

UNUM

Protecting the Workforce of the future

2016 | ANNUAL REPORT

About Unum

Unum Group (www.unum.com) is a leading provider of financial protection benefits in the United States and the United Kingdom. Its primary businesses are Unum US, Colonial Life, Unum UK, as well as a closed block of products that are still serviced, but not actively marketed. Unum's portfolio includes disability, life, accident, critical illness, cancer, dental and vision coverage, which help protect millions of working people and their families in the event of an illness or injury. In 2016, the company reported total revenue of $11.0 billion and paid $6.9 billion in benefits.

UNUM US

Unum US is a market leader in group and individual disability benefits in the United States, and is one of the largest providers of group life and voluntary workplace benefits.

COLONIAL LIFE

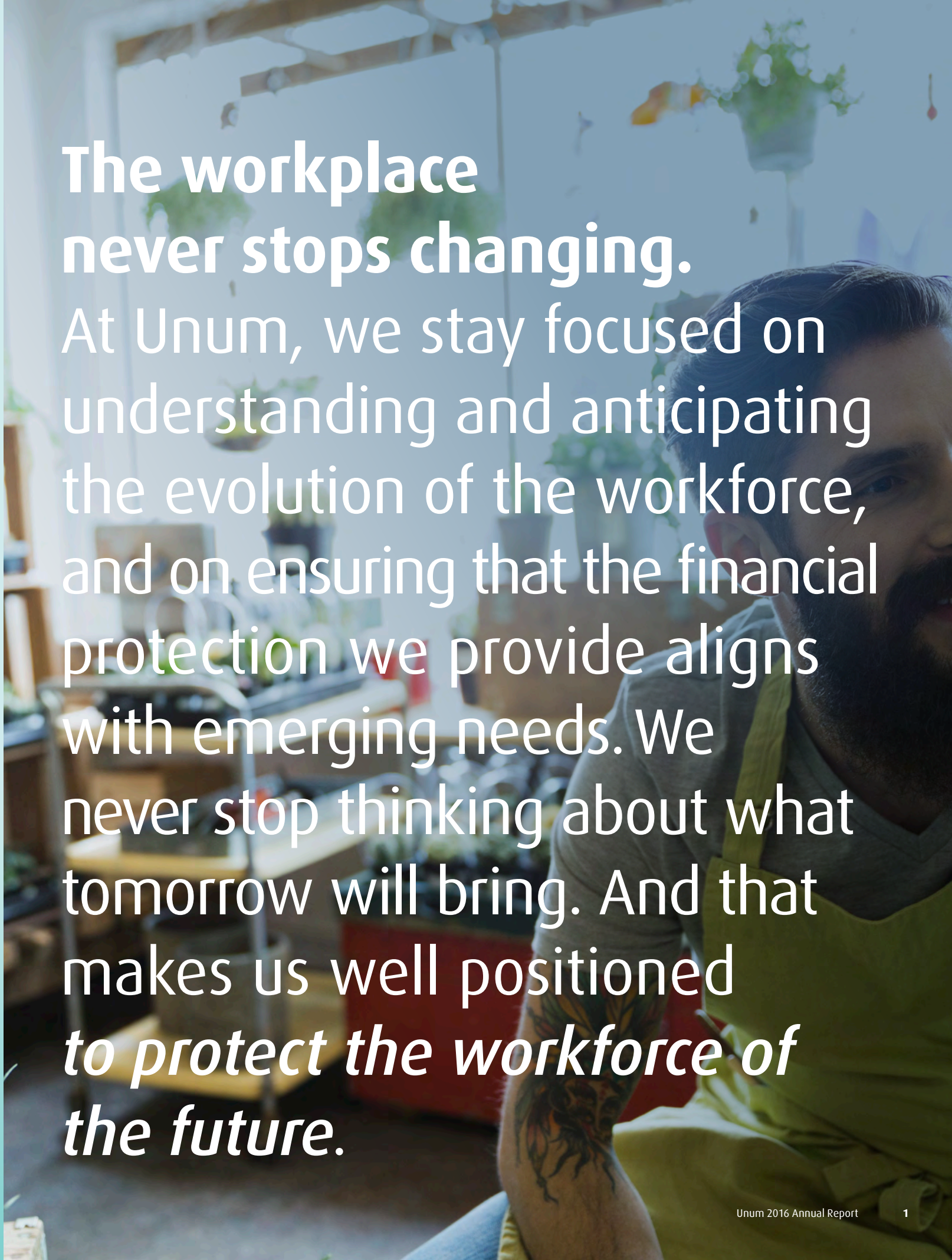
Colonial Life is one of the leading providers of voluntary worksite benefits, including disability, life, accident, critical illness, hospitalization and cancer coverage in the United States.

