.	\$ 16.8	\$ 32.7	\$ 4.5
Non-U.S.	35.3	23.1	22.6
Total current	<b>52.1</b>	<b>55.8</b>	<b>27.1</b>
Deferred:			
U.S.	(20.4)	44.0	51.1
Non-U.S.	4.5	8.8	17.5
Total deferred	<b>(15.9)</b>	<b>52.8</b>	<b>68.6</b>
Total income tax expense	<b>\$ 36.2</b>	<b>\$ 108.6</b>	<b>\$ 95.7</b>

The income tax expense attributable to the consolidated results of continuing operations is different from the amount determined by multiplying income from continuing operations before income taxes by the U.S. statutory federal income tax rate of 35%. The sources of the difference and the tax effects of each were as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Expected income tax expense	\$ 67.3	\$ 153.7	\$ 132.3
Tax difference related to investment			
disposals and maturities	(20.7)	(13.3)	(16.2)
Effect of foreign operations	(6.6)	(7.8)	(8.1)
Dividend received deduction	(3.3)	(3.1)	(2.6)
Tax-exempt interest	(1.1)	(1.4)	(1.7)
Foreign tax credits	(0.6)	(5.6)	—
Gain on disposal of U.K. motor			
business exempt from tax	—	(17.3)	—
Foreign exchange losses	—	—	(6.9)
Change in valuation allowance	—	—	(2.9)
Nondeductible expenses	1.4	1.6	1.8
Change in liability for uncertain			
tax positions	—	1.7	—
Other, net	(0.2)	0.1	—
Income tax expense	<b>\$ 36.2</b>	<b>\$ 108.6</b>	<b>\$ 95.7</b>
Effective tax rate	<b>18.8%</b>	<b>24.7%</b>	<b>25.3%</b>

The following are the components of the Company's deferred tax assets and liabilities (excluding those associated with its discontinued operations).

DECEMBER 31	2016	2015
(in millions)		
Deferred tax assets:		
Loss, LAE and unearned premium reserves, net	\$ 183.9	\$ 179.0
Tax credit carryforwards	94.6	70.5
Employee benefit plans	44.4	39.6
Investments, net	—	12.4
Other	54.9	53.6
	377.8	355.1
Less: Valuation allowance	—	—
	377.8	355.1
Deferred tax liabilities:		
Deferred acquisition costs	141.0	134.9
Deferred Lloyd's underwriting income	32.7	22.4
Software capitalization	28.9	26.9
Investments, net	27.9	—
Other	32.2	33.0
	262.7	217.2
Net deferred tax asset	\$ 115.1	\$ 137.9

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.

The Company's deferred tax asset as of December 31, 2016 included assets of \$72.3 million related to alternative minimum tax credit carryforwards and \$22.3 million related to foreign tax credit carryforwards. The alternative minimum tax credit carryforwards have no expiration date, and the foreign tax credit carryforwards will expire beginning in 2026. The Company has utilized in 2016 and may continue to utilize the credits to offset regular federal income taxes due from future income, and although the Company believes that these assets are fully recoverable, there can be no certainty that future events will not affect their recoverability. The Company believes, based on objective evidence, it is more likely than not that the remaining deferred tax assets will be realized.

In prior years, the Company completed several transactions which resulted in the realization, for tax purposes only, of unrealized gains in its investment portfolio. As a result of these transactions, the Company was able to realize capital losses carried forward and to release the valuation allowance recorded against the deferred tax asset related to these losses. The releases of valuation allowances were recorded as a benefit in accumulated other comprehensive income. Previously unrealized bene-

fits of \$20.7 million, \$13.3 million and \$16.2 million attributable to non-operating income, are recognized as part of income from continuing operations during 2016, 2015 and 2014, respectively. The remaining amount of \$57.5 million in accumulated other comprehensive income will be released into income from continuing operations in future years, as the investment securities subject to these transactions are sold or mature.

Although most of the Company's non-U.S. income is subject to U.S. federal income tax, certain of its non-U.S. income is not subject to U.S. federal income tax until repatriated. Foreign taxes on this non-U.S. income are accrued at the local foreign tax rate, as opposed to the higher U.S. statutory tax rate, since these earnings currently are expected to be indefinitely reinvested overseas. This assumption could change, as a result of a sale of the subsidiaries, the receipt of dividends from the subsidiaries, a change in management's intentions, or as a result of various other events. The Company has not made a provision for U.S. taxes on \$23.5 million, \$69.8 million and \$23.3 million of non-U.S. income for 2016, 2015 and 2014, respectively. However, in the future, if such earnings were distributed to the Company, taxes of \$43.4 million would be payable on the accumulated undistributed earnings and would be reflected in the tax provision for the year in which these earnings are no longer intended to be indefinitely reinvested overseas, assuming all foreign tax credits are realized.

The table below provides a reconciliation of the beginning and ending liability for uncertain tax positions as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Liability at beginning of year, net	\$ 3.0	\$ 1.3	\$ 1.4
Additions for tax positions of prior years	0.4	1.7	(0.1)
Settlements/subtractions for tax positions of prior years	(0.7)	—	(4.8)
Deferred deductions	—	—	4.8
Liability at end of year, net	\$ 2.7	\$ 3.0	\$ 1.3

In 2014, the IRS audits of the years 2007 through 2010 were settled with no material impact to the Company's financial position or results of operations.

There are no tax positions at December 31, 2016, 2015 and 2014 for which the ultimate deductibility is highly certain, but for which there is uncertainty about the timing of such deductibility. Because of the impact of deferred tax accounting, other than interest and penalties, a change in the timing of deductions would not impact the annual effective tax rate.



The Company recognizes interest and penalties related to unrecognized tax benefits in federal income tax expense. The Company had accrued interest of \$0.2 million and \$0.6 million as of December 31, 2016 and 2015, respectively. For the years ended December 31, 2016, 2015 and 2014 the Company recognized a release of interest of \$0.4 million, and expense of \$0.1 million and \$0.5 million, respectively. The Company has not recognized any penalties associated with unrecognized tax benefits.

In 2017, the Company is expecting to release \$0.6 million of liability due to the expiration of a statute of limitations.

The Company or its subsidiaries file income tax returns in the U.S. federal jurisdiction and various state jurisdictions, as well as foreign jurisdictions. The Company and its subsidiaries are subject to U.S. federal income tax examinations by tax authorities for years after 2012, U.S. state income tax examinations for years after 2012 and foreign examinations for years after 2012.

## 8. PENSION PLANS

### DEFINED BENEFIT PLANS

The Company recognizes the funded status of its defined benefit plans in its Consolidated Balance Sheets. The funded status is measured as the difference between the fair value of plan assets and the projected benefit obligation of the Company's defined benefit plans. The Company is required to aggregate separately all overfunded plans from all underfunded plans.

#### U.S. Defined Benefit Plans

Prior to 2005, THG provided retirement benefits to substantially all of its employees under defined benefit pension plans. These plans were based on a defined benefit cash balance formula, whereby the Company annually provided an allocation to each covered employee based on a percentage of that employee's eligible salary, similar to a defined contribution plan arrangement. In addition to the cash balance allocation, certain transition group employees who had met specified age and service requirements as of December 31, 1994 were eligible for a grandfathered benefit based primarily on the employees' years of service and compensation during their highest five consecutive plan years of employment. The Company's policy for the plans is to fund at least the minimum amount required by the Employee Retirement Income Security Act of 1974 ("ERISA").

As of January 1, 2005, the defined benefit pension plans were frozen and since that date, no further cash balance allocations have been credited to participants. Participants' accounts are credited with interest daily, based upon the General Agreement of Trades and Tariffs rate (the 30-year Treasury Bond interest rate). In addition, the grandfathered benefits for the transition group were also frozen at January 1, 2005 levels with an annual transition pension adjustment calculated at an interest rate equal to 5% per year up to 35 years of completed service, and 3% thereafter. As of December 31, 2016, based on current estimates of plan liabilities and other assumptions, the projected benefit obligation of the qualified defined benefit pension plan exceeds plan assets by approximately \$54 million.

#### Chaucer Pension Plan

Prior to 2002, the Chaucer segment provided defined benefit pension retirement benefits to certain of its employees. As of December 31, 2001, the defined benefit pension plan was closed to new members, and as of December 31, 2016 the plan is no longer accruing for future salary increases. The defined benefit obligation for this plan is based on the employees' years of service and final pensionable salary. Contributions are made at least annually to this plan by both the Company and by employees. As of December 31, 2016, based on current estimates of plan liabilities and other assumptions, the projected benefit obligation of the qualified defined benefit pension plan exceeds plan assets by approximately \$16 million.

#### Assumptions

In order to measure the expense associated with these plans, management must make various estimates and assumptions, including discount rates used to value liabilities, assumed rates of return on plan assets, employee turnover rates and anticipated mortality rates, for example. The estimates used by management are based on the Company's historical experience, as well as current facts and circumstances. In addition, the Company uses outside actuaries to assist in measuring the expense and liability associated with these plans.

The Company measures the funded status of its plans as of the date of its year-end statement of financial position. The Company utilizes a measurement date of December 31st to determine its benefit obligations, consistent with the date of its Consolidated Balance Sheets.

Weighted average assumptions used to determine pension benefit obligations are as follows:

DECEMBER 31	2016	2015	2014
U.S.			
Discount rate - qualified plan	<b>4.25%</b>	4.88%	4.38%
Discount rate - non-qualified plan	<b>4.25%</b>	4.75%	4.25%
Cash balance interest crediting rate	<b>3.50%</b>	3.50%	3.50%
Chaucer			
Discount rate	<b>2.85%</b>	3.85%	3.75%
Rate of increase in future compensation <sup>(1)</sup>	<b>3.15%</b>	3.10%	3.00%

(1) The salary increase assumption as of December 31, 2016 is used to calculate the curtailment gain that resulted from the cessation of future salary increases.

The Company utilizes a measurement date of January 1st to determine its periodic pension costs. Weighted average assumptions used to determine net periodic pension costs for the defined benefit plans are as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
U.S.			
Qualified plan			
Discount rate	<b>4.88%</b>	4.38%	5.00%
Expected return on plan assets	<b>5.25%</b>	5.00%	5.50%
Cash balance interest crediting rate	<b>3.50%</b>	3.50%	3.50%
Non-qualified plan			
Discount rate	<b>4.75%</b>	4.25%	5.00%
Chaucer			
Discount rate	<b>3.85%</b>	3.75%	4.50%
Rate of increase in future compensation	<b>3.10%</b>	3.00%	3.15%
Expected return on plan assets	<b>5.45%</b>	5.45%	6.55%

The expected rates of return were determined by using historical mean returns for each asset class, adjusted for certain factors believed to have an impact on future returns. These returns are generally weighted to the plan's actual asset allocation. For the U.S. defined benefit plans, an increase in the expected return on plan assets for 2016 to 5.25% reflects long-term expectations for improvements, including increased interest rates, in the fixed

maturities market in general. For the Chaucer plan, the expected rate of return on plan assets was 5.45%, for both the years ended December 31, 2016 and 2015. The Company reviews and updates, at least annually, its expected return on plan assets based on changes in the actual assets held by the plans and market conditions.

## Plan Assets

### U.S. Qualified Defined Benefit Plan

The Company utilizes a target allocation strategy, which focuses on creating a mix of assets that will generate modest growth from equity securities while minimizing volatility in the Company's earnings from changes in the markets and economic environment. Various factors are taken into consideration in determining the appropriate asset mix, such as census data, actuarial valuation information and capital market assumptions. The Company reviews and updates, at least annually, the target allocation and makes changes periodically.

The following table provides 2016 target allocations and actual invested asset allocations for 2016 and 2015.

DECEMBER 31	2016 TARGET LEVELS	2016	2015
Fixed income securities:			
Fixed maturities	<b>83%</b>	83%	84%
Money market funds	<b>2%</b>	2%	1%
Total fixed income securities	<b>85%</b>	85%	85%
Equity securities:			
Domestic	<b>12%</b>	12%	12%
International	<b>3%</b>	3%	3%
Total equity securities	<b>15%</b>	15%	15%
Total plan assets	<b>100%</b>	100%	100%

The following tables present, for each hierarchy level, the U.S. qualified defined benefit plan's investment assets that are measured at fair value at December 31, 2016 and 2015. Refer to Note 5 – "Fair Value" for a description of the different levels in the Fair Value Hierarchy.

DECEMBER 31	2016				2015			
(in millions)								
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Fixed income securities:								
Fixed maturities	\$ 53.7	\$ 23.0	\$ —	\$ 30.7	\$ 42.0	\$ 10.3	\$ —	\$ 31.7
Money market funds	7.1	7.1	—	—	4.7	4.7	—	—
Total investments at fair value	\$ 60.8	\$ 30.1	\$ —	\$ 30.7	\$ 46.7	\$ 15.0	\$ —	\$ 31.7

### Fixed Income Securities

Securities classified as Level 1 at December 31, 2016 and 2015 include actively traded mutual funds and publicly traded securities, which are valued at quoted market prices. Securities classified as Level 3 at December 31, 2016 and 2015 include assets held in a fixed account of an insurance company. The fair value of the investment is estimated using a comparable public market financial institution derived fair value curve that uses non-observable inputs for market liquidity and unique credit characteristics of its underlying securities.

The Plan also holds investments measured at fair value using NAV based on the value of the underlying investments, which is determined independently by the investment manager and have not been included in the table above. These include investments in commingled pools and investment-grade fixed income securities, held in a custom fund, and commingled pools that primarily invest in publicly traded common stocks and international equity securities. The daily NAV, which is not published as a quoted market price for these investments, is used as the basis for transactions. Redemption of these funds is not subject to restriction. The fair values of these investments are as follows:

DECEMBER 31	2016	2015
(in millions)		
Fixed maturities	\$ 322.4	\$ 355.6
Equity securities:		
Domestic	53.9	54.6
International	16.2	15.9
Total equity	70.1	70.5
Total investments carried at NAV	\$ 392.5	\$ 426.1

The table below provides a reconciliation for all assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3).

YEAR ENDED DECEMBER 31	2016
(in millions)	
Balance at beginning of period	\$ 31.7
Actual return on plan assets related to assets still held	(1.0)
Balance at end of year	\$ 30.7

### Chaucer Pension Plan

The investment strategy of the Chaucer defined benefit pension plan is to invest primarily in growth assets in the form of equity funds that are expected to provide a positive return exceeding inflation over the longer term in order to protect the existing and future liabilities of the pension plan. In order to reduce volatility and diversify the portfolio, the target allocation includes an exposure to corporate bond and commercial property funds. This allocation plan is reviewed annually, and target allocation changes are made as appropriate.

The following table provides 2016 target allocations and actual invested asset allocations for 2016 and 2015.

DECEMBER 31	2016 TARGET LEVELS	2016	2015
Fixed income securities:			
Fixed maturities	30%	34%	32%
Equity securities:			
Domestic (United Kingdom)	15%	14%	14%
International	45%	41%	42%
Total equity securities	60%	55%	56%
Real estate funds	10%	11%	12%
Total plan assets	100%	100%	100%

The Chaucer plan only holds cash and equivalents and investments measured at fair value using NAV. These investments include pooled funds that are valued at the close of business using a third-party pricing service. These values are adjusted by the fund manager to reflect outstanding dividends, taxes and investment fees and other expenses to calculate the NAV.

Real estate fund investments are also valued based upon the values of the net assets of the fund. Although the NAV is calculated daily, transactions also consider cash inflows and outflows of the fund. The price where units are transacted includes the NAV, which is adjusted for investment charges and other estimated acquisition costs such as legal fees, taxes, planning and architect fees, survey and agent fees, among others.

The following table presents the Chaucer defined benefit plan's investment assets at December 31, 2016 and 2015.

DECEMBER 31	2016	2015
(in millions)		
Cash and equivalents	\$ 0.3	\$ 0.6
Fixed income securities:		
Fixed maturities	39.4	38.7
Equity securities:		
Domestic (United Kingdom)	16.0	17.0
International	48.0	52.4
Total equity securities	64.0	69.4
Real estate funds	12.8	14.8
Total investments carried at NAV	\$ 116.5	\$ 123.5

### Obligations and Funded Status

The Company recognizes the current net underfunded status of its plans in its Consolidated Balance Sheets. Changes in the funded status of the plans are reflected as components of either net income or accumulated other comprehensive loss or income. The components of accumulated other comprehensive loss or income are reflected as either a net actuarial gain or loss or a net prior service cost.

The following table reflects the benefit obligations, fair value of plan assets and funded status of the plans at December 31, 2016 and 2015.

DECEMBER 31 (in millions)	2016	2015	2016	2015	2016	2015
	U.S. Qualified Pension Plan		U.S. Non-Qualified Pension Plan		Chaucer Pension Plan	
Accumulated benefit obligation	\$ 506.8	\$ 500.5	\$ 38.0	\$ 37.8	\$ 132.2	\$ 126.0
<b>Change in benefit obligation:</b>						
Projected benefit obligation, beginning of period	500.5	538.5	37.8	40.6	128.3	137.5
Employee contributions	—	—	—	—	0.2	0.3
Service cost - benefits earned during the period	—	—	—	—	0.8	1.1
Interest cost	23.2	22.5	1.7	1.7	4.5	5.1
Actuarial losses (gains)	29.4	(23.3)	1.7	(1.3)	25.9	(0.7)
Benefits paid	(46.3)	(37.2)	(3.2)	(3.2)	(1.8)	(5.8)
Curtailment gain	—	—	—	—	(2.4)	(1.8)
Foreign currency translation	—	—	—	—	(23.3)	(7.4)
Projected benefit obligation, end of year	506.8	500.5	38.0	37.8	132.2	128.3
<b>Change in plan assets:</b>						
Fair value of plan assets, beginning of period	472.8	513.4	—	—	123.5	131.8
Actual return on plan assets	26.8	(3.4)	—	—	15.4	3.3
Contributions	—	—	3.2	3.2	0.8	1.3
Benefits paid	(46.3)	(37.2)	(3.2)	(3.2)	(1.8)	(5.8)
Foreign currency translation	—	—	—	—	(21.4)	(7.1)
Fair value of plan assets, end of year	453.3	472.8	—	—	116.5	123.5
Funded status of the plans	\$ (53.5)	\$ (27.7)	\$ (38.0)	\$ (37.8)	\$ (15.7)	\$ (4.8)

Contributions include \$0.2 million and \$0.3 million of Chaucer employee contributions during 2016 and 2015, respectively. All other contributions for all plans were made by the Company.