UNUM UK

Unum UK is the leading provider of group income protection and critical illness coverage in the United Kingdom, and also offers life and dental benefits.

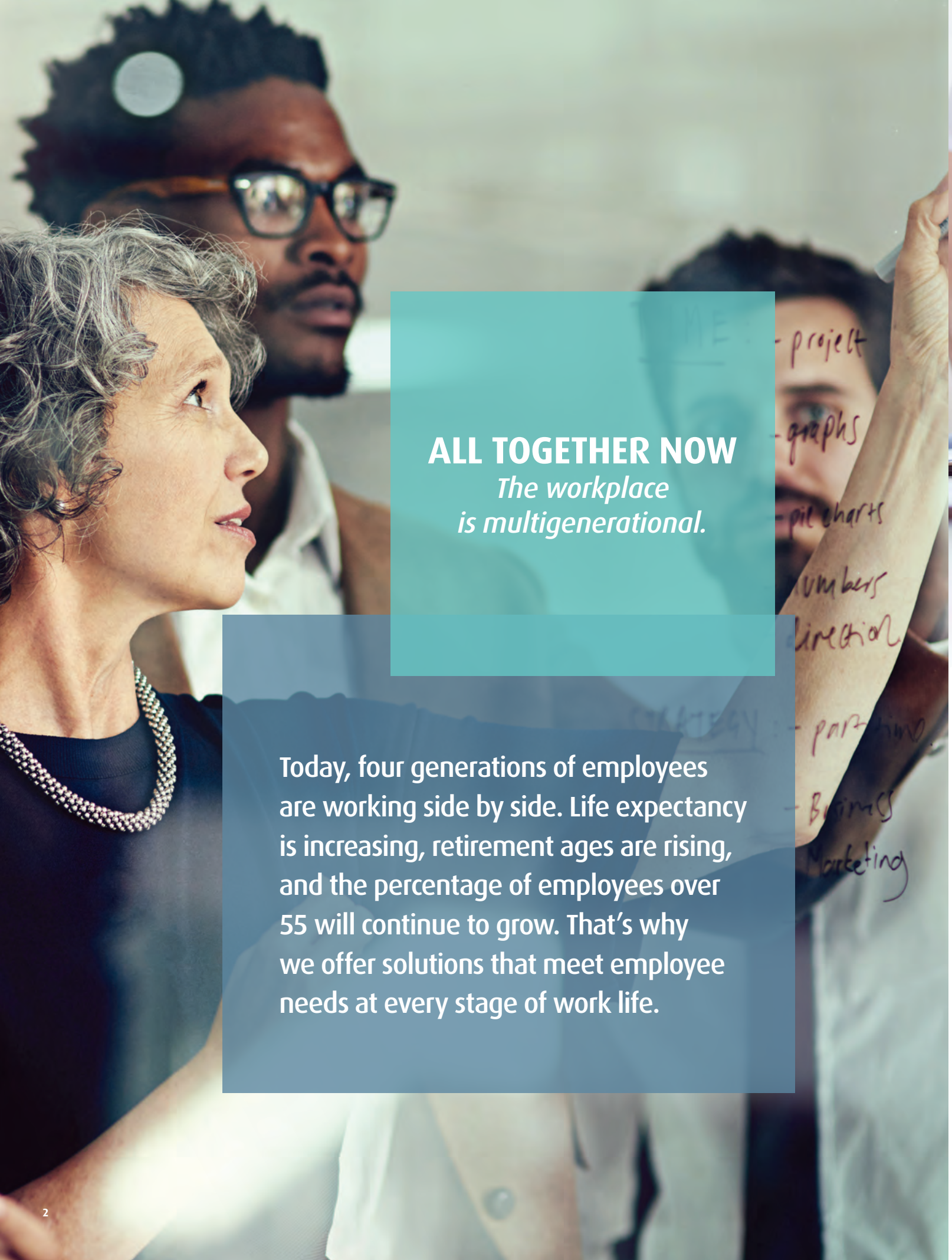
CLOSED BLOCK

Closed Block consists of individual disability, group and individual long-term care, and other benefit products that are still serviced but no longer actively marketed.



The workplace never stops changing.

At Unum, we stay focused on understanding and anticipating the evolution of the workforce, and on ensuring that the financial protection we provide aligns with emerging needs. We never stop thinking about what tomorrow will bring. And that makes us well positioned ***to protect the workforce of the future.***



ALL TOGETHER NOW

The workplace is multigenerational.

Today, four generations of employees are working side by side. Life expectancy is increasing, retirement ages are rising, and the percentage of employees over 55 will continue to grow. That's why we offer solutions that meet employee needs at every stage of work life.



MILLENNIALS ARE FUTURE-FOCUSED

Think they're not listening? Think again.

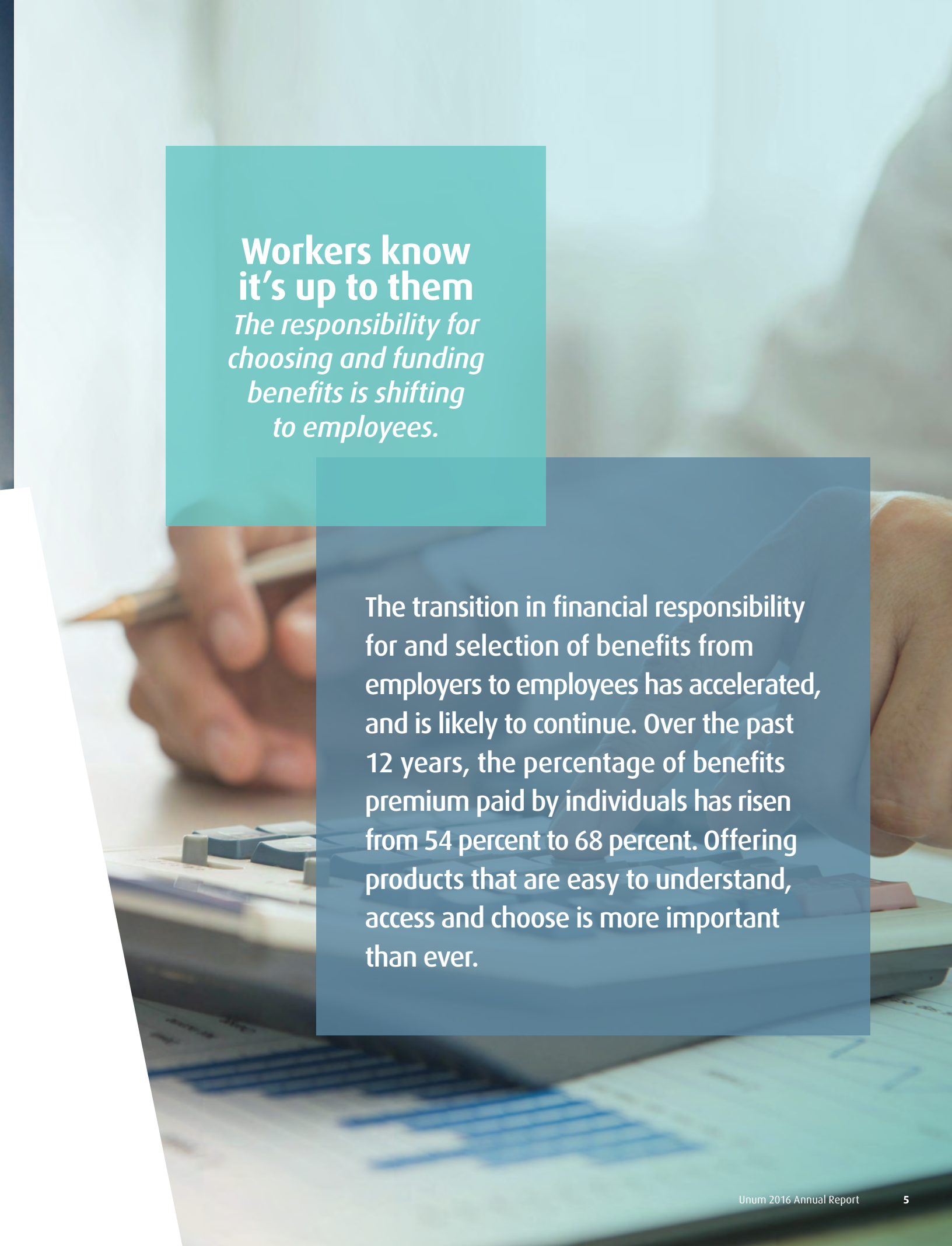
Millennials are an important segment, representing the biggest share of the modern workforce. And while they may be young, they're not care-free; they're focused on financial protection a lot more than you may think. In fact, 94 percent say having health insurance at work is important, and 70 percent already own some type of life insurance.



INTRIGUING – BUT NOT YET TRANSFORMATIONAL

The "gig economy" is a trend worth watching.

Some predict a future where everyone is an independent, part-time worker, using mobile technology to find gigs that fit their schedules and expertise. While the number of "gig workers" may be growing, they represent less than 0.5 percent of the workforce. And in the last five years, the growth in traditional, full-time jobs – Unum's market – has tripled the rate for non-traditional jobs.



Workers know it's up to them

The responsibility for choosing and funding benefits is shifting to employees.

The transition in financial responsibility for and selection of benefits from employers to employees has accelerated, and is likely to continue. Over the past 12 years, the percentage of benefits premium paid by individuals has risen from 54 percent to 68 percent. Offering products that are easy to understand, access and choose is more important than ever.