#### Components of Net Periodic Pension Cost

The components of total net periodic pension cost are as follows:

YEARS ENDED DECEMBER 31 (in millions)	2016	2015	2014
Service cost - benefits earned during the period	\$ 0.7	\$ 1.1	\$ 1.5
Interest cost	29.5	29.3	33.7
Expected return on plan assets	(29.6)	(31.6)	(36.6)
Recognized net actuarial loss	13.5	13.9	11.7
Amortization of prior service cost	—	—	0.1
Settlement loss	—	—	12.1
Curtailment gain	(2.4)	(1.8)	—
Net periodic pension cost	\$ 11.7	\$ 10.9	\$ 22.5

During 2016, the Chaucer plan was closed to future salary accruals, which eliminated any remaining benefits to be accumulated in future periods, and resulted in a \$2.4 million curtailment gain. An equal and offsetting expense was included in recognized net actuarial losses in the above table.

During 2015, the Company transferred its U.K. motor business (See also “Disposal of U.K. Motor Business” in Note 2 – “Dispositions of Businesses”). As a result of this transaction, participants of the Chaucer plan who worked in this line also transferred to the unaffiliated U.K.-based insurance provider. Accordingly, they no longer are active participants of this plan and the liability was reduced resulting in a \$1.8 million curtailment gain. An equal and offsetting expense was included in recognized net actuarial losses in the above table.

During 2014, the Company announced a program to offer voluntary lump-sum pension payout options to eligible former employees that, if accepted, would settle the Company’s obligation to them. The program provided participants with a one-time choice of electing to receive a lump-sum settlement of their remaining pension benefit. As part of this voluntary lump-sum program, the Company settled \$55.1 million of its pension obligations with an equal amount paid from plan assets. As a result, the Company recorded settlement losses of \$10.8 million, reflecting the accelerated recognition of unamortized losses in the plan proportionate to the obligation that was settled. These settlement charges were recorded in other operating expenses with a corresponding balance sheet reduction in accumulated other comprehensive income. Additionally, the Company terminated another of its small

qualified plans, accelerating the recognition of unamortized losses of \$1.3 million.

The following table reflects the total amounts recognized in accumulated other comprehensive income relating to both the U.S. defined benefit pension plans and the Chaucer pension plan as of December 31, 2016 and 2015.

DECEMBER 31	2016	2015
(in millions)		
Net actuarial loss	\$ 150.4	\$ 119.4

The unrecognized net actuarial gains (losses) which exceed 10% of the greater of the projected benefit obligation or the fair value of plan assets are amortized as a component of net periodic pension cost over the next five years. The following table reflects the total estimated amount of actuarial losses that will be amortized from accumulated other comprehensive income into net periodic pension cost in 2017 (the estimated expense related to the Chaucer plan was converted to U.S. dollars at an exchange rate of 1.23):

ESTIMATED AMORTIZATION IN 2017	EXPENSE
(in millions)	
Net actuarial loss	\$ 15.8

### Contributions

In accordance with ERISA guidelines, the Company is not required to fund its U.S. qualified benefit plan in 2017. The Company expects to contribute \$3.2 million to its U.S. non-qualified pension plan to fund 2017 benefit payments and at a minimum, \$7.4 million to the Chaucer pension plan; although additional contributions may be made into the Chaucer plan. (Estimated contributions related to the Chaucer plan were converted to U.S. dollars at an exchange rate of 1.23). At this time, no additional discretionary contributions are expected to be made into the U.S. plans during 2017, and the Company does not expect that any funds will be returned from the plans to the Company during 2017.

### Benefit Payments

The Company estimates that benefit payments over the next 10 years will be as follows:

YEARS ENDED DECEMBER 31	2017	2018	2019	2020	2021	2022- 2026
(in millions)						
U.S. qualified pension plan	\$ 38.8	\$ 37.7	\$ 37.6	\$ 37.4	\$ 37.5	\$174.9
U.S. non-qualified pension plan	\$ 3.2	\$ 3.1	\$ 3.0	\$ 3.1	\$ 2.9	\$ 13.5
Chaucer pension plan	\$ 1.6	\$ 1.7	\$ 1.8	\$ 1.8	\$ 1.9	\$ 10.8

The benefit payments are based on the same assumptions used to measure the Company's benefit obligations at the end of 2016. Benefit payments related to the U.S. qualified plan and the Chaucer plan will be made from plan assets held in trusts and not included with Company assets, whereas those payments related to the non-qualified plan will be provided for by the Company. Expected benefits related to the Chaucer pension plan were converted to U.S. dollars at an exchange rate of 1.23.

### DEFINED CONTRIBUTION PLAN

In addition to the defined benefit plans, THG provides a defined contribution 401(k) plan for its U.S. employees, whereby the Company matches employee elective 401(k) contributions, up to a maximum of 6% of eligible compensation in 2016, 2015, and 2014. The Company's expense for this matching provision was \$21.4 million, \$20.1 million and \$19.9 million for 2016, 2015 and 2014, respectively. In addition to this matching provision, the Company can elect to make an annual contribution to employees' accounts. Additional contributions amounted to \$2.0 million and \$2.1 million for the 2015 and 2014 plan years, respectively.

Chaucer also provides a defined contribution plan for its employees that provides for employer provided contributions. The Company's expense for 2016, 2015 and 2014 was \$3.9 million, \$4.8 million and \$6.1 million, respectively.

### 9. OTHER POSTRETIREMENT BENEFIT PLANS

In addition to the Company's pension plans, the Company also has postretirement medical benefits that it provides to former agents and retirees and their dependents, and a limited number of full-time employees. The plans, which are funded by the Company through either a Health Reimbursement Arrangement ("HRA") or directly, provide access to benefits including hospital and major medical, with certain limits, and have varying co-payments and deductibles, depending on the plan. Generally, employees who were actively employed on December 31, 1995 became eligible with at least 15 years of service after the age of 40. Effective January 1, 1996, the Company revised these benefits so as to establish limits on future benefit payments to beneficiaries of retired participants and to restrict eligibility to then current employees. In 2009, the Company changed the postretirement medical benefits, only as they relate to current employees who still qualified for participation in the plan under the above formula. For these participants, the plan provided for only post age 65 benefits. In 2015, the Company amended the plan to only provide this benefit to those participants who retire before



January 1, 2018, further limiting the number of current employees who are eligible to participate in this plan. The population of agents receiving postretirement benefits was frozen as of December 31, 2002, when the Company ceased its distribution of proprietary life and annuity products. This plan is unfunded.

The Company has recognized the funded status of its postretirement benefit plans in its Consolidated Balance Sheets. Since the plans are unfunded, the amount recognized in the Consolidated Balance Sheets is equal to the accumulated benefit obligation of the plans. The components of accumulated other comprehensive income or loss are reflected as either a net actuarial gain or loss or a net prior service cost.

### Obligation and Funded Status

The following table reflects the funded status of these plans:

DECEMBER 31	2016	2015
<i>(in millions)</i>		
Change in benefit obligation:		
Accumulated postretirement benefit obligation, beginning of year	\$ 12.1	\$ 17.0
Interest cost	0.5	0.5
Net actuarial loss	1.0	0.1
Benefits paid	(2.0)	(2.5)
Plan amendment	—	(3.0)
Accumulated postretirement benefit obligation, end of year	11.6	12.1
Fair value of plan assets, end of year	—	—
Funded status of plans	\$ (11.6)	\$ (12.1)

### Benefit Payments

The Company estimates that benefit payments over the next 10 years will be as follows:

YEARS ENDING DECEMBER 31	
<i>(in millions)</i>	
2017	\$ 1.4
2018	1.3
2019	1.2
2020	1.1
2021	1.0
2022 - 2026	4.1

The benefit payments are based on the same assumptions used to measure the Company's benefit obligation at the end of 2016 and reflect benefits attributable to estimated future service.

### Components of Net Periodic Postretirement Expense (Benefit)

The components of net periodic postretirement expense (benefit) were as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions)</i>			
Service cost	\$ —	\$ —	\$ 0.1
Interest cost	0.5	0.5	0.8
Recognized net actuarial loss	0.2	0.2	0.1
Amortization of prior service cost (benefit)	(1.4)	(1.4)	(1.9)
Net periodic postretirement benefit	\$ (0.7)	\$ (0.7)	\$ (0.9)

The following table reflects the balances in accumulated other comprehensive income relating to the Company's postretirement benefit plans:

DECEMBER 31	2016	2015
<i>(in millions)</i>		
Net actuarial loss	\$ 4.1	\$ 3.3
Net prior service cost	(1.8)	(3.3)
	\$ 2.3	\$ —

The following table reflects the estimated amortization to be recognized in net periodic benefit cost in 2017:

ESTIMATED AMORTIZATION IN 2017	EXPENSE (BENEFIT)
<i>(in millions)</i>	
Net actuarial loss	\$ 0.2
Net prior service cost	(1.4)
	\$ (1.2)

## Assumptions

Employers are required to measure the funded status of their plans as of the date of their year-end statement of financial position. As such, the Company has utilized a measurement date of December 31, 2016 and 2015, to determine its postretirement benefit obligations, consistent with the date of its Consolidated Balance Sheets. Weighted average discount rate assumptions used to determine postretirement benefit obligations and periodic postretirement costs are as follows:

YEARS ENDED DECEMBER 31	2016	2015
Postretirement benefit obligations discount rate	<b>4.13%</b>	4.63%
Postretirement benefit cost discount rate	<b>4.63%</b>	4.38%

Assumed health care cost trend rates are as follows:

DECEMBER 31	2016	2015
Health care cost trend rate assumed for next year	<b>6.50%</b>	7.00%
Rate to which the cost trend is assumed to decline (ultimate trend rate)	<b>4.50%</b>	5.00%
Year the rate reaches the ultimate trend rate	<b>2024</b>	2020

A one-percentage point change in assumed health care cost trend rates in each year would have an immaterial effect on net periodic benefit cost during 2016 and accumulated postretirement benefit obligation at December 31, 2016.

## 10. OTHER COMPREHENSIVE INCOME

The following table provides changes in other comprehensive income.

YEARS ENDED DECEMBER 31	2016			2015			2014		
(in millions)	Pre-Tax	Tax Benefit (Expense)	Net of Tax	Pre-Tax	Tax Benefit (Expense)	Net of Tax	Pre-Tax	Tax Benefit (Expense)	Net of Tax
Unrealized gains (losses) on available-for-sale securities:									
Unrealized gains (losses) arising during period (net of pre-tax, ceded unrealized gains of \$0.8 million for the year ended December 31, 2014)	\$ 95.9	\$ (33.4)	\$ 62.5	\$ (199.3)	\$ 69.5	\$ (129.8)	\$ 138.7	\$ (45.7)	\$ 93.0
Amount of realized gains from sales and other	(36.5)	(8.0)	(44.5)	(39.6)	0.7	(38.9)	(55.3)	0.3	(55.0)
Portion of other-than-temporary impairment losses recognized in earnings	27.9	(9.8)	18.1	27.2	(9.5)	17.7	5.5	(1.9)	3.6
Net unrealized gains (losses)	87.3	(51.2)	36.1	(211.7)	60.7	(151.0)	88.9	(47.3)	41.6
Pension and postretirement benefits:									
Net (loss) gain arising in the period from net actuarial (losses) gains and prior service costs	(43.1)	12.8	(30.3)	(3.5)	0.7	(2.8)	(33.6)	11.0	(22.6)
Loss on settlement of pension obligation	—	—	—	—	—	—	12.1	(4.2)	7.9
Amortization of net actuarial loss and prior service cost recognized as net periodic benefit cost	9.9	(3.5)	6.4	12.7	(4.2)	8.5	10.0	(3.5)	6.5
Cumulative foreign currency translation adjustment:									
Foreign currency translation recognized during the period	(5.1)	1.8	(3.3)	(11.1)	3.9	(7.2)	(7.1)	2.5	(4.6)
Other comprehensive income (loss)	\$ 49.0	\$ (40.1)	\$ 8.9	\$ (213.6)	\$ 61.1	\$ (152.5)	\$ 70.3	\$ (41.5)	\$ 28.8

Reclassifications out of accumulated other comprehensive income were as follows:

YEARS ENDED DECEMBER 31	2016	2015	2014	
(in millions)				
<i>Details about Accumulated Other Comprehensive Income Components</i>	<i>Amount Reclassified from Accumulated Other Comprehensive Income</i>			<i>Affected Line Item in the Statement Where Net Income is Presented</i>
Unrealized gains (losses) on available-for-sale securities	\$ 36.4	\$ 39.9	\$ 55.2	Net realized gains from sales and other
	(27.9)	(26.8)	(5.5)	Net other-than-temporary impairment losses on investments recognized in earnings
	8.5	13.1	49.7	Total before tax
	17.8	8.7	1.6	Tax benefit
	26.3	21.8	51.3	
	(0.1)	(0.6)	0.1	Other, net of tax
	26.2	21.2	51.4	Net of tax
Amortization of defined benefit pension and postretirement plans	(9.9)	(12.7)	(22.1)	Loss adjustment expenses and other operating expenses
	3.5	4.2	7.7	Tax benefit
	(6.4)	(8.5)	(14.4)	Net of tax
Total reclassifications for the period	\$ 19.8	\$ 12.7	\$ 37.0	Net of tax

The amount reclassified from accumulated other comprehensive income for the pension and postretirement benefits was allocated approximately 40% to loss adjustment expenses and 60% to other operating expenses for each of the years ended December 31, 2016, 2015 and 2014. In 2014, \$12.1 million of this amount represented the accelerated recognition of unamortized losses due to the settlement of pension plan obligations.

## 11. STOCK-BASED COMPENSATION PLANS

On May 20, 2014, shareholders approved The Hanover Insurance Group 2014 Long-Term Incentive Plan (the “2014 Stock Plan”). With respect to new share-based award issuances, the 2014 Stock Plan replaced The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan (the “2006 Stock Plan”) and authorized the issuance of 6,100,000 shares in a new share pool plus any shares subject to outstanding awards under the 2006 Stock Plan that may become available for reissuance as a result of the cash settlement, forfeiture, expiration or cancellation of such awards. The 2014 Stock Plan provides for the granting of the same types of awards as the 2006 Stock Plan, including stock options and stock appreciation rights (“SARS”), restricted and unrestricted stock, stock units, performance and market-based stock awards, and cash awards. In accordance with the 2014 Stock Plan, the issuance of one share of common stock in the form of an option or SAR will reduce the share pool by one share, whereas the issuance of one share of common stock for the

other types of stock awards provided by the plan will reduce the pool by 3.8 shares. As of December 31, 2016, there were 5,332,623 shares available for grants under the 2014 Stock Plan.

Additionally, on May 20, 2014, shareholders approved The Hanover Insurance Group 2014 Employee Stock Purchase Plan (the “ESPP Plan”) and the Chaucer Share Incentive Plan (the “SIP Plan”), authorizing the issuance of 2,500,000 and 750,000 shares, respectively, under such plans. As of December 31, 2016, 2,411,811 shares and 699,018 shares were available for grant under the ESPP Plan and the SIP Plan, respectively.

Compensation cost for the years ended December 31, 2016, 2015, and 2014 totaled \$12.0 million, \$12.3 million and \$15.1 million, respectively. Related tax benefits were \$4.2 million, \$4.3 million and \$5.3 million, respectively.

### STOCK OPTIONS

Under the 2014 Stock Plan, options may be granted to eligible employees, directors or consultants at an exercise price equal to the market price of the Company’s common stock on the date of grant. Option shares may be exercised subject to the terms prescribed by the Compensation Committee of the Board of Directors (the “Committee”) at the time of grant. Options granted in 2016, 2015 and 2014 generally vest over 3 years with 33 1/3% vesting in each year. Options must be exercised not later than ten years from the date of grant.

Information on the Company's stock options is summarized below.

YEARS ENDED DECEMBER 31	2016		2015		2014	
(in whole shares and dollars)						
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding, beginning of year	1,619,948	\$ 56.57	2,236,620	\$ 46.61	2,049,173	\$ 41.18
Granted	587,340	82.17	663,900	70.34	687,700	58.06
Exercised	(589,666)	48.99	(1,051,664)	44.47	(444,200)	39.33
Forfeited or cancelled <sup>(1)</sup>	(221,470)	68.61	(228,908)	54.78	(56,053)	45.99
Outstanding, end of year <sup>(1)</sup>	1,396,152	\$ 68.63	1,619,948	\$ 56.57	2,236,620	\$ 46.61
Exercisable, end of year	441,256	\$ 53.59	360,585	\$ 46.10	726,321	\$ 43.55

(1) Included in outstanding shares at the end of 2015 in this table and in subsequent metrics were 128,334 options that were previously granted to the Company's former CEO. These options were subsequently forfeited in 2016 and are included in the table in the amounts forfeited or cancelled in 2016.

Cash received for options exercised for the years ended December 31, 2016, 2015 and 2014 was \$15.8 million, \$15.9 million and \$10.9 million, respectively. The intrinsic value of options exercised for the years ended December 31, 2016, 2015 and 2014 was \$21.1 million, \$38.7 million and \$10.6 million, respectively.

The excess tax expense realized from options exercised for the years ended December 31, 2016, 2015 and 2014 was \$5.6 million, \$9.7 million, and \$5.9 million, respec-

tively. The aggregate intrinsic value at December 31, 2016 for shares outstanding and shares exercisable was \$31.2 million and \$16.5 million, respectively. At December 31, 2016, the weighted average remaining contractual life for shares outstanding and shares exercisable was 8.1 years and 6.5 years, respectively. Additional information about employee options outstanding and exercisable at December 31, 2016 is included in the following table:

Range of Exercise Prices	Options Outstanding		Options Currently Exercisable	
	Number	Weighted Average Remaining Contractual Lives	Number	Weighted Average Exercise Price
\$ 34.19 to \$46.47	188,603	5.15	188,603	\$ 40.64
\$ 57.99 to \$62.57	269,907	7.15	145,994	58.06
\$ 69.09 to \$73.30	381,182	8.17	105,910	70.30
\$ 74.88 to \$90.42	556,460	9.38	749	79.54

The fair value of each option is estimated on the date of grant using the Black-Scholes option pricing model. For all options granted through December 31, 2016, the exercise price equaled the market price on the grant date. Compensation cost related to options is based upon the grant date fair value and expensed on a straight-line basis

over the service period for each separately vesting portion of the option as if the option was, in substance, multiple awards.

The weighted average grant date fair value of options granted during the years ended December 31, 2016, 2015 and 2014 was \$10.83, \$9.72 and \$8.96, respectively.

The following significant assumptions were used to determine the fair value for options granted in the years indicated.

	2016	2015	2014
Dividend yield	2.04% to 2.46%	2.03% to 2.37%	2.07% to 2.55%
Expected volatility	18.08% to 21.31%	17.63% to 22.24%	18.07% to 24.38%
Weighted average expected volatility	19.57%	20.19%	23.00%
Risk-free interest rate	0.77% to 1.97%	0.70% to 1.75%	0.53% - 1.92%
Expected term, in years	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5

The expected dividend yield is based on the Company's dividend payout rate(s), in the year noted. Expected volatility is based generally on the Company's historical daily stock price volatility. The risk-free rate for periods within the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant. The expected term of options granted represents the period of time that options are expected to be outstanding and is derived primarily using historical exercise, forfeit and cancellation behavior, along with certain other factors expected to differ from historical data.

The fair value of shares that vested during the years ended December 31, 2016 and 2015 was \$26.8 million and \$20.4 million, respectively. As of December 31, 2016, the Company had unrecognized compensation expense of \$5.0 million related to unvested stock options that is expected to be recognized over a weighted average period of 1.6 years.

## RESTRICTED STOCK UNITS

Stock grants may be awarded to eligible employees at a price established by the Committee (which may be zero). Under the 2014 Stock Plan, the Company may award shares of restricted stock, restricted stock units, as well as shares of unrestricted stock. Restricted stock grants may vest based upon performance criteria, market criteria or continued employment and be in the form of shares or units. Vesting periods are established by the Committee.

The Company granted market-based restricted share units in 2016, 2015 and 2014. These units generally vest after 3 years of continued employment and after the achievement of certain stock performance targets. The Company also granted restricted stock units to eligible employees in 2016, 2015 and 2014 that generally vest after 3 years of continued employment.

The following table summarizes information about employee restricted stock units:

YEARS ENDED DECEMBER 31	2016		2015		2014	
(in whole shares and dollars)						
	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value
Time-based restricted stock units:						
Outstanding, beginning of year	301,897	\$ 54.54	384,923	\$ 45.63	525,980	\$ 41.20
Granted	143,107	83.43	93,631	70.75	102,131	58.78
Vested	(139,183)	42.97	(138,307)	41.22	(231,078)	41.45
Forfeited	(36,758)	69.07	(38,350)	52.75	(12,110)	43.67
Outstanding, end of year	269,063	\$ 73.91	301,897	\$ 54.54	384,923	\$ 45.63
Performance and market-based restricted stock units:						
Outstanding, beginning of year	196,142	\$ 47.89	218,338	\$ 44.24	184,626	\$ 40.42
Granted	126,796	73.42	82,025	48.55	60,338	55.73
Vested	(144,141)	40.95	(82,748)	38.99	(22,826)	44.78
Forfeited <sup>(1)</sup>	(63,740)	58.54	(21,473)	47.53	(3,800)	37.90
Outstanding, end of year <sup>(1)</sup>	115,057	\$ 78.82	196,142	\$ 47.89	218,338	\$ 44.24

(1) Included in outstanding shares at the end of 2015 were 56,500 market-based restricted stock units that were previously granted to the Company's former CEO. These units were subsequently forfeited in 2016 and are included above in the amounts forfeited in 2016.

In 2016, 2015 and 2014, the Company granted market-based awards totaling 87,213, 80,738, and 56,625, respectively, to certain members of senior management, which are included in the table above as performance and market-based restricted stock activity. The vesting of these stock units is based on the relative total shareholder return ("TSR") of the Company. This metric is generally based on relative TSR for a three year period as compared to a group of Property and Casualty peer companies. The fair value of market based awards was estimated at the date of grant

using a valuation model. These units have the potential to range from 0% to 150% of the shares disclosed. Included in the amount granted above in 2016 were 30,453 shares related to market-based awards that achieved a payout in excess of 100%. Also included in the amounts granted above for the performance-based restricted stock units were 1,949 shares related to awards that a performance metric in excess of 100% was achieved. All of these awards vested in 2016.



Performance-based restricted stock units are based upon the achievement of the performance metric at 100%. These units have the potential to range from 0% to 200% of the shares disclosed, which varies based on grant year and individual participation level. Increases above the 100% target level are reflected as granted in the period in which performance-based stock unit goals are achieved. Decreases below the 100% target level are reflected as forfeited.

In 2016, performance and market-based stock units of 2,268 and 30,134 were included as granted due to completion levels in excess of 100% for units granted in 2014 and 2013, respectively. The weighted average grant date fair value of these awards was \$57.00 and \$41.77, respectively. In 2015, performance and market-based stock units of 3,125 and 36,875 were included as granted due to completion levels in excess of 100% for units granted in 2013 and 2012, respectively. The weighted average grant date fair value of these awards was \$42.44 and \$36.47, respectively. In 2014, performance and market-based stock units of 2,888 were included as granted due to completion levels in excess of 100% for units granted in 2012. The weighted average grant date fair value of these awards was \$43.31.

The intrinsic value of restricted stock and restricted stock units that vested during the years ended December 31, 2016, 2015 and 2014 was \$5.4 million, \$4.4 million and \$4.2 million, respectively. The intrinsic value for performance and market-based restricted stock units that vested in 2016, 2015 and 2014 was \$5.8 million, \$2.6 million and \$0.3 million, respectively. Forfeitures included in the table above for 2016, 2015 and 2014 related entirely to market-based restricted stock units.

At December 31, 2016, the aggregate intrinsic value of restricted stock units was \$24.5 million and the weighted average remaining contractual life was 1.4 years. The aggregate intrinsic value of performance and market-based restricted stock units was \$10.5 million and the weighted average remaining contractual life was 2.1 years. As of December 31, 2016, there was \$17.4 million of total unrecognized compensation cost related to unvested restricted stock units and performance and market-based restricted stock units, assuming performance and market-based restricted stock units are achieved at 100% of the performance metric. The cost is expected to be recognized over a weighted average period of 2.4 years. Compensation cost associated with restricted stock, restricted stock units and performance and market-based restricted stock units is generally calculated based upon grant date fair value, which is determined using current market prices.

## 12. EARNINGS PER SHARE AND SHAREHOLDERS' EQUITY TRANSACTIONS

The following table provides weighted average share information used in the calculation of the Company's basic and diluted earnings per share:

DECEMBER 31	2016	2015	2014
<i>(in millions, except per share data)</i>			
Basic shares used in the calculation of earnings per share	<b>42.8</b>	43.9	44.0
Dilutive effect of securities:			
Employee stock options	<b>0.2</b>	0.5	0.5
Non-vested stock grants	<b>0.2</b>	0.4	0.4
Diluted shares used in the calculation of earnings per share	<b>43.2</b>	44.8	44.9
Per share effect of dilutive securities on income from continuing operations	<b>\$ (0.04)</b>	\$ (0.14)	\$ (0.12)
Per share effect of dilutive securities on net income	<b>\$ (0.04)</b>	\$ (0.15)	\$ (0.13)

Diluted earnings per share during 2016, 2015 and 2014 excludes 0.6 million, 0.6 million and 0.7 million, respectively, of common shares issuable under the Company's stock compensation plans, because their effect would be antidilutive.

The Company's Board of Directors has authorized aggregate repurchases of the Company's common stock of up to \$900 million. Under the repurchase authorizations, the Company may repurchase, from time to time, common shares in amounts, at prices and at such times as the Company deems appropriate, subject to market conditions and other considerations. Repurchases may be executed using open market purchases, privately negotiated transactions, accelerated repurchase programs or other transactions. The Company is not required to purchase any specific number of shares or to make purchases by any certain date under this program. As of December 31, 2016, the Company has \$183.6 million available for repurchases under these repurchase authorizations. During 2016, the Company purchased 1.3 million shares of the Company's common stock at a cost of \$105.6 million.

### 13. DIVIDEND RESTRICTIONS

#### *U.S. INSURANCE SUBSIDIARIES*

The individual law of all states, including New Hampshire and Michigan, where Hanover Insurance and Citizens are domiciled, respectively, restrict the payment of dividends to stockholders by insurers. These laws affect the dividend paying ability of Hanover Insurance and Citizens.

Pursuant to New Hampshire's statute, the maximum dividends and other distributions that an insurer may pay in any twelve month period, without prior approval of the New Hampshire Insurance Commissioner, is limited to 10% of such insurer's statutory policyholder surplus as of the preceding December 31. Hanover Insurance declared dividends to its parent totaling \$218.8 million in 2016. No dividends were declared by Hanover Insurance in 2015 or 2014. Hanover Insurance cannot declare a further dividend to its parent without prior approval until April 2017, at which time the maximum dividend payable without prior approval would be \$216.8 million.

Pursuant to Michigan's statute, the maximum dividends and other distributions that an insurer may pay in any twelve month period, without prior approval of the Michigan Insurance Commissioner, is limited to the greater of 10% of policyholders' surplus as of December 31 of the immediately preceding year or the statutory net income less net realized gains, for the immediately preceding calendar year. Citizens declared dividends to its parent, Hanover Insurance, totaling \$70.0 million, \$63.0 million and \$66.0 million in 2016, 2015 and 2014, respectively. At December 31, 2016, the maximum dividend payable without prior approval was \$30.0 million. In December 2017, the maximum dividend declared payable without prior approval will increase by \$70.0 million to a total amount of \$100.0 million.

The statutes in both New Hampshire and Michigan require that prior notice to the respective Insurance Commissioner of any proposed dividend be provided and such Commissioner may, in certain circumstances, prohibit the payment of the proposed dividend.

#### *CHAUCER*

Dividend payments from Chaucer to its parent are regulated by U.K. law. Dividends from Chaucer are dependent on dividends from its subsidiaries. Annual dividend payments from Chaucer are limited to retained earnings that are not restricted by capital and other requirements for business at Lloyd's. Also, Chaucer must provide advance notice to the U.K.'s Prudential Regulation Authority ("PRA") of certain proposed dividends or other payments from PRA regulated entities. Dividend payments to THG from Chaucer entities totaled \$79.5 million, \$61.3 million and \$68.7 million in 2016, 2015 and 2014, respectively.

### 14. SEGMENT INFORMATION

The Company's primary business operations include insurance products and services provided through four operating segments. The domestic operating segments are Commercial Lines, Personal Lines and Other, and the Company's international operating segment is Chaucer. Commercial Lines includes commercial multiple peril, commercial automobile, workers' compensation, and other commercial coverages, such as inland marine, specialty program business, management and professional liability and surety. Personal Lines includes personal automobile, homeowners and other personal coverages. Chaucer includes marine and aviation, property, energy, casualty and other coverages (which includes international liability, specialist coverages, and syndicate participations), and U.K. motor business prior to June 30, 2015. Effective June 30, 2015, the Company transferred its U.K. motor business to an unaffiliated party. Included in Other are Opus Investment Management, Inc., which markets investment management services to institutions, pension funds and other organizations; earnings on holding company assets; and, a discontinued voluntary pools business. The separate financial information is presented consistent with the way results are regularly evaluated by the chief operating decision maker in deciding how to allocate resources and in assessing performance.

The Company reports interest expense related to debt separately from the earnings of its operating segments. This consists of interest on the Company's senior debentures, subordinated debentures, collateralized borrowings with the Federal Home Loan Bank of Boston, and letter of credit facility. Management evaluates the results of the aforementioned segments based on operating income before taxes, excluding interest expense on debt. Operating income before taxes excludes certain items which are included in net income, such as net realized investment gains and losses. Such gains and losses are excluded since they are determined by interest rates, financial markets and the timing of sales. Also, operating income before taxes excludes net gains and losses on disposals of businesses, gains and losses related to the repayment of debt, discontinued operations, costs to acquire businesses, restructuring costs, the cumulative effect of accounting changes and certain other items. Although the items excluded from operating income before taxes may be important components in understanding and assessing the Company's overall financial performance, management believes that the presentation of operating income before taxes enhances an investor's understanding of the Company's results of operations by highlighting net income attributable to the core operations of the business. However, operating income before taxes should not be

construed as a substitute for income before income taxes and operating income should not be construed as a substitute for net income.

Summarized below is financial information with respect to the Company's business segments.

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Operating revenues:			
Commercial Lines	\$2,485.0	\$2,391.7	\$2,239.0
Personal Lines	1,552.4	1,511.3	1,491.0
Chaucer	891.4	1,104.1	1,279.7
Other	8.4	7.4	7.8
Total	4,937.2	5,014.5	5,017.5
Net realized investment gains	8.6	19.5	50.1
Total revenues	\$4,945.8	\$5,034.0	\$5,067.6
Operating income (loss) before interest expense and income taxes:			
Commercial Lines:			
Underwriting loss	\$ (122.0)	\$ (12.7)	\$ (8.3)
Net investment income	158.5	156.3	149.4
Other expense	(0.6)	(0.3)	(1.2)
Commercial Lines operating income	35.9	143.3	139.9
Personal Lines:			
Underwriting income	103.8	72.0	22.1
Net investment income	69.5	72.5	71.9
Other income	5.1	4.8	5.0
Personal Lines operating income	178.4	149.3	99.0
Chaucer:			
Underwriting income	80.3	131.5	122.5
Net investment income	45.7	45.9	44.2
Other income	0.8	6.3	10.9
Chaucer operating income	126.8	183.7	177.6
Other:			
Underwriting loss	(10.8)	(1.9)	(3.1)
Net investment income	5.7	4.4	4.8
Other expense	(13.2)	(12.7)	(11.4)
Other operating loss	(18.3)	(10.2)	(9.7)
Operating income before interest expense and income taxes	322.8	466.1	406.8
Interest on debt	(54.9)	(60.6)	(65.8)
Operating income before income taxes	267.9	405.5	341.0
Non-operating income items:			
Net realized investment gains	8.6	19.5	50.1
Net loss from repayment of debt	(88.3)	(24.1)	(0.1)
Net gain on disposal of U.K. motor business	1.1	38.4	—
Loss from settlement of pension obligation	—	—	(12.1)
Other non-operating items	3.0	0.1	(0.9)
Income before income taxes	\$ 192.3	\$ 439.4	\$ 378.0

The following table provides identifiable assets for the Company's business segments and discontinued operations:

DECEMBER 31	2016	2015
(in millions)		
	Identifiable Assets	
U.S. Companies	\$ 10,225.4	\$ 9,616.0
Chaucer	3,915.5	4,082.2
Discontinued operations	79.5	83.0
Total	\$ 14,220.4	\$ 13,781.2

The Company reviews the assets of its U.S. Companies collectively and does not allocate them among the Commercial Lines, Personal Lines and Other segments.

#### GEOGRAPHIC CONCENTRATIONS

The following table presents the Company's gross premiums written ("GPW") based on the location of the risk:

YEARS ENDED DECEMBER 31	2016	2015	2014
	% of Total GPW		
United States	85%	81%	78%
United Kingdom	—	4%	6%
Worldwide and other	15%	15%	16%
Total	100%	100%	100%

The worldwide and other category includes insured risks that move across multiple geographic areas, including the U.S. and U.K., due to their mobile nature or insured risks that are fixed in locations that span more than one geographic area, and risks located in a single country outside the U.S. and U.K. These contracts include, for example, marine and aviation, hull, satellite, offshore energy exploration and production risks that can move across multiple geographic areas and assumed risks where the cedant insures risks in two or more geographic zones. These risks may include U.S. and U.K. insured risks.

Long-lived assets located outside the U.S. were not material for the years ended December 31, 2016 or 2015. The Company does not have revenue from transactions with a single agent or broker amounting to 10 percent or more of its consolidated revenue.

## 15. LEASE COMMITMENTS

Rental expenses for operating leases amounted to \$18.5 million, \$17.4 million and \$20.4 million in 2016, 2015 and 2014, respectively. These expenses relate primarily to building leases of the Company. At December 31, 2016, future minimum rental payments under non-cancelable operating leases were \$61.7 million, payable as follows: 2017 - \$16.7 million; 2018 - \$15.1 million; 2019 - \$12.2 million; 2020 - \$9.6 million and 2021 and thereafter - \$8.1 million. It is expected that in the normal course of business, leases that expire may be renewed or replaced by leases on other property and equipment.

## 16. REINSURANCE

In the normal course of business, the Company seeks to reduce the losses that may arise from catastrophes or other events that cause unfavorable underwriting results by reinsuring certain levels of risk in various areas of exposure with other insurance enterprises or reinsurers. Reinsurance transactions are accounted for in accordance with the provisions of ASC 944.

Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability associated with the reinsured policy. Reinsurance contracts do not relieve the Company from its obligations to policyholders. Failure of reinsurers to honor their obligations could result in losses to the Company; consequently, allowances are established for amounts deemed uncollectible. The Company determines the appropriate amount of reinsurance based on evaluations of the risks accepted and analyses prepared by consultants and on market conditions (including the availability and pricing of reinsurance). The Company also believes that the terms of its reinsurance contracts are consistent with industry practice in that they contain standard terms with respect to lines of business covered, limit and retention, arbitration and occurrence. The Company believes that its reinsurers are financially sound. This belief is based upon an ongoing review of its reinsurers' financial statements, reported financial strength ratings from rating agencies, reputations in the marketplace, and the analysis and guidance of THG's reinsurance advisors.

As a condition to conduct certain business in various states, the Company is required to participate in residual market mechanisms, facilities and pooling arrangements such as the Michigan Catastrophic Claims Association ("MCCA"). The Company is subject to concentration of risk with respect to reinsurance ceded to the MCCA. Funding for MCCA comes from assessments against automobile insurers based upon their share of insured automobiles in the state. Insurers are allowed to pass along this cost to Michigan automobile policyholders. The Company ceded to the MCCA premiums earned and losses and LAE

incurred of \$58.6 million and \$75.0 million in 2016, \$67.7 million and \$78.8 million in 2015 and \$73.4 million and \$99.2 million in 2014. The MCCA represented 34.9% of the total reinsurance receivable balance at December 31, 2016. Reinsurance recoverables related to MCCA were \$911.2 million and \$906.5 million at December 31, 2016 and 2015, respectively. Because the MCCA is supported by assessments permitted by statute, and there have been no significant uncollectible balances from MCCA identified during the three years ending December 31, 2016, the Company believes that it has no significant exposure to uncollectible reinsurance balances from this entity. The Lloyd's Syndicates total reinsurance receivable balance was \$506.8 million as of December 31, 2016, as compared to \$606.5 million as of December 31, 2015. The Lloyd's receivable represented 19.4% of the total reinsurance receivable balance at December 31, 2016.