HELP WHEN YOU NEED IT

Many people lack the financial resources to cope with the unexpected.

Consider this: One in four U.S. workers has less than $1,000 in savings. More than half of households would struggle to recover from an unexpected $2,000 expense. And 44 percent of people who receive Unum disability benefit payments tell us they would have to give up their home without their employer-sponsored disability coverage. Add it all up and it's crystal clear: The need for financial protection is big today–and will be bigger tomorrow.



Rick McKenney
President and
Chief Executive Officer

"In 2016, we capitalized on opportunities to further expand our reach and achieved year-over-year growth in a number of areas. In short, it was a year of precise execution for us."

To Our Shareholders, Customers and Colleagues:

I began last year's annual letter with one word: Opportunity.

This year, I'm relying on two words to capture the essence of what we achieved in 2016 — and our mindset as we move forward:

Disciplined growth.

In 2016, we capitalized on opportunities to further expand our reach and achieved year-over-year growth in a number of areas. In short, it was a year of precise execution for us. We delivered on our promises to customers and shareholders, while continuing to build on the strong Unum brand — all the more impressive given the difficult environment in which we operated.

In spite of continued low interest rates and economic uncertainty, we grew our business in a disciplined manner by expanding our reach to new customers and deepening our relationships with those that already see us as a partner.

The result was one of the best years in our company's history.

Our mission now is to build on this progress and capitalize on the strong growth mindset that has taken hold at Unum. Although much of the uncertainty from last year continues, we entered 2017 with strong momentum and remain intensely focused on the disciplined execution of our business plan — and on serving the needs of more than 35 million workers and their families throughout the U.S. and U.K.

Working in a business built on helping people prepare for the unexpected means we have a responsibility to anticipate and prepare for what others may not see coming. That's why we will continue to align our 10,000 outstanding team members to address the shifting market conditions in ways that drive growth, deliver shareholder value, and serve our customers.

2016 — A Growth Story

By any measure, last year was a very good one for Unum. We stuck to our game plan and remained focused on our priorities, executing effectively across our businesses — all of which translated to real, measurable growth.

Consider these performance milestones in 2016:

- Record net income per share of $3.95.
- Record operating earnings per share of $3.92, an increase of nearly 8 percent over 2015 and the eleventh consecutive year of operating EPS growth.
- Record revenues of $11 billion.
- Record premium levels for our U.S.-based businesses.

We've successfully raised the bar on performance across the board as each of our core business segments — Unum US, Colonial Life and Unum UK — showed year-over-year growth in before-tax operating income.

Among the most important factors in our growth story are the underlying fundamentals of our business. Our disciplined approach to managing risk is built on realistic pricing strategies combined with customer-centric claims management and a prudent investment approach. While our industry often looks to price as a basis of competition, our continued growth and high persistency rates demonstrate that customers additionally value our industry expertise, service commitment, and relevant employee benefits offerings. We have a winning combination that offers a compelling value proposition for customers, and a strong-margin business that ultimately translates to shareholder value.

In 2016, we continued to maintain our solid balance sheet while generating excess capital. This provided opportunities to deploy capital in multiple ways, including making a strategic acquisition and reinvesting in our business to support organic growth. We also put our capital to work with approximately $400 million in share repurchases, and affirmed our commitment to return value to our shareholders with an 8-percent increase in our dividend.

Key to this progress has been our consistent execution in a challenging, albeit somewhat improving, environment. While a better interest-rate trend and an improving economy have tempered the headwinds we face, conditions certainly still have not returned to historical norms.

Expanding our portfolio

As with National Dental Plan in the U.K. in 2015, the acquisition of Starmount Life last year was a key component of our growth strategy. We see strong demand for dental and vision insurance, and Starmount provides the foundation for us in the important U.S. market. Strategically expanding our benefits portfolio with dental and vision provides Unum with a couple of key advantages. For prospective customers, these products provide a cost-effective entry point to the full suite of Unum benefits. For our existing customers, this acquisition allows us to deepen our relationships and add greater value by offering new coverage options.

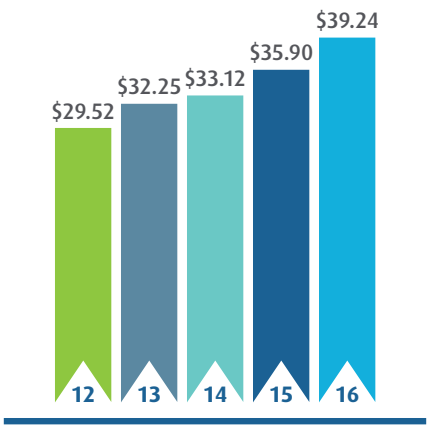
> **Strengthening our franchise** *through strategic acquisitions will be an important avenue for us. At the same time, we're hard at work developing new product and service offerings.*

Creating new products, enhancing existing offerings, and finding new ways to create great customer experiences ensure that we remain at the forefront of the employee benefits market. This work helps to emphasize a key differentiator for Unum: Delivering benefits at the workplace is our sole business. That focus sets us apart from many of our competitors. It is also a key reason we achieve exceptionally strong approval ratings, with a 96 percent positive reputation rating among customers and brokers.

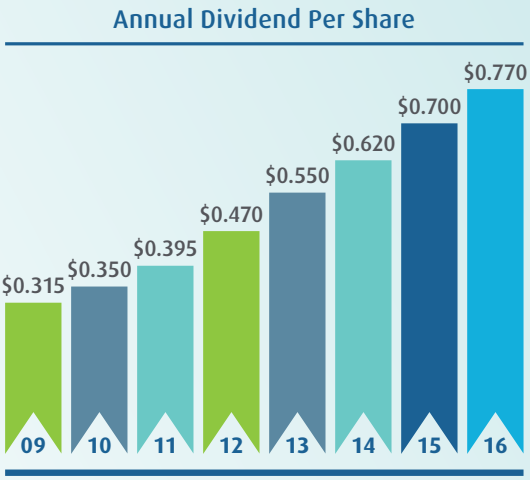
Operating Earnings Per Share*



Book Value Per Share (Excludes AOCI)*



** These terms are non-GAAP financial measures we use in analyzing performance. Refer to Financial Review section for further information.*



Protecting the workforce of the future

One lesson this business teaches us time and again is that we do not operate in a vacuum. The societal and workplace changes that affect our customers have a continuous ripple effect on how we do business. Several trends are emerging that present considerable opportunity for those committed to understanding and responding to the changes.

The most apparent and impactful shift is the evolving relationship between employers and employees when it comes to benefits. Traditionally, employers have provided a standard, across-the-board benefit package and assumed most of the cost. While this is still true for employers looking to deliver a high value proposition for their employees, the new model that has developed features more shared financial responsibility. This can also include more options and flexibility for employees in terms of types of coverage and price points. Despite this shift, we are finding that the core model of providing benefits in the workplace continues to be the approach preferred by employers, and expected by employees.

Additionally, while the "gig economy" of on-demand, temporary workers might capture headlines and is a trend we watch, it is still an outlier as a business framework in the U.S. and U.K. For the vast majority of companies, the traditional employer-employee relationship remains largely intact. As we see more and more of the responsibility for funding shifting to employees, the need for the benefits we offer has never been greater. Many families aren't financially prepared for the impact of missed work or emergency and unexpected expenses. Even those with some type of back-up plan may face gaps in their financial protection.



Growing through the dental and vision market

Dental insurance is one of the most popular workplace benefits, with vision insurance not far behind. And it's a good fit for our portfolio. Several years ago, we began exploring the U.S. market through partnerships with existing carriers, and saw sales of $43 million in 2015, showing us the potential for growth.

Our acquisition of National Dental Plan in the U.K. that year, and Starmount Life in the U.S. in 2016, has provided us with a clear path for growth. We believe our strong brands and complementary products, coupled with the size and scale of our distribution footprint, will grow our dental business more than tenfold in five years.

Through the Starmount platform, we introduced dental and vision products under the Unum brand in 2017 and will debut similar products through the Colonial Life brand in 2018. Expanding with dental and vision provides us with several key advantages. These products provide new customers a cost-effective entry point to the full suite of our benefits. For existing customers, dental and vision adds greater value through new coverage options and allows us to deepen our relationships with them. Just as importantly, these latest additions to our benefits portfolio provide an opportunity to build meaningful relationships with consumers.

> **Across our company,** ***we are all focused on the meaningful work of delivering financial protection to individuals and families when they need it most.***

We know the chances of disability are significant: About one in four U.S. workers between 20 and 50 years old will be disabled before they reach 67. At the same time, 40 percent of families live paycheck-to-paycheck, and half would have trouble coming up with the money to cover a $2,000 emergency. And most striking of all, 70 percent of those workers lack disability protection.

When you consider these facts together, you can understand the real need that we are seeking to address.

To fill the void, we have invested heavily in understanding the best potential coverage options for employees in different life stages, as well as educational tools and resources to help reach these individuals as they make decisions about benefits.

In conjunction with this evolving employer-employee benefits relationship is another trend driving change: the multi-generational workforce. For the first time in history, we are seeing four generations simultaneously in the workplace. Baby Boomers are working longer than their parents did, and are now working side-by-side with Millennials and even "Gen Z," those individuals who are just starting their careers. It goes without saying that the insurance needs of someone who is 28 clearly differ from a coworker who is, say, 58.