The following table provides the effects of reinsurance.

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Premiums written:			
Direct	\$4,826.0	\$4,811.3	\$4,777.3
Assumed <sup>(1)</sup>	571.4	633.2	688.1
Ceded <sup>(2) (3)</sup>	(698.6)	(827.7)	(655.3)
Net premiums written	\$4,698.8	\$4,616.8	\$4,810.1
Premiums earned:			
Direct	\$4,746.6	\$4,814.4	\$4,679.8
Assumed <sup>(1)</sup>	601.7	655.6	696.4
Ceded <sup>(2) (3)</sup>	(720.2)	(765.2)	(665.9)
Net premiums earned	\$4,628.1	\$4,704.8	\$4,710.3
Percentage of assumed to net premiums earned	13.00%	13.93%	14.78%
Losses and LAE:			
Direct	\$3,188.2	\$3,008.5	\$3,019.4
Assumed <sup>(1)</sup>	289.4	312.4	266.1
Ceded <sup>(2) (4)</sup>	(512.9)	(436.8)	(358.0)
Net losses and LAE	\$2,964.7	\$2,884.1	\$2,927.5

(1) Assumed reinsurance activity primarily relates to the Chaucer segment.

(2) Effective June 30, 2015, the Company transferred its U.K. motor business through a 100% reinsurance arrangement. This transaction resulted in the increase of approximately \$196 million, \$133 million and \$90 million for ceded premiums written, premiums earned and losses and LAE, respectively, for the year ended December 31, 2015. See also "Disposal of U.K. Motor Business" in Note 2 – "Dispositions of Businesses".

(3) The decrease in ceded reinsurance premiums from 2015 to 2016 is primarily due to the above mentioned non-recurring U.K. motor activity in 2015, partially offset by a planned increase in Chaucer's ceded reinsurance premiums as the Company continues to manage its overall underwriting risk.

(4) The increase in ceded losses and LAE from 2015 to 2016 is primarily due to the aforementioned increase in Chaucer's reinsurance purchases in 2016 and due to a higher level of ceded large loss activity in certain Chaucer and domestic lines in 2016. These increases in ceded losses and LAE were partially offset by the above mentioned non-recurring U.K. motor activity in 2015.



## 17. LIABILITIES FOR OUTSTANDING CLAIMS, LOSSES AND LOSS ADJUSTMENT EXPENSES

### Reserving Process Overview

Management's process for establishing loss reserves is a comprehensive process that involves input from multiple functions throughout the organization, including actuarial, finance, claims, legal, underwriting, distribution and business operations management. A review of loss reserves for each of the classes of business which the Company writes is conducted regularly, generally quarterly. This review process takes into consideration a variety of trends that impact the ultimate settlement of claims. Where appropriate, the review includes a review of overall payment patterns and the emergence of paid and reported losses relative to expectations.

The loss reserve estimation process relies on the basic assumption that past experience, adjusted for the effects of current developments and likely trends, is an appropriate basis for predicting future outcomes. As part of this process, the Company uses a variety of analytical methods that consider experience, trends and other relevant factors. Incurred but not reported ("IBNR") reserves are generally calculated by first projecting the ultimate cost of all claims that have been reported or expected to be reported in the future and then subtracting reported losses and loss adjustment expenses. IBNR reserves include both incurred- but-not-reported liabilities plus expected development on reported claims included in the liability for unpaid claims and claim adjustment expenses. Reported losses include cumulative paid losses and loss adjustment expenses plus outstanding case reserves. The Company's ultimate IBNR reserves are estimated by management and reserving actuaries on an aggregate basis for each line of business or coverage for loss and loss expense liabilities not reflected within the case reserves. Case reserves are established by claim personnel individually on a claim by claim basis and based on information specific to the occurrence and terms of the underlying policy. Case reserves are periodically reviewed and modified based on new or additional information pertaining to the claim.

For events designated as catastrophes which affect the Commercial and Personal Lines business segments, the Company generally calculates IBNR reserves directly as a result of an estimated IBNR claim count and an estimated average claim amount for each event. Such an assessment involves a comprehensive analysis of the nature of the

event, of policyholder exposures within the affected geographic area and of available claims intelligence. For events designated as catastrophes that affect the Chaucer business segment, the Company initially calculates IBNR reserves using a ground up exposure by exposure analysis based on each cedant or insured. These are supported by broker supplied information, catastrophe modeling and industry event estimates.

Carried reserves for each line of business and coverage are determined based on this quarterly loss reserving process. In making the determination, the Company considers numerous quantitative and qualitative factors. Quantitative factors include changes in reserve estimates in the period, the maturity of the accident year, trends observed over the recent past, the level of volatility within a particular class of business, the estimated effects of reinsurance, including reinstatement premiums, general economic trends, and other factors. Qualitative factors may include legal and regulatory developments, changes in claim handling and case reserving practices, recent entry into new markets or products, changes in underwriting practices, concerns that the Company does not have sufficient or quality historical reported and paid loss and LAE information with respect to a particular line or segment of business, effects of the economy and political outlook, perceived anomalies in the historical results, evolving trends or other factors.

### Reserve Rollforward and Prior Year Development

The Company regularly updates its reserve estimates as new information becomes available and further events occur which may impact the resolution of unsettled claims. Reserve adjustments are reflected in results of operations as adjustments to losses and LAE. Often these adjustments are recognized in periods subsequent to the period in which the underlying policy was written and loss event occurred. These types of subsequent adjustments are described as "prior years' loss reserves". Such development can be either favorable or unfavorable to the Company's financial results and may vary by line of business. In this section, all amounts presented include catastrophe losses and LAE, unless otherwise indicated.



The table below provides a reconciliation of the gross beginning and ending reserve for unpaid losses and loss adjustment expenses.

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Gross loss and LAE reserves, beginning of year	\$6,574.4	\$6,391.7	\$6,231.5
Reinsurance recoverable on unpaid losses	2,280.8	1,983.0	2,030.4
Net loss and LAE reserves, beginning of year	4,293.6	4,408.7	4,201.1
Net incurred losses and LAE in respect of losses occurring in:			
Current year	2,859.3	3,000.2	3,044.9
Prior years	105.4	(116.1)	(117.4)
Total incurred losses and LAE	2,964.7	2,884.1	2,927.5
Net payments of losses and LAE in respect of losses occurring in:			
Current year	1,142.7	1,245.6	1,328.7
Prior years	1,367.2	1,418.4	1,398.9
Total payments	2,509.9	2,664.0	2,727.6
Commutation of Chaucer			
Flagstone reinsurance agreement	—	—	85.7
Transfer of U.K. motor business	—	(300.6)	—
Effect of foreign exchange rate changes	(73.8)	(34.6)	(78.0)
Net reserve for losses and LAE, end of year	4,674.6	4,293.6	4,408.7
Reinsurance recoverable on unpaid losses	2,274.8	2,280.8	1,983.0
Gross reserve for losses and LAE end of year	\$6,949.4	\$6,574.4	\$6,391.7

The following table provides a summary of (favorable)/unfavorable loss and LAE reserve development.

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
Commercial multiple peril	\$ 68.8	\$ 11.6	\$ (2.5)
Workers' compensation	(46.7)	(46.9)	(5.6)
Commercial automobile	27.5	23.3	15.1
Other commercial lines:			
AIX program business	75.1	74.7	10.9
General liability	56.0	14.3	2.3
Surety	35.3	1.5	(5.2)
Umbrella	(8.9)	(17.8)	(1.4)
Other lines	12.2	(13.5)	0.5
Total other commercial lines	169.7	59.2	7.1
Total Commercial Lines Segment	219.3	47.2	14.1
Personal automobile	4.8	(7.2)	(5.9)
Homeowners and other personal lines	5.8	(3.4)	0.8
Total Personal Lines Segment	10.6	(10.6)	(5.1)
Total Chaucer Segment	(132.8)	(153.0)	(127.8)
Total Other Segment	8.3	0.3	1.4
Total loss and LAE reserve development, including catastrophes	\$ 105.4	\$ (116.1)	\$ (117.4)

Within other commercial lines, general liability is comprised of both monoline general liability and certain management and professional liability coverages and other lines is primarily comprised of lawyers professional liability, fidelity, marine, miscellaneous property, and healthcare lines. Loss and LAE reserve development in the Other segment is related to run-off voluntary assumed reinsurance pools business.

As a result of continuing trends in the Company's business, reserves including catastrophes have been re-estimated for all prior accident years and were increased by \$105.4 million in 2016 in comparison to decreases of \$116.1 million and \$117.4 million in 2015 and 2014, respectively. As a result of the Company's 2016 fourth quarter reserve review of domestic lines of business, as discussed further below, carried reserves for prior accident years for domestic lines excluding catastrophes were increased by \$174.1 million in the fourth quarter, of which \$161.5 million related to Commercial Lines. The majority of this adjustment is attributed to long-tailed commercial liability coverages, including AIX program business. In general, higher than expected loss and LAE emergence in 2016 led the Company to adjust its reserve assumptions in its year-end reserve review and place greater weight on the adverse large loss and severity trends experienced in the most recent calendar years.

## 2016

In 2016, net unfavorable loss and LAE development was \$105.4 million, primarily as a result of net unfavorable development of \$219.3 million for Commercial Lines, partially offset by favorable development of \$132.8 million for Chaucer. The net unfavorable Commercial Lines development primarily resulted from higher than expected losses in other commercial lines of \$169.7 million, which includes the AIX program business. This was primarily driven by AIX programs and business classes which have since been terminated or substantially revised, general liability coverages in accident years 2012 through 2015, and surety bonds in accident years 2012 through 2015. The Company also experienced higher than expected losses within the commercial multiple peril lines of \$68.8 million for accident years 2012 through 2015 and commercial automobile of \$27.5 million in accident years 2012 through 2014, both primarily within liability coverages. Partially offsetting the unfavorable development was lower than expected losses of \$46.7 million within the workers' compensation line, primarily related to accident years 2013 through 2015, and, to a lesser extent, the commercial umbrella line primarily related to the 2015 accident year.

Chaucer's favorable development during 2016 was primarily the result of lower than expected losses in the property line of \$45.6 million, primarily in the 2013 through 2015 accident years, the energy line of \$31.9 million, primarily in the 2013 through 2015 accident years, and in the marine and aviation lines of \$27.4 million, primarily in the 2008, 2009, 2014 and 2015 accident years. Additionally, Chaucer experienced lower than expected losses within casualty and other lines, specifically the specialist and international liability lines, of \$15.3 million, primarily in the 2014 and prior accident years. Partially offsetting Chaucer's favorable development was the unfavorable impact of foreign exchange rate movements on prior years' loss reserves.

## 2015

In 2015, net favorable loss and LAE development was \$116.1 million, primarily as a result of favorable development of \$153.0 million for Chaucer, partially offset by net unfavorable development of \$47.2 million for Commercial Lines. As a result of the Company's year-end 2015 reserve review of domestic commercial and personal lines of business, carried reserves were adjusted among several of these lines of business, impacting the prior year development by line, although these adjustments had no impact on aggregate domestic carried reserves.

Chaucer's favorable development was primarily the result of lower than expected losses in the property line of \$43.8 million, primarily in the 2011 through 2014 acci-

dent years, the energy line of \$42.1 million, primarily in the 2012 through 2014 accident years, and in the marine and aviation lines of \$34.2 million, primarily in the 2010, 2012 and 2013 accident years. Additionally, Chaucer experienced lower than expected losses within casualty and other lines, specifically the specialist and international liability lines, of \$22.7 million primarily in the 2008, 2011 and 2013 accident years. Chaucer's favorable development was also partially attributable to the favorable impact of foreign exchange rate movements on prior years' loss reserves.

The net unfavorable Commercial Lines development primarily resulted from higher than expected losses in other commercial lines of \$59.2 million. This was primarily driven by AIX programs and business classes which have since been terminated and general liability lines in accident years 2009 through 2012, partially offset by lower than expected losses in the commercial umbrella line in accident years 2012 through 2014 and in the healthcare line in accident years 2010 through 2014. The Company also experienced higher than expected losses within the commercial automobile line of \$23.3 million, primarily related to liability coverage in accident years 2011 through 2013, and in the commercial multiple peril lines, primarily in accident years 2008, 2009 and 2011. Partially offsetting the unfavorable development was lower than expected losses of \$46.9 million within the workers' compensation line, primarily related to accident years 2005 through 2014, and, to a lesser extent, the commercial umbrella line related to accident years 2012 through 2014.

## 2014

In 2014, net favorable loss and LAE development was \$117.4 million, primarily as a result of favorable development of \$127.8 million for Chaucer, partially offset by net unfavorable development of \$14.1 million for Commercial Lines. Chaucer's favorable development was primarily the result of lower than expected losses in the marine and aviation lines of \$47.4 million, primarily in the 2011 through 2013 accident years. Additionally, Chaucer experienced lower than expected losses within the property line of \$30.6 million, primarily in the 2010 through 2013 accident years, and in casualty and other lines, specifically the specialty liability line of \$21.4 million, primarily in the 2010 and 2013 accident years. Chaucer's favorable development was also partially attributable to the favorable impact of foreign exchange rate movements on prior years' loss reserves.

The net unfavorable Commercial Lines development primarily resulted from higher than expected large losses within the commercial automobile coverages of \$23.1 million, which includes the AIX program business, primarily related to liability coverage in the 2009 through 2012 accident years. Partially offsetting the unfavorable develop-

ment was lower than expected losses within the workers' compensation line, primarily related to the 2007 through 2012 accident years, and the surety line, primarily related to the 2013 accident year.

#### 2016 Fourth Quarter Domestic Business Loss and LAE Reserve Increase

The table below provides a summary of (favorable)/unfavorable loss and LAE reserve development excluding catastrophes for the three months ended December 31, 2016:

<i>(in millions)</i>	
Commercial multiple peril	\$ 43.7
Workers' compensation	(32.0)
Commercial automobile	18.4
Other commercial lines:	
AIX program business	49.6
General liability	45.2
Surety	37.9
Umbrella	(9.4)
Other lines	8.1
Total other commercial lines	131.4
Total Commercial Lines Segment	161.5
Personal automobile	8.2
Homeowners and other personal lines	(3.0)
Total Personal Lines Segment	5.2
Total Other Segment	7.4
Total domestic business loss and LAE reserve development, excluding catastrophes <sup>(1)</sup>	\$174.1

(1) For the three months ended December 31, 2016, prior year reserve development for catastrophes was favorable of \$2.0 million for the domestic business.

Through the first nine months of 2016, the Company recorded \$61.5 million of unfavorable loss and LAE reserve development for the domestic business, excluding catastrophes, driven by higher than expected large losses in commercial liability coverages, primarily in the commercial multiple peril line and both the AIX program business and general liability coverages that are within other commercial lines. Additionally, the Company incurred higher than expected legal defense costs, a component of LAE expenses, during the first nine months of 2016. Other product lines also reported increased claim activity, including commercial automobile and surety.

There was an increased level of loss and LAE activity recorded in certain lines in 2015 that continued throughout 2016, and in some cases intensified into the fourth quarter, and appears to represent longer-term trends that management concluded required recognition. As a result of these trends, during the fourth quarter of 2016, the Company performed a more in-depth actuarial reserve review in several areas. The Company assessed the recent

large loss activity in the monoline and multiple peril general liability and surety lines and the emergence of such relative to the timing and amounts of expected large losses. For surety, the recent large loss activity emerged throughout 2016 and intensified during the fourth quarter. The Company also conducted additional analyses of general liability coverages and AIX program business within other commercial lines. The results of these analyses indicated that the assumed tail risk included in the loss development patterns needed to be increased. Claims and actuarial staff also conducted a review of legal defense costs and other claim-specific adjusting expenses as a result of an emerging trend of increased expenses in these areas over recent quarters. This review concluded that the ultimate costs of these loss adjustment expenses were higher than previously estimated, causing management to record an increase in estimated LAE, primarily in the commercial multiple peril and general liability product lines.

As a result of the fourth quarter reserve review, the Company recognized unfavorable prior year reserve development of \$174.1 million for the domestic business, excluding catastrophes, largely driven by adverse emergence in most Commercial Lines liability coverages reflecting worsening trends in the number and nature of high severity losses and higher than anticipated legal defense costs. The Company reacted to this adverse emergence by updating assumptions about loss severity, loss development patterns, expected loss ratios and loss adjustment expenses for the most recent accident years, placing greater weight on the adverse severity trends experienced in the most recent calendar years. The adverse development in the AIX program business was primarily due to the general liability and commercial automobile liability coverages in the 2011 through 2014 accident years. Additionally, the Company recognized adverse development in general liability and commercial multiple peril coverages primarily in accident years 2012 through 2015, contract surety business primarily related to the 2012 through 2015 accident years, and the commercial automobile line, primarily related to liability coverages for accident years 2012 through 2014. These increases in Commercial Lines reserves were partially offset by favorable development in the workers' compensation line, primarily in the 2013 through 2015 accident years and, to a lesser extent, commercial umbrella coverage in the 2015 accident year. The adverse prior year reserve development for Personal Lines was primarily due to higher than expected losses in bodily injury coverage in accident years 2013 through 2015. The adverse prior year development for the Other segment was due to run-off voluntary assumed reinsurance pools business. The reserve increase was based on an updated third-party actuarial study received in the fourth quarter for a pool that primarily consists of asbestos and environmental exposures.

## Carried Reserves

The table below summarizes the gross, ceded and net reserve for losses and LAE and reconciles to the incurred claims development in the following section. Accordingly, the commercial multiple peril, workers' compensation and commercial automobile liability lines presentation includes AIX program business. Chaucer is presented in two components, its ongoing core lines and its reinsured and run-off lines.

YEARS ENDED DECEMBER 31 (in millions)	2016			2015		
	Gross	Ceded	Net	Gross	Ceded	Net
Commercial multiple peril	\$ 978.0	\$ (82.1)	\$ 895.9	\$ 813.1	\$ (59.2)	\$ 753.9
Workers' compensation	715.5	(171.4)	544.1	713.1	(178.0)	535.1
Commercial automobile liability	431.7	(27.2)	404.5	390.3	(28.4)	361.9
Other lines	980.8	(195.6)	785.2	757.7	(159.2)	598.5
Total Commercial Lines and other	3,106.0	(476.3)	2,629.7	2,674.2	(424.8)	2,249.4
Personal automobile liability	1,416.8	(865.6)	551.2	1,395.0	(863.5)	531.5
Homeowners and other personal lines	137.2	(7.3)	129.9	132.7	(7.0)	125.7
Total Personal Lines	1,554.0	(872.9)	681.1	1,527.7	(870.5)	657.2
Chaucer core lines	1,832.4	(552.5)	1,279.9	1,767.6	(508.5)	1,259.1
Chaucer reinsured and run-off lines	457.0	(373.1)	83.9	604.9	(477.0)	127.9
Total Chaucer	2,289.4	(925.6)	1,363.8	2,372.5	(985.5)	1,387.0
Total loss and LAE reserves	\$ 6,949.4	\$ (2,274.8)	\$ 4,674.6	\$ 6,574.4	\$ (2,280.8)	\$ 4,293.6

Within total Commercial Lines and other, other lines is primarily comprised of general liability, including voluntary pools, umbrella, professional and management liability, marine, surety, and healthcare lines. Chaucer core lines includes marine and aviation, energy, property and casualty lines, primarily consisting of international liability and specialist liability coverages. Chaucer reinsured and run-off lines include financial and professional liability lines written in 2008 and prior and U.K. motor business, which was transferred through a 100 percent reinsurance contract as of June 30, 2015. Included in the above table, primarily in other lines, are \$61.0 million and \$57.7 million of gross asbestos and environmental reserves as of December 31, 2016 and 2015, respectively.

## Incurred claims development tables

For the following net reserve components, commercial multiple peril, workers' compensation, commercial automobile liability, personal automobile liability and Chaucer core lines, the Company is presenting incurred claims development tables by accident year. The commercial multiple peril, workers' compensation and commercial automobile liability lines presentation includes AIX program business. In each of these tables, the Company is presenting the number of years for which claims are typically outstanding, which is consistent with the period at which substantially all of the reserve development has emerged based on past history. The tables presented below include cumulative incurred loss and allocated loss adjustment expenses ("ALAE"), cumulative paid loss and ALAE and

IBNR balances at December 31, 2016. IBNR includes both incurred but not reported liabilities and expected development on reported claims. In addition, cumulative incurred claim counts are presented as of December 31, 2016 and claim duration is presented in a separate table disclosing the average annual percentage payout of incurred claims by age, net of reinsurance. Claim duration is calculated as an average of paid loss and ALAE divided by incurred loss and ALAE by elapsed year. The incurred claims development tables presented are reconciled to the net carried reserves in the preceding table as of December 31, 2016.

For the domestic lines, incurred claim count information presented represents claim frequency by individual claimant and measures the frequency of direct claim settlements that have resulted in or are expected to result in claim payments. Claim count information is presented in a manner consistent with that used in the quarterly loss reserving process. A single claim event, particularly in automobile lines, may result in multiple individual claimants and, therefore, multiple claim counts. Incurred claim counts are comprised of outstanding claims and those that are closed with a loss payment and exclude those that are closed without a loss payment. A single claim event may result in multiple claims closed with a payment when a claim is subsequently reopened with further payment. In this case, a reopened claim payment is counted as an incremental claim settlement. Claim count information is not available for direct and assumed participations in various involuntary pools and residual market

mechanisms, which represent approximately 5% or less of the total gross earned premium and gross incurred claims for the lines presented. Incurred claim counts are also not adjusted for the effect of claims ceded as part of reinsurance programs, although the incurred losses and cumulative paid losses presented in the following tables are presented net of reinsurance ceded.

For Chaucer core lines, the incurred claim count information presented represents claim frequency by individual claimant and measures the frequency of expected claim settlements that have resulted in or are expected to result in claim payments. While claim count information is only utilized in a limited portion of Chaucer's quarterly loss reserving process, the counts in the following Chaucer table are presented in a manner consistent with those used by the actuaries. A single claim event may result in multiple individual claimants, and therefore, multiple claim counts. Incurred claim counts are comprised of outstand-

ing claims and those that are closed with a loss payment and exclude those that are closed without payment. A single claim event may result in multiple claims closed with a payment when payments are made in multiple currencies. In this case, the payment in each currency is counted as an incremental claim count. A portion of the coverholder and assumed reinsurance business is reported as block claims, which represent multiple underlying individual claims for a particular loss event or for multiple loss events. Claim count information is not available for the underlying claims related to block claims, and block claims represent approximately 10% of gross incurred losses for Chaucer core lines. Therefore, these block claims are not included in the claim count information presented. Incurred claim counts are also not adjusted for the effects of claims ceded as part of reinsurance programs, although the incurred losses and cumulative paid losses presented in the following tables are presented net of reinsurance ceded.

## Commercial multiple peril

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Incurred Losses and ALAE, Net of Reinsurance						As of December 31, 2016	
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	IBNR	Cumulative Incurred Claim Count
2011	\$ 455.4	\$ 453.3	\$ 469.1	\$ 478.8	\$ 494.7	\$ 505.4	\$ 17.2	19,163
2012		480.0	462.8	456.2	459.7	475.6	20.5	17,054
2013			380.0	362.5	367.9	391.8	33.9	14,911
2014				443.9	439.6	464.8	62.9	16,102
2015					446.0	456.3	100.1	15,810
2016						447.1	181.7	15,512
Total						\$2,741.0		

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Cumulative Paid Losses and ALAE, Net of Reinsurance					
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016
2011	\$ 217.8	\$ 328.5	\$ 381.5	\$ 418.6	\$ 454.0	\$ 471.5
2012		175.8	307.5	350.8	389.3	424.2
2013			137.6	221.5	262.3	306.4
2014				171.7	267.8	316.0
2015					161.9	260.1
2016						140.3
Total						\$1,918.5
Total reserves for 2011 – 2016 accident years (incurred - paid)						822.5
Total reserves for 2010 and prior accident years						55.7
Unallocated loss adjustment expense						17.7
Net reserves at December 31, 2016						\$ 895.9



## Workers' compensation

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Incurred Losses and ALAE, Net of Reinsurance										As of December 31, 2016	
	2007 Unaudited	2008 Unaudited	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	IBNR	Cumulative Incurred Claim Count
2007 <sup>(1)</sup>	\$ 79.2	\$ 82.2	\$ 80.5	\$ 78.6	\$ 77.3	\$ 76.5	\$ 75.6	\$ 75.8	\$ 75.1	\$ 74.9	\$ 1.3	7,591
2008 <sup>(1)</sup>		88.9	93.9	88.0	81.5	81.5	80.6	79.8	80.5	80.4	1.6	8,930
2009			93.8	87.6	82.5	80.3	79.4	79.2	77.5	77.5	1.2	8,014
2010				115.5	116.9	115.8	115.9	116.3	114.9	114.7	2.6	10,152
2011					141.4	144.2	144.3	145.5	143.8	146.7	7.5	12,428
2012						176.3	171.1	165.2	157.2	162.9	12.6	12,983
2013							179.3	167.4	160.1	154.4	15.6	11,612
2014								182.1	172.9	154.7	22.3	10,748
2015									189.6	164.2	38.2	11,158
2016										189.6	75.1	14,103
Total										\$1,320.0		

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Cumulative Paid Losses and ALAE, Net of Reinsurance										2016
	2007 Unaudited	2008 Unaudited	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited		
2007 <sup>(1)</sup>	\$ 15.1	\$ 34.9	\$ 46.5	\$ 54.4	\$ 59.6	\$ 62.0	\$ 63.9	\$ 65.5	\$ 66.5	\$ 67.3	
2008 <sup>(1)</sup>		17.9	40.2	52.9	60.8	64.8	67.1	69.8	71.0	72.4	
2009			19.2	41.2	54.6	61.6	65.4	68.6	69.8	70.8	
2010				22.1	57.2	76.9	89.5	96.5	101.0	104.2	
2011					30.0	71.3	97.3	114.0	122.9	128.0	
2012						30.4	74.8	102.6	120.1	130.7	
2013							30.9	74.6	101.2	114.0	
2014								30.6	70.5	92.3	
2015									28.0	65.7	
2016										33.9	
Total										\$ 879.3	
Total reserves for 2007 – 2016 accident years (incurred - paid)										440.7	
Total reserves for 2006 and prior accident years										87.5	
Unallocated loss adjustment expense and other										15.9	
Net reserves at December 31, 2016										\$ 544.1	

(1) The incurred and cumulative paid losses and ALAE, IBNR and incurred claim counts retroactively include AIX business for all periods presented, including those periods that pre-date the acquisition of AIX on November 30, 2008.

## Commercial automobile liability

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Incurred Losses and ALAE, Net of Reinsurance						As of December 31, 2016	
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	IBNR	Cumulative Incurred Claim Count
2011	\$ 120.4	\$ 142.1	\$ 148.0	\$ 162.8	\$ 177.0	\$ 179.6	\$ 2.4	15,457
2012		166.8	167.5	173.7	189.9	198.0	5.7	14,786
2013			177.7	179.4	205.3	227.5	16.7	15,309
2014				168.5	163.3	177.3	28.7	13,464
2015					163.4	168.3	51.0	12,723
2016						157.0	87.6	10,748
Total						\$ 1,107.7		

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Cumulative Paid Losses and ALAE, Net of Reinsurance						2016
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	
2011	\$ 27.7	\$ 64.7	\$ 102.4	\$ 135.5	\$ 160.5	\$ 170.2	
2012		33.3	77.0	117.0	156.9	176.3	
2013			35.9	89.6	137.6	176.3	
2014				33.1	70.8	102.7	
2015					32.2	63.8	
2016						27.8	
Total						\$ 717.1	
Total reserves for 2011 – 2016 accident years (incurred - paid)						390.6	
Total reserves for 2010 and prior accident years						9.6	
Unallocated loss adjustment expense						4.3	
Net reserves at December 31, 2016						\$ 404.5	

## Personal automobile liability

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Incurred Losses and ALAE, Net of Reinsurance					As of December 31, 2016	
	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	IBNR	Cumulative Incurred Claim Count
2012	\$ 358.4	\$ 366.9	\$ 366.3	\$ 376.5	\$ 379.8	\$ 5.7	51,700
2013		348.2	339.6	338.3	343.0	6.5	49,278
2014			323.1	304.1	308.8	15.1	43,268
2015				327.4	334.1	40.5	41,989
2016					337.9	109.7	39,477
Total					\$1,703.6		

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Cumulative Paid Losses and ALAE, Net of Reinsurance				
	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016
2012	\$ 126.6	\$ 234.6	\$ 305.1	\$ 342.2	\$ 361.8
2013		115.3	210.5	273.3	310.1
2014			107.2	188.6	241.1
2015				112.9	205.4
2016					112.8
Total					\$1,231.2
Total reserves for 2012 – 2016 accident years (incurred - paid)					472.4
Total reserves for 2011 and prior accident years					66.5
Unallocated loss adjustment expense					12.3
Net reserves at December 31, 2016					\$ 551.2

## Chaucer core lines

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Incurred Losses and ALAE, Net of Reinsurance <sup>(1)</sup>						As of December 31, 2016	
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	IBNR	Cumulative Incurred Claim Count
2011 <sup>(2)</sup>	\$ 640.9	\$ 597.7	\$ 605.3	\$ 586.0	\$ 586.2	\$ 575.7	\$ 33.4	6,940
2012		420.5	337.2	342.4	325.0	318.0	31.5	5,690
2013			418.2	381.8	369.4	360.1	54.0	5,618
2014				457.7	391.6	397.1	80.4	6,934
2015					488.4	410.5	136.8	7,216
2016						505.2	329.9	4,404
Total						\$2,566.6		

YEARS ENDED DECEMBER 31

(in millions)

Accident Year	Cumulative Paid Losses and ALAE, Net of Reinsurance <sup>(1)</sup>						2016
	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016	
2011 <sup>(2)</sup>	\$ 134.2	\$ 296.3	\$ 391.0	\$ 438.6	\$ 489.3	\$ 513.2	
2012		55.4	144.7	200.0	228.7	246.7	
2013			58.2	158.4	228.4	257.5	
2014				52.0	162.2	227.8	
2015					52.5	146.8	
2016						79.1	
Total						\$1,471.1	
Total reserves for 2011 – 2016 accident years (incurred - paid)						1,095.5	
Total reserves for 2010 and prior accident years						129.5	
Reserves for nuclear energy classes						31.8	
Unallocated loss adjustment expense and other						23.1	
Net reserves at December 31, 2016						\$1,279.9	

(1) Chaucer incurred losses and ALAE and paid losses and ALAE that are denominated in foreign currencies are converted to U.S. dollars as of December 31, 2016, the most recent balance sheet date, for all years presented.

(2) The incurred and cumulative paid losses and ALAE, IBNR and reported claim counts retroactively includes the 6 month period that pre-dates the acquisition of Chaucer on July 1, 2011. Additionally, during 2011 Chaucer experienced an elevated level of high severity catastrophe events. For example, three such events, the February 2011 New Zealand earthquake, March 2011 Japanese tsunami and October 2011 Thailand floods totaled approximately \$125 million of incurred losses, and each event was in excess of \$30 million. Chaucer experienced no catastrophe events in excess of \$30 million from 2012 through 2016.

The following table is information about average historical claims duration as of December 31, 2016. The table is computed based on the paid and incurred claims data, net of reinsurance, for the accident years presented in the preceding claims development tables.

AVERAGE ANNUAL PERCENTAGE PAYOUT OF INCURRED CLAIMS BY AGE, NET OF REINSURANCE:

Unaudited	1	2	3	4	5	6	7	8	9	10
Commercial multiple peril	36.5%	22.6%	10.1%	8.9%	7.2%	3.5%				
Workers' compensation	20.0%	27.3%	16.5%	10.1%	5.9%	3.5%	2.6%	1.6%	1.6%	1.0%
Commercial automobile liability	17.3%	21.3%	20.1%	18.5%	11.9%	5.4%				
Personal automobile liability	33.8%	27.6%	17.9%	10.3%	5.2%					
Chaucer core lines	16.4%	27.0%	17.5%	8.4%	7.2%	4.1%				

## 18. COMMITMENTS AND CONTINGENCIES

### LEGAL PROCEEDINGS

#### Durand Litigation

On March 12, 2007, a putative class action suit captioned Jennifer A. Durand v. The Hanover Insurance Group, Inc., and The Allmerica Financial Cash Balance Pension Plan, was filed in the United States District Court for the Western District of Kentucky. The named plaintiff, a former employee of the Company's former life insurance and annuity business who received a lump sum distribution from the Company's Cash Balance Plan (the "Plan") at or about the time of her separation from the company, claims that she and others similarly situated did not receive the appropriate lump sum distribution because in computing the lump sum, the Company and the Plan understated the accrued benefit in the calculation. The plaintiff claims that the Plan underpaid her distributions and those of similarly situated participants by failing to pay an additional so-called "whipsaw" amount reflecting the present value of an estimate of future interest credits from the date of the lump sum distribution to each participant's retirement age of 65 ("whipsaw claim").

The plaintiff filed an Amended Complaint adding two new named plaintiffs and additional claims on December 11, 2009. Two of the three new claims set forth in the Amended Complaint were dismissed by the District Court, which action was upheld in November 2015 by the U.S. Court of Appeals, Sixth Circuit. The District Court, however, did allow to stand the portion of the Amended Complaint which set forth claims against the Company for breach of fiduciary duty and failure to meet notice requirements arising under the Employee Retirement Income Security Act of 1974 ("ERISA") from the various interest crediting and lump sum distribution matters of which plaintiffs complain, but only as to plaintiffs' "whipsaw" claim that remained in the case. On December 17, 2013, the Court entered an order certifying a class to bring "whipsaw" and related breach of fiduciary duty claims consisting of all persons who received a lump sum distribution between March 1, 1997 and December 31, 2003. The Company filed a summary judgment motion, prior to the decision on the appeal, that was based on the statute of limitations and seeks to dismiss the subclass of plaintiffs who received lump sum distributions prior to March 13, 2002. This summary judgment motion has been stayed pending additional discovery.

At this time, the Company is unable to provide a reasonable estimate of the potential range of ultimate liability if the outcome of the suit is unfavorable. The statute of limitations applicable to the sub-class consisting of all persons who received lump sum distributions between March 1, 1997 and March 12, 2002 has not yet been finally deter-

mined, and the extent of potential liability, if any, will depend on this determination. In addition, assuming for these purposes that the plaintiffs prevail with respect to claims that benefits accrued or payable under the Plan were understated, then there are numerous possible theories and other variables upon which any revised calculation of benefits as requested under plaintiffs' claims could be based. Any adverse judgment in this case against the Plan would be expected to create a liability for the Plan, with resulting effects on the Plan's assets available to pay benefits. The Company's future required funding of the Plan could also be impacted by such a liability.

#### OTHER MATTERS

The Company has been named a defendant in various other legal proceedings arising in the normal course of business. In addition, the Company is involved, from time to time, in examinations, investigations and proceedings by governmental and self-regulatory agencies. The potential outcome of any such action or regulatory proceedings in which the Company has been named a defendant or the subject of an inquiry or investigation, and its ultimate liability, if any, from such action or regulatory proceedings, is difficult to predict at this time. The ultimate resolutions of such proceedings are not expected to have a material effect on its financial position, although they could have a material effect on the results of operations for a particular quarter or annual period.

#### RESIDUAL MARKETS

The Company is required to participate in residual markets in various states, which generally pertain to high risk insureds, disrupted markets or lines of business or geographic areas where rates are regarded as excessive. The results of the residual markets are not subject to the predictability associated with the Company's own managed business, and are significant to both the personal and commercial automobile lines of business and the workers' compensation line of business.