From our perspective, this trend affirms our true purpose: providing financial security and peace of mind for an increasingly diverse workforce. It also demands that we push beyond the one-size-fits-all model and be certain our offerings are valuable for workers in any stage of their careers. That's important for our customers, for our business, and ultimately for you, our shareholders.

We are Unum

As we track and respond to these external trends, we are also focused on continuing to ensure that our own workforce has the tools, technology and training to exceed customer expectations and achieve our business goals.

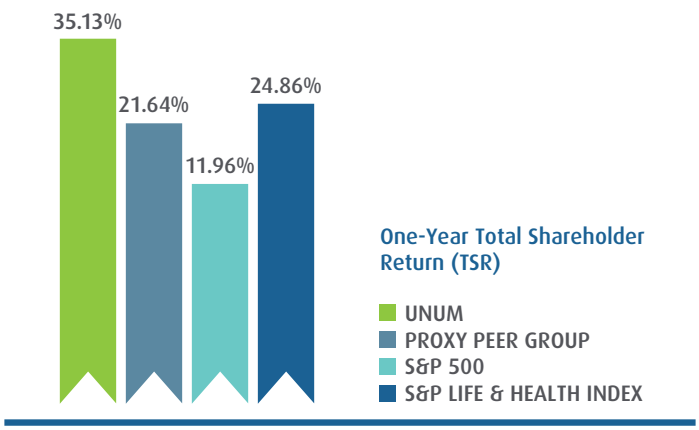
While we have always valued our people as our most essential asset, in 2016 we spent considerable time making sure we were fully leveraging the strengths of our corporate culture. To that end, we revisited our core values and guiding principles to develop "We Are Unum," which describes the relationship between our people and the company in meaningful ways. In short, our goal is to help employees understand what the company expects them to bring to work every day beyond briefcases and backpacks—and what they can expect in return. We are aligned around the reality that the work we do helps people when they need it most, and that inspires all of us.

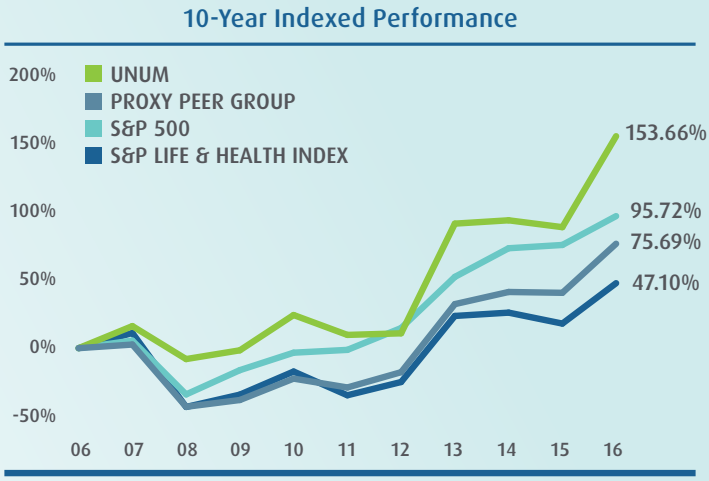
We Are Unum is a living document that helps define our culture and strengthen employee engagement and commitment. One focus — a collaborative work environment — is supported by a companywide initiative to redesign our workspaces so they encourage and facilitate interaction. We think the changes will generate better ideas and solutions and enhance productivity — but most importantly, they'll enable us to serve our customers even better.

We also understand the benefits of building a more diverse workforce. While we are proud of the progress we've made in this area, we recognize that we still have work to do to build a culture of inclusion where everyone's ideas are heard. It's also a business imperative as we look to mirror our customer base and serve an increasingly diverse workforce throughout both the U.S. and U.K.

Like many companies, we know this is a journey without a final destination. But every step we take will make us a stronger company.

Delivering Strong Shareholder Returns





Focused Execution

As 2017 advances, it is clear that we are moving forward with an emphasis on disciplined growth at Unum — not just for this year but for many years to come.

It is also clear, however, that uncertainties remain. We operate at a time of major political and economic change on both sides of the Atlantic. In the U.S., the new administration is advocating a number of regulatory reforms, while in the U.K., Brexit has spawned considerable economic uncertainty.

Undoubtedly, changes driven by Washington, D.C., and London will provide Unum and our customers with many challenges. But this disruption also offers us some opportunities.

We are approaching our work with optimism as external factors are aligning in ways that could benefit our business. For instance, the Federal Reserve's recent bump in interest rates may mark the start of a move toward gradual but continued increases. After nearly a decade in which interest rates hovered at historic lows, more normalized rates would provide a welcome boost to our industry.

Within Unum, we have strong alignment across our leadership ranks and deep engagement among our employees, who are committed to achieving our business goals and providing exceptional service to our customers.