## 19. STATUTORY FINANCIAL INFORMATION

The Company's U.S. insurance subsidiaries are required to file annual statements with state regulatory authorities prepared on an accounting basis prescribed or permitted by such authorities (statutory basis), as codified by the National Association of Insurance Commissioners. Permitted statutory accounting practices encompass all accounting practices that are not prescribed; such practices differ from state to state, may differ from company to company within a state, and may change in the future. The Company's U.S. insurance subsidiaries did not have any permitted practices as of or for the years ended December 31, 2016, 2015 and 2014.



Statutory capital and surplus differs from shareholders' equity reported in accordance with generally accepted accounting principles primarily because under the statutory basis of accounting, deferred acquisition costs are expensed when incurred and the recognition of deferred tax assets is based on different recoverability assumptions.

The following table provides statutory net income for the year ended December 31 and statutory capital and surplus as of December 31 for the periods indicated:

	2016	2015	2014
(in millions)			
<b>Statutory Net Income</b>			
U.S. Insurance Subsidiaries	\$ 158.0	\$ 175.9	\$ 204.3
<b>Statutory Capital and Surplus</b>			
U.S. Insurance Subsidiaries	\$2,173.4	\$2,192.8	\$2,057.1

The minimum statutory capital and surplus necessary to satisfy the Company's regulatory requirements was \$442.0 million, \$378.5 million and \$374.6 million, which equals the Authorized Control Level at December 31, 2016, 2015 and 2014, respectively.

## 20. QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

The quarterly results of operations for 2016 and 2015 are summarized below.

THREE MONTHS ENDED					
(in millions, except per share data)					
2016	March 31	June 30	Sept. 30	Dec. 31	
Total revenues	\$1,227.6	\$1,222.0	\$1,241.2	\$1,255.0	
Income (loss) from continuing operations	\$ 78.1	\$ 1.9	\$ 88.3	\$ (12.2)	
Net income (loss)	\$ 78.2	\$ 2.0	\$ 88.4	\$ (13.5)	
Income (loss) from continuing operations per share:					
Basic	\$ 1.82	\$ 0.04	\$ 2.07	\$ (0.29)	
Diluted <sup>(1)</sup>	\$ 1.79	\$ 0.04	\$ 2.06	\$ (0.29)	
Net income (loss) per share:					
Basic	\$ 1.82	\$ 0.05	\$ 2.07	\$ (0.32)	
Diluted <sup>(1)</sup>	\$ 1.80	\$ 0.05	\$ 2.06	\$ (0.32)	
Dividends declared per share	\$ 0.46	\$ 0.46	\$ 0.46	\$ 0.50	

(1) Per diluted share amounts in the fourth quarter exclude common stock equivalents since the impact of these instruments was antidilutive.

In the second quarter of 2016, the Company issued \$375 million aggregate principal amount of 4.5% senior unsecured debentures. The net proceeds were used, together with cash on hand, to redeem outstanding senior notes, resulting in a pre-tax loss of \$86.1 million. The after-tax effect of this loss was to decrease diluted earnings per share from income from continuing operations in the quarter by \$1.29. See also Note 6 – "Debt and Credit Arrangements" for further information.

In the fourth quarter of 2016, the Company recorded an adjustment to increase carried reserves for prior accident years by \$174.1 million. The after-tax effect of this charge was to decrease diluted earnings per share from income from continuing operations in the quarter by \$2.66. See also "2016 Fourth Quarter Domestic Business Loss and LAE Reserve Increase" in Note 17 – "Liabilities for Outstanding Claims, Losses and Loss Adjustment Expenses" for further information.

THREE MONTHS ENDED					
(in millions, except per share data)					
2015	March 31	June 30	Sept. 30	Dec. 31	
Total revenues	\$ 1,298.7	\$ 1,297.1	\$ 1,233.5	\$ 1,204.7	
Income from continuing operations	\$ 54.9	\$ 120.9	\$ 77.2	\$ 77.8	
Net income	\$ 54.9	\$ 120.7	\$ 78.3	\$ 77.6	
Income from continuing operations per share:					
Basic	\$ 1.24	\$ 2.74	\$ 1.75	\$ 1.80	
Diluted	\$ 1.22	\$ 2.69	\$ 1.72	\$ 1.76	
Net income per share:					
Basic	\$ 1.24	\$ 2.73	\$ 1.78	\$ 1.79	
Diluted	\$ 1.22	\$ 2.68	\$ 1.74	\$ 1.76	
Dividends declared per share	\$ 0.41	\$ 0.41	\$ 0.41	\$ 0.46	

Due to the use of weighted average shares outstanding when calculating earnings per common share, the sum of the quarterly per common share data may not equal the per common share data for the year.

## 21. SUBSEQUENT EVENTS

There were no subsequent events requiring adjustment to the financial statements and no additional disclosures required in the notes to the consolidated financial statements.

## Item 9 — Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

## Item 9A — Controls and Procedures

### DISCLOSURE CONTROLS AND PROCEDURES EVALUATION

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act).

#### LIMITATIONS ON THE EFFECTIVENESS OF CONTROLS

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls over financial reporting will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

#### CONCLUSION REGARDING THE EFFECTIVENESS OF DISCLOSURE CONTROLS AND PROCEDURES

Based on our controls evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this annual report, our disclosure controls and procedures were effective to provide reasonable assurance that (i) the information required to be disclosed by us in reports that we file or submit under

the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) material information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

#### MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the updated *Internal Control – Integrated Framework* issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the updated framework in *Internal Control – Integrated Framework*, our management concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

#### CHANGES IN INTERNAL CONTROL

Our management, including the Chief Executive Officer and the Chief Financial Officer, conducted an evaluation of the internal control over financial reporting, as required by Rule 13a-15(d) of the Exchange Act, to determine whether any changes occurred during the period covered by this Annual Report on Form 10-K that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, the Chief Executive and Chief Financial Officer concluded that there was no such change during the last quarter of the fiscal year covered by this Annual Report on Form 10-K that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## Item 9B — Other Information

None.

## PART III

### Item 10 — Directors, Executive Officers and Corporate Governance

#### DIRECTORS OF THE REGISTRANT

Except for the portion about executive officers and our Code of Conduct which is set forth below, this information is incorporated herein by reference from the Proxy Statement for the Annual Meeting of Shareholders to be held on May 16, 2017 to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934.

#### EXECUTIVE OFFICERS OF THE REGISTRANT

Set forth below is biographical information concerning our executive officers.

**Mark L. Berthiaume, 60**

*Executive Vice President*

*Chief Administration Officer*

Mr. Berthiaume joined THG in 2014 as Senior Vice President, Chief Administration Officer. Prior to joining the Company, from 2001 to 2014, Mr. Berthiaume held a number of senior roles with The Chubb Corporation, last serving as Senior Vice President, International Chief Information Officer. Previously, Mr. Berthiaume was Vice President, Specialty Insurance Chief Information Officer of Orion Capital/Royal and Sunalliance Insurance Group, from 1995 to 2001, and prior to that he held a number of systems development and support positions with several insurance companies, including THG.

**Christine Bilotti-Peterson, 46**

*Executive Vice President*

*Chief Human Resources Officer*

Ms. Bilotti-Peterson has led Human Resources since June 2014. From January 2013 to June 2014 she served as Vice President, Human Resources for our Commercial, Specialty and Personal Lines Division. Prior to joining THG, Ms. Bilotti-Peterson spent 15 years in a variety of positions at The Hartford Financial Services Group, Inc., last serving as Vice President, Human Resources. Ms. Bilotti-Peterson started her career with Korn Ferry International, where she placed C-level executives primarily in Insurance, Financial Services and Technology.

**Jeffrey M. Farber, 52**

*Executive Vice President*

*Chief Financial Officer*

Mr. Farber joined THG in October 2016, initially as Executive Vice President – Senior Finance Officer before assuming the role of Chief Financial Officer in November 2016. Mr. Farber joined THG after spending the last five years with American International Group (AIG). He joined AIG as Senior Vice President and Deputy Chief Financial

Officer and then was appointed Chief Risk Officer, Commercial and Consumer Business. Prior to AIG, Mr. Farber served as Executive Vice President and Chief Financial Officer of GAMCO Investors, Inc., a public company asset manager. Previously, he held senior accounting and finance roles at The Bear Stearns Companies, Inc., most recently as Senior Managing Director, Controller and Senior Vice President, responsible for finance, tax and global procurement. He began his career at Deloitte & Touche LLP, rising to partner in the firm.

**John Fowle, 47**

*Chief Executive Officer and*

*Chief Underwriting Officer, Chaucer*

Mr. Fowle was appointed Chief Executive Officer of Chaucer in February 2017 and Chief Underwriting Officer of Chaucer in January 2016. From 2009 to 2016, Mr. Fowle served as Active Underwriter of Chaucer Syndicate 1084. Mr. Fowle was previously Head of the Specialist Lines Division of Chaucer, as well as having responsibility for the overall strategy for Property. Prior to joining Chaucer, he worked in both the company and Lloyd's markets.

**J. Kendall Huber, 62**

*Executive Vice President*

*General Counsel and Assistant Secretary*

Mr. Huber has been General Counsel and Assistant Secretary since joining THG in 2000. Prior to joining THG, Mr. Huber was Executive Vice President, General Counsel and Secretary of Promus Hotel Corporation from 1999 to 2000. Previously, Mr. Huber was Vice President and Deputy General Counsel of Legg Mason, Inc. from 1998 to 1999, and of USF&G Corporation, where he was employed from 1990 to 1998. Mr. Huber was previously with the law firm now known as DLA Piper and a Lieutenant, U.S. Navy Judge Advocate General's Corps.

**Mark L. Keim, 51**

*Executive Vice President*

*Corporate Development and Strategy*

Mr. Keim joined THG in November 2016. Prior to joining THG, in 2010 Mr. Keim co-founded HealthReveal, Inc., a big data analytics company, serving as its Chief Financial Officer until joining THG. Previously, he held key leadership roles at Aetna, Inc., from 2008 to 2014, serving as global head of strategy and corporate development, as well as president of the organization's venture capital business. Before joining Aetna, he was senior vice president, strategy and business development at General Electric Company's GE Capital division, and held financial leadership roles at PepsiCo, Inc. and Salomon Brothers.

**Richard W. Lavey, 49***Executive Vice President**President, Personal Lines,**Field Operations and Chief Marketing Officer*

Mr. Lavey has been President, Personal Lines since November 2014, Chief Marketing Officer since 2011 and assumed responsibility for Field Operations in August 2016. Mr. Lavey joined THG in 2004 and during this time has also served in the following roles: Chief Distribution Officer, Senior Vice President, Operations and Marketing; Regional President, Northeast; and Vice President, Field Operations and Marketing & Distribution. Prior to joining the Company, Mr. Lavey worked for The Hartford Financial Services Group, Inc. and The Travelers Corp.

**John C. Roche, 53***Executive Vice President**President, Commercial Lines*

In August of 2016, in addition to his current responsibility as head of Business Insurance, Mr. Roche was given management responsibility for Specialty Insurance and named President of Commercial Lines. Mr. Roche had been Executive Vice President, President Business Insurance since 2013 and had led Field Operations since 2014. Prior to that he served as Senior Vice President, President Business Insurance from 2009 to 2013. From 2007 to 2009, Mr. Roche served as Vice President, Field Operations and from 2006 to 2007, Mr. Roche was Vice President, Underwriting and Product Management, Commercial Lines. From 1994 to 2006, Mr. Roche served in a variety of leadership positions at St. Paul Travelers Companies, Inc., last serving as Vice President, Commercial Accounts. Previously, Mr. Roche served in a variety of underwriting and management positions at Fireman's Fund Insurance Company and Atlantic Mutual Insurance Company.

**Mark Welzenbach, 57***Executive Vice President, Chief Claims Officer*

Mr. Welzenbach has been Chief Claims Officer of THG since joining the Company in 2005. Before joining the Company, Mr. Welzenbach was Senior Vice President, Claims for The Hartford Financial Services Group, Inc. from 1995 to 2005. Prior to that, he was Director of Claims from 1991 to 1995 for Travelers Insurance Company. Mr. Welzenbach began his career as a practicing attorney.

**Joseph M. Zubretsky, 60***President, Chief Executive Officer*

Mr. Zubretsky joined THG in June 2016 after almost nine years at Aetna, Inc., one of the nation's largest healthcare benefits and insurance providers, where he most recently served as Chief Executive Officer of Healthagen Holdings, a group of healthcare services and information technology companies. Prior to that, from 2013 to 2014, he served as Senior Executive Vice President leading Aetna's National Businesses, and from 2007 to 2013 served as Aetna's Chief Financial Officer. Prior to joining Aetna in 2007, Mr. Zubretsky served in a variety of senior management roles in the healthcare and financial services sector. Mr. Zubretsky began his career as an accountant, rising to partnership in the national insurance industry group at the accounting firm then known as Coopers & Lybrand.

**OTHER SENIOR CORPORATE OFFICERS OF THE REGISTRANT****Warren E. Barnes, 55***Vice President and Corporate Controller**Principal Accounting Officer*

Mr. Barnes was appointed Principal Accounting Officer in 2015. Mr. Barnes joined the Company in 1993, and has been its Controller since 1997. Before joining the Company, Mr. Barnes was employed from 1985 to 1993 by the public accounting firm then known as Price Waterhouse. He is a certified public accountant in the Commonwealth of Massachusetts.

**Ann K. Tripp, 58***Senior Vice President, Chief Investment Officer**President, Opus Investment Management, Inc.*

Ms. Tripp has been Chief Investment Officer and President of Opus Investment Management, Inc. since 2006. She joined the Company in 1987, and prior to becoming our Chief Investment Officer, served in a variety of increasingly senior roles within our investment department. Ms. Tripp is also the Investment Officer of the Hanover Insurance Group Foundation and serves on the board and sub-committees of several area non-profit organizations.

Pursuant to section 4.4 of the Company's by-laws, each officer shall hold office until the first meeting of the Board of Directors following the next annual meeting of the shareholders and until his or her respective successor is chosen and qualified unless a shorter period shall have been specified by the terms of his or her election or appointment, or in each case until such officer sooner dies, resigns, is removed or becomes disqualified.



## ANNUAL MEETING OF SHAREHOLDERS

The Board of Directors of THG has scheduled the 2017 Annual Meeting of Shareholders for May 16, 2017. The record date for determining the shareholders of the Company entitled to notice of and to vote at such Annual Meeting is March 17, 2017.

## CODE OF CONDUCT

Our Code of Conduct is available, free of charge, on our website at [www.hanover.com](http://www.hanover.com) under “About Us – Corporate Governance – Company Policies”. The Code of Conduct applies to our directors, officers and employees, including our Chief Executive Officer, Chief Financial Officer and Controller. We will disclose any future amendments to the Code of Conduct (other than technical, administrative or non-substantive amendments) within four business days following the date of such amendment. While we do not expect to grant waivers to our Code of Conduct, any such waivers to our Chief Executive Officer, Chief Financial Officer or Controller will be posted on our website at [www.hanover.com](http://www.hanover.com), as required by applicable law or New York Stock Exchange requirements. A printed copy of the

Code of Conduct will be provided free of charge by contacting the Company’s Corporate Secretary at the Company’s headquarters, 440 Lincoln Street, Worcester, MA 01653.

## Item 11 — Executive Compensation

Incorporated herein by reference from the Proxy Statement for the Annual Meeting of Shareholders to be held May 16, 2017, to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934.

## Item 12 — Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

### Securities Authorized for Issuance Under Equity Compensation Plans

The following table sets forth information as of December 31, 2016 with respect to compensation plans under which equity securities of the Company are authorized for issuance.

<i>Plan Category</i>	<i>Number of securities to be issued upon exercise of outstanding options, warrants and rights<sup>(1)</sup></i>	<i>Weighted average exercise price of outstanding options, warrants and rights</i>	<i>Number of securities remaining available for future issuance under equity compensation plans<sup>(2)</sup></i>
Equity compensation plans approved by security holders	1,820,072	\$ 68.63	8,443,452
Equity compensation plans not approved by security holders	—	—	—
Total	1,820,072	\$ 68.63	8,443,452

(1) Includes 423,920 shares of Common Stock which may be issued upon vesting of outstanding restricted stock units, performance-based restricted stock units (assuming the maximum award amount), or market-based restricted stock units (assuming the maximum award amount). The weighted average exercise price does not take these awards into account.

(2) On May 20, 2014, shareholders approved The Hanover Insurance Group 2014 Long-Term Incentive Plan (the “2014 Stock Plan”). With respect to new share-based award issuances, the 2014 Stock Plan replaced The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan (the “2006 Stock Plan”) and authorized the issuance of 6,100,000 shares in a new share pool plus any shares subject to outstanding awards under the 2006 Stock Plan that may become available for reissuance as a result of the cash settlement, forfeiture, expiration or cancellation of such awards. In accordance with the 2014 Stock Plan, the issuance of one share of common stock in the form of an option or SAR will reduce the share pool by one share, whereas the issuance of one share of common stock for the other types of stock awards provided by the plan will reduce the pool by 3.8 shares. Additionally, on May 20, 2014, the shareholders approved The Hanover Insurance Group 2014 Employee Stock Purchase plan and the Chaucer Share Incentive Plan, authorizing the issuance of 2,500,000 and 750,000 shares, respectively, under such plans.

Additional information related to Security Ownership of Certain Beneficial Owners and Management is incorporated herein by reference from the Proxy Statement for the Annual Meeting of Shareholders to be held May 16, 2017, to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934.

## Item 13 — Certain Relationships and Related Transactions, and Director Independence

Incorporated herein by reference from the Proxy Statement for the Annual Meeting of Shareholders to be held May 16, 2017, to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934.

## Item 14 — Principal Accounting Fees and Services

Incorporated herein by reference from the Proxy Statement for the Annual Meeting of Shareholders to be held May 16, 2017, to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934.



## PART IV

### Item 15 — Exhibits, Financial Statement Schedules

#### (A)(1) FINANCIAL STATEMENTS

The consolidated financial statements and accompanying notes thereto are included on pages 81 to 134 of this Form 10-K.

	<i>Page No. in this Report</i>
Report of Independent Registered Public Accounting Firm .....	81
Consolidated Statements of Income for the years ended December 31, 2016, 2015 and 2014 .....	82
Consolidated Statements of Comprehensive Income for the years ended December 31, 2016, 2015 and 2014.....	83
Consolidated Balance Sheets as of December 31, 2016 and 2015 .....	84
Consolidated Statements of Shareholders' Equity for the years ended December 31, 2016, 2015 and 2014 .....	85
Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015 and 2014 .....	86
Notes to Consolidated Financial Statements .....	87

#### (A)(2) FINANCIAL STATEMENTS SCHEDULES

	<i>Page No. in this Report</i>
I Summary of Investments - Other than Investments in Related Parties .....	147
II Condensed Financial Information of Registrant .....	148
III Supplementary Insurance Information .....	151
IV Reinsurance. ....	152
V Valuation and Qualifying Accounts .....	153
VI Supplemental Information Concerning Property and Casualty Insurance Operations.....	154

### (A)(3) EXHIBIT INDEX

- |  |  |
|--|--|
| <p>2.1 Stock Purchase Agreement, dated as of August 22, 2005, between The Goldman Sachs Group, Inc., as Buyer, and the Registrant, as Seller (the schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K), previously filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 24, 2005 and incorporated herein by reference.</p> <p>2.2 Stock Purchase Agreement, dated as of July 30, 2008, by and between the Registrant and Commonwealth Annuity and Life Insurance Company (the schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K), previously filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 4, 2008 and incorporated herein by reference.</p> <p>3.1 Certificate of Incorporation of the Registrant, previously filed as Exhibit 3.1 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 16, 2006 and incorporated herein by reference.</p> <p>3.2 Amended By-Laws of the Registrant, previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the Commission on November 21, 2006 and incorporated herein by reference.</p> <p>4.1 Specimen Certificate of the Registrant's Common Stock, previously filed as Exhibit 4 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 16, 2006 and incorporated herein by reference.</p> <p>4.2 Form of Indenture relating to the Debentures between the Registrant, as issuer, and State Street Bank &amp; Trust Company, as trustee, previously filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (File No. 33-96764) filed with the Commission on September 11, 1995 and incorporated herein by reference.</p> <p>4.3 Form of Global Debenture relating to the Registrant's 7 5/8% Senior Debentures due 2025, previously filed as Exhibit 4.2 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 16, 2006 and incorporated herein by reference.</p> | <p>4.4 Indenture, dated February 3, 1997, relating to the Registrant's Junior Subordinated Debentures, previously filed as Exhibit 3 to the Registrant's Current Report on Form 8-K filed with the Commission on February 5, 1997 and incorporated herein by reference.</p> <p>4.5 First Supplemental Indenture, dated July 30, 2009, amending the indenture dated February 3, 1997 relating to the Junior Subordinated Debentures of the Registrant, previously filed as Exhibit 4.5 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 1, 2010 and incorporated herein by reference.</p> <p>4.6 Form of Global Security representing \$300,000,000 principal amount of Junior Subordinated Debentures of the Registrant, previously filed as Exhibit 4.6 to the Registrant's Annual Report on Form 10-K filed with the Commission on March 1, 2010 and incorporated herein by reference.</p> <p>4.7 Indenture, dated January 21, 2010, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, previously filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 ASR (File No. 333-164446) filed with the Commission on January 21, 2010 and incorporated herein by reference.</p> <p>4.8 First Supplemental Indenture (to the Indenture dated January 21, 2010), dated February 23, 2010, related to the Registrant's 7.50% Notes due 2020, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, including the form of Global Note attached as Exhibit A thereto, previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 23, 2010 and incorporated herein by reference.</p> <p>4.9 Second Supplemental Indenture (to the Indenture dated January 21, 2010), dated as of June 17, 2011, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, including the form of Global Note attached as Exhibit A thereto, previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Commission on June 17, 2011 and incorporated herein by reference.</p> |
|--|--|

- 4.10 Indenture, dated as of March 20, 2013, by and between the Registrant, as issuer, and U.S. Bank National Association, as trustee, previously filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 (File No: 333-187373) filed with the Commission on March 20, 2013 and incorporated herein by reference.
- 4.11 First Supplemental Indenture (to the Indenture dated as of March 20, 2013), dated as of March 27, 2013, related to the 6.35% Subordinated Debentures due 2053, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Commission on March 27, 2013 and incorporated herein by reference.
- 4.12 Form of Security Certificate representing the 6.35% Subordinated Debentures due 2053, previously filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed with the Commission on March 27, 2013 and incorporated herein by reference.
- 4.13 Base Indenture, dated as of April 8, 2016, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016 and incorporated herein by reference.
- 4.14 First Supplemental Indenture (to the Base Indenture dated as of April 8, 2016), as of April 8, 2016, between the Registrant, as issuer, and U.S. Bank National Association, as trustee, previously filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016 and incorporated herein by reference.
- 4.15 Form of Security Certificate representing the 4.5% Notes due 2026, previously filed as Exhibit 4.3 to the Registrant's Current Report on Form 8-K filed with the Commission on April 8, 2016 and incorporated herein by reference.
- Management agrees to furnish the Securities and Exchange Commission, upon request, a copy of any other agreements or instruments of the Registrant and its subsidiaries defining the rights of holders of any non-registered debt whose authorized principal amount does not exceed 10% of the Registrant's total consolidated assets.
- +10.1 State Mutual Life Assurance Company of America Excess Benefit Retirement Plan, previously filed as Exhibit 10.5 to the Registrant's Registration Statement on Form S-1 (No. 33-91766) filed with the Commission on May 1, 1995 and incorporated herein by reference.
- +10.2 The Hanover Insurance Group Cash Balance Pension Plan, as amended, previously filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 4, 2016 and incorporated herein by reference.
- +10.3 The Hanover Insurance Group Retirement Savings Plan, as amended.
- +10.4 The Hanover Insurance Group, Inc. Amended and Restated Non-Qualified Retirement Savings Plan, previously filed as Exhibit 10.30 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 24, 2011 and incorporated herein by reference.
- +10.5 The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, as amended, previously filed as Annex I to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on March 29, 2012 and incorporated herein by reference.
- +10.6 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.33 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 27, 2009 and incorporated herein by reference.
- +10.7 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 8, 2011 and incorporated herein by reference.
- +10.8 Amendment to Outstanding Stock Options Issued under the Registrant's 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 8, 2011 and incorporated herein by reference.

- +10.9 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.38 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 26, 2013 and incorporated herein by reference.
- +10.10 Amendment to outstanding Stock Options issued under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.11 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.
- +10.11 Form of Restricted Stock Unit Agreement under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan, previously filed as Exhibit 10.40 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 26, 2013 and incorporated herein by reference.
- +10.12 Form of Performance-Based Restricted Stock Unit Agreement under The Hanover Insurance Group, Inc. 2006 Long-Term Incentive Plan previously filed as Exhibit 10.39 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 26, 2013 and incorporated herein by reference.
- +10.13 The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Annex I to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on April 3, 2014 and incorporated herein by reference.
- +10.14 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2014 and incorporated herein by reference.
- +10.15 Amendment to outstanding Stock Options issued under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.18 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.
- +10.16 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.19 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.
- +10.17 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan for Chief Executive Officer, previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on July 29, 2016 and incorporated herein by reference.
- +10.18 Form of Non-Qualified Stock Option Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan for Chief Financial Officer, previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 4, 2016 and incorporated herein by reference.
- +10.19 Form of Performance-Based Restricted Stock Unit Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2014 and incorporated herein by reference.
- +10.20 Form of Performance-Based Restricted Stock Unit Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.21 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.
- +10.21 Form of Performance-Based Restricted Stock Unit Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan for Chief Executive Officer, previously filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on July 29, 2016 and incorporated herein by reference.
- +10.22 Form of Performance-Based Restricted Stock Unit Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan for Chief Financial Officer, previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 4, 2016 and incorporated herein by reference.
- +10.23 Form of Restricted Stock Unit Agreement under The Hanover Insurance Group 2014 Long-Term Incentive Plan, previously filed as Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the Commission on May 20, 2014 and incorporated herein by reference.

- +10.24 The Hanover Insurance Group, Inc. 2014 Executive Short-Term Incentive Compensation Plan, previously filed as Annex IV to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on April 3, 2014 and incorporated herein by reference.
- +10.25 The Hanover Insurance Group, Inc. Amended and Restated Employment Continuity Plan, previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on August 11, 2008 and incorporated herein by reference.
- +10.26 Form of Side Letter Agreement for New Participants in The Hanover Insurance Group Amended and Restated Employment Continuity Plan waiving right to IRC §280G "Gross-Up" Payments, previously filed as Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on July 29, 2016 and incorporated herein by reference.
- +10.27 Description of 2015— 2016 Non-Employee Director Compensation, previously filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on July 30, 2015 and incorporated herein by reference.
- +10.28 Description of 2016— 2017 Non-Employee Director Compensation, previously filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on July 29, 2016 and incorporated herein by reference.
- +10.29 The Hanover Insurance Group, Inc. Non-Employee Director Deferral Plan, previously filed as Exhibit 10.28 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 27, 2009 and incorporated herein by reference.
- +10.30 Offer Letter, dated August 14, 2003, between the Registrant and Frederick H. Eppinger, Jr., as amended December 10, 2008, previously filed as Exhibit 10.25 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 27, 2009 and incorporated herein by reference.
- +10.31 Description of compensatory arrangements with Frederick H. Eppinger, Jr., previously filed as Item 5.02 in the Registrant's Current Report on Form 8-K filed with the Commission on September 16, 2015 and incorporated herein by reference.
- +10.32 Description of compensatory arrangements with David B. Greenfield, previously filed as Item 5.02 in the Registrant's Current Report on Form 8-K filed with the Commission on December 4, 2015 and incorporated herein by reference.
- +10.33 Offer Letter, dated October 26, 2015, between the Registrant and Eugene M. Bullis, previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on October 29, 2015 and incorporated herein by reference.
- +10.34 Transition Letter dated May 24, 2016 by and between Frederick H. Eppinger and the Registrant, previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on May 24, 2016 and incorporated herein by reference.
- +10.35 Extension Letter, effective May 5, 2016, by and between Eugene M. Bullis and the Registrant, previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on May 5, 2016 and incorporated herein by reference.
- +10.36 Offer Letter, dated May 15, 2016, by and between Joseph M. Zubretsky and the Registrant, previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on May 16, 2016 and incorporated herein by reference.
- +10.37 Offer Letter, dated September 21, 2016, by and between Jeffrey M. Farber and the Registrant, previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on September 23, 2016 and incorporated herein by reference.
- +10.38 Separation Agreement, dated August 5, 2016, by and between Andrew S. Robinson and the Registrant.
- +10.39 Description of 2015 Named Executive Officer Short-Term Incentive Compensation Program Awards, 2016 Named Executive Officer Short-Term Incentive Compensation Programs and 2016 Named Executive Officer Long-Term Incentive Compensation Programs, previously filed as Exhibit 10.34 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.



- +10.40 IRC Section 162(m) Deferral Letter for Certain Executive Officers of the Registrant, previously filed as Exhibit 10.34 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 27, 2009 and incorporated herein by reference.
- +10.41 Chaucer Pension Scheme, as amended, previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on August 9, 2011 and incorporated herein by reference.
- +10.42 The Chaucer Share Incentive Plan, previously filed as Annex II to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on April 3, 2014 and incorporated herein by reference.
- +10.43 The Hanover Insurance Group Amended and Restated 2014 Employee Stock Purchase Plan, previously filed as Exhibit 10.3 to the Registrant's Registration Statement on Form S-8 (File No. 333-196107) filed with the Commission on May 20, 2014 and incorporated herein by reference.
- +10.44 Form of Leadership Transition Severance Agreement, previously filed as Exhibit 10.40 to the Registrant's Annual Report on Form 10-K filed with the Commission on February 25, 2016 and incorporated herein by reference.
- 10.45 Federal Home Loan Bank of Boston Agreement for Advances, Collateral Pledge, and Security Agreement, dated September 11, 2009, previously filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the Commission on November 4, 2009 and incorporated herein by reference.
- 10.46 Form of Accident and Health Coinsurance Agreement between The Hanover Insurance Company, as Reinsurer, and First Allmerica Financial Life Insurance Company (the schedules and certain exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K), previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 4, 2008 and incorporated herein by reference.
- 10.47 Credit Agreement, dated November 12, 2013, among the Registrant, as Borrower, JPMorgan Chase Bank, N.A., as administrative agent, and various other lender parties, previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on November 18, 2013 and incorporated herein by reference.
- 10.48 Standby Letter of Credit Facility Agreement, dated October 15, 2015, among Chaucer Holdings Limited, Chaucer Corporate Capital (No. 3) Limited and the lenders party thereto from time to time, Lloyds Bank plc and ING Bank N.V., London Branch as mandated lead arrangers and Lloyds Bank plc as bookrunner, overdraft provider, facility agent of the other Finance Parties (as defined therein) and security agent to the Secured Parties (as defined therein), previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the Commission on October 20, 2015 and incorporated herein by reference.
- 10.49 Guaranty Agreement, dated October 15, 2015, among the Registrant and Lloyds Bank plc, as Facility Agent and Security Agent (each as defined therein), previously filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the Commission on October 20, 2015 and incorporated herein by reference.
- 12.1 Computation of Ratio of Earnings to Fixed Charges
- 21 Subsidiaries of THG
- 23 Consent of Independent Registered Public Accounting Firm
- 24 Power of Attorney
- 31.1 Certification of the Chief Executive Officer, pursuant to 15 U.S.C. 78m, 78o(d), as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of the Chief Financial Officer, pursuant to 15 U.S.C. 78m, 78o(d), as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002.

- 32.1 Certification of the Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of the Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002.
- 99.1 Internal Revenue Service Ruling dated April 15, 1995 previously filed as Exhibit 99.1 to the Registrant's Registration Statement on Form S-1 (No. 33-91766) filed with the Commission on May 1, 1995 and incorporated herein by reference.
- 101 The following materials from The Hanover Insurance Group, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 formatted in eXtensible Business Reporting Language ("XBRL"): (i) Consolidated Statements of Income for the years ended December 31, 2016, 2015 and 2014; (ii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2016, 2015 and 2014; (iii) Consolidated Balance Sheets at December 31, 2016 and 2015; (iv) Consolidated Statements of Shareholders' Equity for the years ended December 31, 2016, 2015 and 2014; (v) Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015 and 2014; (vi) related notes to these consolidated financial statements; and (vii) Financial Statement Schedules.
- + Management contract or compensatory plan or arrangement.
- Item 16 — Form 10K Summary
- None.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

THE HANOVER INSURANCE GROUP, INC.  
Registrant

Date: February 22, 2017

By: /s/ JOSEPH M. ZUBRETSKY  
Joseph M. Zubretsky,  
President, Chief Executive Officer and Director

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Date: February 22, 2017

By: /s/ JOSEPH M. ZUBRETSKY  
Joseph M. Zubretsky,  
President, Chief Executive Officer and Director

Date: February 22, 2017

By: /s/ JEFFREY M. FARBER  
Jeffrey M. Farber,  
Executive Vice President, and  
Chief Financial Officer

Date: February 22, 2017

By: /s/ WARREN E. BARNES  
Warren E. Barnes,  
Vice President, Corporate Controller and  
Principal Accounting Officer

Date: February 22, 2017

By: \*  
Michael P. Angelini,  
Chairman of the Board

Date: February 22, 2017

By: \*  
Richard H. Booth,  
Director

Date: February 22, 2017

By: \*  
Jane D. Carlin,  
Director

Date: February 22, 2017

By: \*  
P. Kevin Condron,  
Director

Date: February 22, 2017

By: \*  
Cynthia L. Egan,  
Director

Date: February 22, 2017

By: \*  
Karen C. Francis,  
Director

Date: February 22, 2017

By: \*  
Daniel T. Henry,  
Director

Date: February 22, 2017

By: \*  
Wendell J. Knox,  
Director

Date: February 22, 2017

By: \*  
Joseph R. Ramrath,  
Director

Date: February 22, 2017

By: \*  
Harriett Tee Taggart,  
Director

Date: February 22, 2017

\*By: /s/ JEFFREY M. FARBER  
Jeffrey M. Farber,  
Attorney-in-fact

# Schedule I

The Hanover Insurance Group, Inc.

## SUMMARY OF INVESTMENTS – OTHER THAN INVESTMENTS IN RELATED PARTIES

DECEMBER 31, 2016

(in millions)

Type of investment	Cost <sup>(1)</sup>	Value	Amount at which shown in the balance sheet
Fixed maturities:			
Bonds:			
United States Government and government agencies and authorities	\$ 1,272.6	\$ 1,265.5	\$ 1,265.5
States, municipalities and political subdivisions	1,065.4	1,095.0	1,095.0
Foreign governments	235.8	240.7	240.7
Public utilities	454.1	461.9	461.9
All other corporate bonds	4,204.2	4,265.2	4,265.2
Total fixed maturities	7,232.1	7,328.3	7,328.3
Equity securities:			
Common stocks:			
Public utilities	96.3	120.6	120.6
Banks, trusts and insurance companies	21.7	25.9	25.9
Industrial, miscellaneous and all other	376.8	426.9	426.9
Nonredeemable preferred stocks	3.6	11.0	11.0
Total equity securities	498.4	584.4	584.4
Mortgage loans on real estate <sup>(2)</sup>	297.6	297.2	297.6
Real estate	8.6	8.6	8.6
Other long-term investments <sup>(3)</sup>	223.7	227.8	227.6
Short-term investments	3.0	3.0	3.0
Total investments	\$ 8,263.4	\$ 8,449.3	\$ 8,449.5

(1) For equity securities, represents original cost, and for fixed maturities, original cost reduced by repayments and adjusted for amortization of premiums and accretion of discounts.

(2) Includes \$296.6 million of participating interests in commercial mortgage loans originated and serviced by a third-party. The Company shares, on a pro-rata basis, in all related cash flows of the underlying mortgages. Due to certain reacquisition rights retained by the third-party in the loan participation arrangement, the Company accounted for its participatory interest in mortgage loans as secured borrowings.

(3) The cost of other long-term investments differs from the carrying value due to market value changes in the Company's equity ownership of limited partnership investments. The value of other long-term investments differs from the carrying value due to cost basis partnership investments.

The condensed financial information should be read in conjunction with the consolidated financial statements and notes thereto.

# Schedule II

The Hanover Insurance Group, Inc.