> **We remain confident** ***that our actions to position Unum for long-term growth will reap benefits in the years to come.***

As we look forward, it is also important to remember how we got here. Critical to Unum's current success has been the vision and steady hand of our chairman, Tom Watjen, who is retiring from our board of directors after completing a transition in board leadership that began two years ago. Tom was instrumental in shaping Unum during his tenure as CEO, and as chairman since 2015. As a member of our board for 15 years, his insights and experience have always proven invaluable.

I am pleased that Kevin Kabat, currently lead independent director and a valued member of our board since 2008, is succeeding Tom as chairman in May. Although we hate to say goodbye to Tom, our board is stronger today because of his influence, and I know that will continue under Kevin's leadership.

On behalf of our employees and board of directors, I'd like to thank Tom for all he has done for Unum over the years and wish him the best in his well-deserved "full" retirement.

In closing, we appreciate the confidence our shareholders place in us, and we remain committed to operating and growing our business in ways that reward that confidence both now and well into the future.





Future Focused
How Workplace Change Will Influence Our Strategic Execution

Against a backdrop of widespread change in the industry, Unum US closed the books on an incredibly productive and successful year. In addition to seeing growth in key areas, we're particularly excited by our accomplishments in 2016 that delivered greater value to our customers. Through the acquisition of Starmount, we expanded our portfolio with the launch of Unum Dental and Vision. New digital partnerships simplified the user experience and made our products accessible across multiple platforms. As the market shifts and consumers carry more responsibility for their benefits, we've made great strides in educating people and inspiring action. With strong momentum, Unum US is poised to grow profitability in 2017 as we continue to strengthen our client relationships and remain focused on protecting people in the workplace.



Michael Simonds,
President & CEO,
Unum US



Peter O'Donnell,
President & CEO,
Unum UK

It was a good year for Unum UK as we generated solid financial results in a challenging economic backdrop dominated by Brexit. Despite the ongoing uncertainty, we continued our focus in 2016 on creating a more efficient and effective organization. We've invested in areas that will solidify foundational growth, like broker distribution networks, collaborative work environments and technology. Advancements in these key areas will ensure we operate with greater efficiency and deliver a compelling customer experience. Following our dental acquisition at the end of 2015, we have focused on building sales momentum through cross-selling and the use of social media and innovative marketing campaigns. We have completed the rebrand to Unum Dental, a significant step as we become a broader employee benefits provider. We are shaping our business to position us well for 2017 and beyond.

Colonial Life saw unprecedented growth in 2016 by developing simple, modern and personal ways to serve America's workers. In a shifting health care landscape, customers expect us to anticipate their needs and deliver value and innovation. Our award-winning enrollment capabilities, along with advancements in our distribution footprint, digital technology and new partnerships created exceptional growth in our target markets. As we work to meet our goal of protecting 5 million customers by 2020, we remain committed to meeting their needs in new ways. Improving the customer experience, increasing the efficiency of our organization, cultivating talent and growing profitably are the keys to our current success, and the foundation for reaching even greater heights going forward.



Tim Arnold,
President & CEO,
Colonial Life

Differences That Define Us

Across our company, we excel because of our proven capability in three essential areas:

EXPERTISE OF OUR EMPLOYEES

The strength of our brand and our business are the nearly 10,000 people who walk through the doors every day at Unum. We attract, retain and develop the best talent in our industry because we know that our clients expect us to deliver on our promise to help when it's needed most. With thousands of experts in employee benefits, technology, service and a host of other disciplines, we're committed every day to create lasting impressions with our customers.



DEPTH OF OUR PORTFOLIO

Employee benefits are all we do. Individuals and their families depend on us for a helping hand during the big and small moments of their lives. Small businesses look to us for the benefits their employees count on during tough times. Big companies partner with us for the comprehensive solutions to their workforce challenges. Our broad and growing portfolio of products and services offer solutions to whatever challenges life presents.



DISCIPLINED EXECUTION

We're serious about the promises we make. For customers, that means being there when the unexpected occurs. Keeping our promises also means effectively managing risk, making prudent investment decisions, taking a disciplined approach to pricing and doing what we say we're going to do. Whether you're a shareholder or neighbor, a regulator or consumer, a business owner or employee, running a sound and predictable business means you can count on us to deliver for you now and in the years to come.