## CONDENSED FINANCIAL INFORMATION OF REGISTRANT PARENT COMPANY ONLY STATEMENTS OF INCOME

YEARS ENDED DECEMBER 31	2016	2015	2014
(in millions)			
<b>Revenues</b>			
Net investment income	\$ 4.9	\$ 4.1	\$ 3.9
Net realized gains from sales and other	—	1.0	—
Interest income from loan to subsidiary	22.4	22.5	22.5
Other income	0.5	0.1	0.1
Total revenues	27.8	27.7	26.5
<b>Expenses</b>			
Interest expense	46.1	53.9	54.7
Loss from repayment of debt	88.3	24.1	0.1
Employee benefit related expenses	7.0	7.0	11.1
Interest expense on loan from subsidiary	6.3	—	—
Benefit related to acquired businesses	—	(0.7)	—
Other operating expenses	8.6	7.6	7.5
Total expenses	156.3	91.9	73.4
Net loss before income taxes and equity in income of subsidiaries	(128.5)	(64.2)	(46.9)
Income tax benefit	75.6	49.5	52.1
Equity in income of subsidiaries	207.0	345.2	277.4
Income from continuing operations	154.1	330.5	282.6
Income (loss) from discontinued operations (net of income tax benefit of \$1.7, \$0.4 and \$0.2 in 2016, 2015 and 2014)	1.0	1.0	(0.6)
Net income	155.1	331.5	282.0
Other comprehensive income (loss), net of tax	8.9	(152.5)	28.8
Comprehensive income	\$ 164.0	\$ 179.0	\$ 310.8

The condensed financial information should be read in conjunction with the consolidated financial statements and notes thereto.



## Schedule II *(continued)*

The Hanover Insurance Group, Inc.

### CONDENSED FINANCIAL INFORMATION OF REGISTRANT PARENT COMPANY ONLY BALANCE SHEETS

DECEMBER 31	2016	2015
<i>(in millions, except per share data)</i>		
<b>Assets</b>		
Fixed maturities - at fair value (amortized cost of \$116.5 and \$121.1)	\$ 116.4	\$ 121.3
Equity securities - at fair value (cost of \$1.0)	1.1	1.1
Cash and cash equivalents	10.1	8.6
Investments in subsidiaries	3,513.8	3,262.5
Net receivable from subsidiaries <sup>(1)</sup>	16.6	222.8
Deferred income tax receivable	31.7	7.4
Current income tax receivable	—	1.1
Other assets	1.1	2.5
Total assets	\$ 3,690.8	\$ 3,627.3
<b>Liabilities</b>		
Expenses and state taxes payable	\$ 8.0	\$ 18.1
Current income tax payable	30.5	—
Interest payable	8.2	7.9
Debt	786.6	756.9
Total liabilities	833.3	782.9
<b>Shareholders' Equity</b>		
Preferred stock, par value \$0.01 per share, 20.0 million shares authorized, none issued	—	—
Common stock, par value \$0.01 per share, 300.0 million shares authorized, 60.5 million shares issued	0.6	0.6
Additional paid-in-capital	1,846.7	1,833.5
Accumulated other comprehensive income	62.8	53.9
Retained earnings	1,875.6	1,803.5
Treasury stock at cost (18.1 and 17.5 million)	(928.2)	(847.1)
Total shareholders' equity	2,857.5	2,844.4
Total liabilities and shareholders' equity	\$ 3,690.8	\$ 3,627.3

(1) Net receivable from subsidiaries in 2015 includes a \$300.0 million note receivable from The Hanover Insurance Holdings, Ltd., parent company of Chaucer Holdings, Ltd. In 2016, this note receivable was contributed to The Hanover (Barbados) Capital, SRL, a wholly-owned subsidiary of THG.

The condensed financial information should be read in conjunction with the consolidated financial statements and notes thereto.

## Schedule II *(continued)*

The Hanover Insurance Group, Inc.

### CONDENSED FINANCIAL INFORMATION OF REGISTRANT PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

YEARS ENDED DECEMBER 31	2016	2015	2014
<i>(in millions)</i>			
<b>Cash flows from operating activities</b>			
Net income	\$ 155.1	\$ 331.5	\$ 282.0
Adjustments to reconcile net income to net cash provided by operating activities:			
(Gain) loss from discontinued operations	(1.0)	(1.0)	0.6
Net realized investment gains	—	(1.0)	—
Loss from retirement of debt	88.3	24.1	0.1
Equity in net income of subsidiaries	(207.0)	(345.2)	(277.4)
Dividends received from subsidiaries	228.1	5.1	70.2
Deferred income tax (benefit) expense	(39.0)	35.7	(29.9)
Change in expenses and taxes payable	20.7	(2.6)	11.4
Change in net receivable from subsidiaries	30.6	(5.9)	16.9
Other, net	8.3	6.1	4.3
Net cash provided by operating activities	284.1	46.8	78.2
<b>Cash flows from investing activities</b>			
Proceeds from disposals and maturities of fixed maturities	82.4	70.0	25.6
Purchase of fixed maturities	—	(11.9)	(28.6)
Net cash used for business acquisitions	(2.2)	(2.3)	(2.3)
Net cash provided by (used in) investing activities	80.2	55.8	(5.3)
<b>Cash flows from financing activities</b>			
Proceeds from debt borrowings	370.7	—	—
Proceeds from long-term intercompany borrowings	125.0	—	—
(Repayments) proceeds from short-term intercompany borrowings	(102.7)	102.7	—
Repurchases of debt	(571.9)	(15.1)	(0.7)
Repurchase of common stock	(105.6)	(127.3)	(20.4)
Dividends paid to shareholders	(80.4)	(74.2)	(67.0)
Proceeds from exercise of employee stock options	16.2	16.6	12.6
Other financing activities	(14.1)	(11.2)	(3.6)
Net cash used in financing activities	(362.8)	(108.5)	(79.1)
Net change in cash and cash equivalents	1.5	(5.9)	(6.2)
Cash and cash equivalents, beginning of year	8.6	14.5	20.7
Cash and cash equivalents, end of year	\$ 10.1	\$ 8.6	\$ 14.5

Included in other operating cash flows was the cash portion of dividends received from unconsolidated subsidiaries. Additionally, investment assets of \$78.5 million, \$76.9 million and \$1.0 million were transferred to the parent company in 2016, 2015 and 2014, respectively, to settle dividend obligations and other intercompany balances.

The condensed financial information should be read in conjunction with the consolidated financial statements and notes thereto.

# Schedule III

The Hanover Insurance Group, Inc.

## SUPPLEMENTARY INSURANCE INFORMATION

DECEMBER 31, 2016

(in millions)

Segments	Deferred acquisition costs	Future policy benefits, losses, claims and loss expenses	Unearned premiums	Other policy claims and benefits payable	Premium revenue	Net investment income	Benefits, claims, losses and settlement expenses	Amortization of deferred acquisition costs	Other operating expenses	Premiums written
Commercial, Personal and Other	\$ 402.8	\$ 4,663.8	\$ 1,995.1	\$ 6.4	\$ 3,789.5	\$ 233.7	\$ 2,545.4	\$ 803.6	\$ 593.7	\$ 3,882.7
Chaucer	114.7	2,289.4	569.0	—	838.6	45.7	419.3	231.6	113.7	816.1
Interest on Debt	—	—	—	—	—	—	—	—	54.9	—
Eliminations	—	(10.2)	(3.1)	—	—	—	—	—	(7.6)	—
Total	\$ 517.5	\$ 6,943.0	\$ 2,561.0	\$ 6.4	\$ 4,628.1	\$ 279.4	\$ 2,964.7	\$ 1,035.2	\$ 754.7	\$ 4,698.8

DECEMBER 31, 2015

(in millions)

Segments	Deferred acquisition costs	Future policy benefits, losses, claims and loss expenses	Unearned premiums	Other policy claims and benefits payable	Premium revenue	Net investment income	Benefits, claims, losses and settlement expenses	Amortization of deferred acquisition costs	Other operating expenses	Premiums written
Commercial, Personal and Other	\$ 385.5	\$ 4,204.6	\$ 1,892.3	\$ 5.6	\$ 3,653.6	\$ 233.2	\$ 2,367.4	\$ 778.0	\$ 508.0	\$ 3,727.5
Chaucer	123.3	2,372.5	651.7	—	1,051.2	45.9	516.7	255.2	154.5	889.3
Interest on Debt	—	—	—	—	—	—	—	—	60.6	—
Eliminations	—	(8.3)	(3.2)	—	—	—	—	—	(7.4)	—
Total	\$ 508.8	\$ 6,568.8	\$ 2,540.8	\$ 5.6	\$ 4,704.8	\$ 279.1	\$ 2,884.1	\$ 1,033.2	\$ 715.7	\$ 4,616.8

DECEMBER 31, 2014

(in millions)

Segments	Deferred acquisition costs	Future policy benefits, losses, claims and loss expenses	Unearned premiums	Other policy claims and benefits payable	Premium revenue	Net investment income	Benefits, claims, losses and settlement expenses	Amortization of deferred acquisition costs	Other operating expenses	Premiums written
Commercial, Personal and Other	\$ 370.3	\$ 3,966.3	\$ 1,819.1	\$ 5.1	\$ 3,488.5	\$ 226.1	\$ 2,293.8	\$ 748.5	\$ 480.4	\$ 3,578.7
Chaucer	155.4	2,425.8	768.1	—	1,221.8	44.2	633.7	291.5	182.9	1,231.4
Interest on Debt	—	—	—	—	—	—	—	—	65.8	—
Eliminations	—	(5.5)	(3.3)	—	—	—	—	—	(7.0)	—
Total	\$ 525.7	\$ 6,386.6	\$ 2,583.9	\$ 5.1	\$ 4,710.3	\$ 270.3	\$ 2,927.5	\$ 1,040.0	\$ 722.1	\$ 4,810.1

## **Schedule IV**

The Hanover Insurance Group, Inc.

### **REINSURANCE**

Incorporated herein by reference to Note 16 —“Reinsurance” in the Notes of the Consolidated Financial Statements included in Financial Statements and Supplemental Data of this Form 10-K.

# Schedule V

The Hanover Insurance Group, Inc.

## VALUATION AND QUALIFYING ACCOUNTS

DECEMBER 31

(in millions)

Description	Balance at beginning of period	Additions		Deductions	Balance at end of period
		Charged to costs and expenses	Charged to other accounts <sup>(1)</sup>		
2016					
Allowance for doubtful accounts	\$ 3.2	\$ 8.7	\$ —	\$ (8.2)	\$ 3.7
Allowance for uncollectible reinsurance recoverables <sup>(2)</sup>	9.7	3.4	0.1	(0.1)	13.1
	\$ 12.9	\$ 12.1	\$ 0.1	\$ (8.3)	\$ 16.8
2015					
Allowance for doubtful accounts	\$ 3.2	\$ 9.7	\$ —	\$ (9.7)	\$ 3.2
Allowance for uncollectible reinsurance recoverables <sup>(3)</sup>	15.9	—	0.2	(6.4)	9.7
	\$ 19.1	\$ 9.7	\$ 0.2	\$ (16.1)	\$ 12.9
2014					
Allowance for doubtful accounts	\$ 3.1	\$ 9.4	\$ —	\$ (9.3)	\$ 3.2
Allowance for uncollectible reinsurance recoverables	20.7	0.9	(0.3)	(5.4)	15.9
	\$ 23.8	\$ 10.3	\$ (0.3)	\$ (14.7)	\$ 19.1

(1) Amounts charged to other accounts include foreign exchange gains and losses.

(2) 2016 activity primarily relates to the impairment of a receivable that is associated with a single reinsurance counterparty that was placed into conservation by the state of California in July 2016. This counterparty is not involved in the Company's ongoing reinsurance program and the entire receivable related to this counterparty resulted from a one-time block reinsurance transaction that occurred in 2012 as part of the Company's exposure management actions.

(3) Includes a deduction of \$5.4 million related to the transfer of the U.K. motor business on June 30, 2015.



# Schedule VI

The Hanover Insurance Group, Inc.

## SUPPLEMENTAL INFORMATION CONCERNING PROPERTY AND CASUALTY INSURANCE OPERATIONS

YEARS ENDED DECEMBER 31

(in millions)

<i>Affiliation with Registrant</i>	<i>Deferred acquisition costs</i>	<i>Reserves for unpaid claims and claim adjustment expenses<sup>(1)</sup></i>	<i>Discount, if any, deducted from previous column<sup>(2)</sup></i>	<i>Unearned premiums<sup>(1)</sup></i>	<i>Earned premiums</i>	<i>Net investment income</i>
Consolidated Property and Casualty Subsidiaries						
2016	\$ 517.5	\$ 6,949.4	\$ —	\$ 2,561.0	\$ 4,628.1	\$ 279.4
2015	\$ 508.8	\$ 6,574.4	\$ —	\$ 2,540.8	\$ 4,704.8	\$ 279.1
2014	\$ 525.7	\$ 6,391.7	\$ —	\$ 2,583.9	\$ 4,710.3	\$ 270.3

	<i>Claims and claim adjustment expenses incurred related to</i>		<i>Amortization of deferred acquisition costs</i>	<i>Paid claims and claim adjustment expenses</i>	<i>Premiums written</i>
	<i>Current year</i>	<i>Prior years</i>			
2016	\$2,859.3	\$ 105.4	\$1,035.2	\$2,509.9	\$4,698.8
2015	\$ 3,000.2	\$ (116.1)	\$ 1,033.2	\$ 2,664.0	\$ 4,616.8
2014	\$ 3,044.9	\$ (117.4)	\$ 1,040.0	\$ 2,727.6	\$ 4,810.1

(1) Reserves for unpaid claims and claim adjustment expenses are shown gross of \$2,274.8 million, \$2,280.8 million and \$1,983.0 million of reinsurance recoverable on unpaid losses in 2016, 2015 and 2014, respectively. Unearned premiums are shown gross of prepaid premiums of \$222.4 million, \$256.2 million and \$197.8 million in 2016, 2015 and 2014, respectively. Reserves for unpaid claims and claims adjustment expense also include policyholder dividends.

(2) The Company does not use discounting techniques.

(This page has been left blank intentionally.)

(This page has been left blank intentionally.)

(This page has been left blank intentionally.)

## REGISTRAR & STOCK TRANSFER AGENT

Computershare Investor Services  
P.O. Box 30170  
College Station, TX 77842-3170  
800-317-4454

## INDEPENDENT ACCOUNTANTS

PricewaterhouseCoopers LLP  
101 Seaport Boulevard  
Suite 500  
Boston, MA 02210

## CORPORATE OFFICE

The Hanover Insurance Group, Inc.  
440 Lincoln Street  
Worcester, MA 01653

## PRINCIPAL SUBSIDIARIES

The Hanover Insurance Company  
440 Lincoln Street  
Worcester, MA 01653

Citizens Insurance Company of America  
808 North Highlander Way  
Howell, MI 48843

Chaucer Holdings Limited  
Plantation Place, 30 Fenchurch Street  
London, England EC3M 3AD

## FINANCIAL STRENGTH RATINGS

	A.M. Best	Standard & Poor's	Moody's
The Hanover Insurance Company	A	A	A3
Citizens Insurance Company of America	A	A	—

## DEBT RATINGS

The Hanover Insurance Group	A.M. Best	Standard & Poor's	Moody's
Senior Debt	bbb	BBB	Baa3
Subordinated Debentures	bb+	BB+	Ba1

## INVESTOR INFORMATION

Call our toll-free investor information line, 800-407-5222, to receive additional printed information, including our Form 10-Ks and quarterly reports on Form 10-Qs filed with the Securities and Exchange Commission, and for access to fax-on-demand services, shareholder services, pre-recorded messages, and other services. In addition, our company's filings with the Securities and Exchange Commission are available on our website at [www.hanover.com](http://www.hanover.com) under "Investors." Alternatively, investors may address questions to:

Oksana Lukasheva  
Vice President, Investor Relations  
The Hanover Insurance Group, Inc.  
508-855-2063  
[olukasheva@hanover.com](mailto:olukasheva@hanover.com)



The Hanover Insurance Group, Inc., based in Worcester, Mass., is the holding company for several property and casualty insurance companies, which together constitute one of the largest insurance businesses in the United States. For more than 160 years, The Hanover has provided a wide range of property and casualty products and services to businesses, individuals, and families. The Hanover distributes its products through a select group of independent agents and brokers. Together with its agents, the company offers standard and specialized coverages for small and mid-sized businesses, as well as insurance protection for homes, automobiles, and other personal items. Through its international member company, Chaucer, The Hanover also underwrites business at Lloyd's of London in the major insurance and reinsurance classes, including marine, casualty, energy, and property. For more information, please visit [www.hanover.com](http://www.hanover.com).

#### ANNUAL MEETING OF SHAREHOLDERS

The management and Board of Directors of The Hanover Insurance Group, Inc. invite you to attend the company's Annual Meeting of Shareholders. The meeting will be held on Tuesday, May 16, 2017, at 9:00 a.m. local time at The Hanover, 440 Lincoln Street, Worcester, Massachusetts.

#### CORPORATE GOVERNANCE

Our Corporate Governance Guidelines, Board Committee Charters, Code of Conduct, and other information are available on our website at [www.hanover.com](http://www.hanover.com) under "About Us—Corporate Governance." For a printed copy of any of these documents, shareholders may contact the company's secretary at our corporate offices.

The company has filed its CEO and CFO Section 302 certifications as exhibits to its Annual Report on Form 10-K for the year ended December 31, 2016. In 2016, the company also has submitted its annual CEO certification to the New York Stock Exchange, a copy of which is available on the company's website at [www.hanover.com](http://www.hanover.com) under "About Us—Corporate Governance—Certifications."

#### COMMON STOCK

The common stock of The Hanover Insurance Group, Inc. is traded on the New York Stock Exchange under the symbol "THG." As of the close of business on February 17, 2017, the company had approximately 18,543 shareholders of record. On the same date, the closing price of the company's common stock was \$90.46 per share.

#### COMMON STOCK PRICES

2016	High	Low
First Quarter	\$90.68	\$76.90
Second Quarter	\$91.15	\$80.41
Third Quarter	\$84.58	\$74.10
Fourth Quarter	\$91.66	\$74.88
2015	High	Low
First Quarter	\$73.47	\$67.74
Second Quarter	\$74.90	\$68.55
Third Quarter	\$83.28	\$74.76
Fourth Quarter	\$87.42	\$76.00



**The Hanover Insurance Company**  
440 Lincoln Street, Worcester, MA 01653

[hanover.com](http://hanover.com)