Senior Officers



Richard P. McKenney
President and
Chief Executive Officer



Timothy G. Arnold
President and
Chief Executive Officer,
Colonial Life



Breege A. Farrell
Executive Vice President
and Chief Investment Officer



Lisa G. Iglesias
Executive Vice President
and General Counsel



Christopher J. Jerome
Executive Vice President,
Global Services



Jack F. McGarry
Executive Vice President
and Chief Financial Officer



Peter G. O'Donnell
President and
Chief Executive Officer,
Unum UK



Michael Q. Simonds
President and
Chief Executive Officer,
Unum US



Joseph R. Foley
Senior Vice President,
Corporate Marketing
and Public Relations



Diane M. Garofalo
Senior Vice President,
Corporate Human Resources



Stephen J. Mitchell
Senior Vice President,
CFO US Finance



Steven A. Zabel
President,
Closed Block Operations

Board of Directors

Thomas R. Watjen
Chairman of the Board and
Retired Chief Executive Officer
of the Company

Theodore H. Bunting, Jr.
Group President, Utility Operations,
Entergy Corporation

E. Michael Caulfield
Former President,
Mercer Human Resource Consulting

Joseph J. Echevarria
Retired Chief Executive Officer,
Deloitte LLP

Cynthia L. Egan
Retired President,
Retirement Plan Services,
T. Rowe Price Group, Inc.

Pamela H. Godwin
President,
Change Partners, Inc.

Kevin T. Kabat
Lead Independent Director of the
Board and Retired Chief Executive Officer,
Fifth Third Bancorp

Timothy F. Keaney
Former Vice Chairman,
The Bank of New York Mellon
Corporation

Gloria C. Larson
President,
Bentley University

Richard P. McKenney
President and Chief Executive Officer
of the Company

Edward J. Muhl
Retired National Leader,
PricewaterhouseCoopers LLP

Ronald P. O'Hanley
President and Chief Executive Officer,
State Street Global Advisors

Francis J. Shammo
Retired Chief Financial Officer,
Verizon Communications Inc.

Committees of the Board

Audit Committee: E. Michael Caulfield, Chair; Theodore H. Bunting, Jr.; Joseph J. Echevarria; Timothy F. Keaney; Francis J. Shammo

Risk and Finance Committee: Timothy F. Keaney, Chair; E. Michael Caulfield; Pamela H. Godwin; Ronald P. O'Hanley

Governance Committee: Pamela H. Godwin, Chair; Joseph J. Echevarria; Kevin T. Kabat; Gloria C. Larson

Human Capital Committee: Kevin T. Kabat, Chair; Theodore H. Bunting, Jr.; Cynthia L. Egan; Edward J. Muhl; Ronald P. O'Hanley

Regulatory Compliance Committee: Gloria C. Larson, Chair; Cynthia L. Egan; Edward J. Muhl; Francis J. Shammo

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Selected Financial Data

(in millions of dollars, except share data)	At or for the Year Ended December 31 2016	2015	2014	2013	2012
Income Statement Data					
Revenue					
Premium Income	$ 8,357.7	$ 8,082.4	$ 7,797.2	$ 7,624.7	$ 7,716.1
Net Investment Income	2,459.0	2,481.2	2,492.2	2,506.9	2,531.3
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1	6.8	56.2
Other Income	205.6	211.5	219.0	230.2	227.9
Total Revenue	11,046.5	10,731.3	10,524.5	10,368.6	10,531.5
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits [1]	6,941.8	6,782.8	7,310.8	6,595.7	6,722.2
Commissions	1,026.7	996.3	935.3	909.5	917.2
Interest and Debt Expense	166.0	152.8	167.5	149.4	145.4
Other Expenses [2]	1,564.3	1,561.1	1,568.9	1,494.0	1,481.1
Total Benefits and Expenses	9,698.8	9,493.0	9,982.5	9,148.6	9,265.9
Income Before Income Tax	1,347.7	1,238.3	542.0	1,220.0	1,265.6
Income Tax	416.3	371.2	139.9	373.0	377.5
Net Income	$ 931.4	$ 867.1	$ 402.1	$ 847.0	$ 888.1
Balance Sheet Data					
Assets [3]	$61,941.5	$60,563.6	$62,422.5	$59,345.6	$62,191.0
Long-term Debt [3]	$ 2,999.4	$ 2,449.4	$ 2,601.6	$ 2,583.5	$ 2,722.7
Accumulated Other Comprehensive Income (Loss)	$ (51.0)	$ 16.1	$ 166.4	$ 255.0	$ 628.0
Other Stockholders' Equity	9,019.0	8,647.8	8,355.5	8,384.9	7,976.6
Total Stockholders' Equity	$ 8,968.0	$ 8,663.9	$ 8,521.9	$ 8,639.9	$ 8,604.6

(in millions of dollars, except share data)	At or for the Year Ended December 31				
	2016	2015	2014	2013	2012
Per Share Data					
Net Income					
Basic	$ 3.96	$ 3.51	$ 1.57	$ 3.20	$ 3.16
Assuming Dilution	$ 3.95	$ 3.50	$ 1.57	$ 3.19	$ 3.15
Stockholders' Equity	$39.02	$35.96	$33.78	$33.23	$31.84
Cash Dividends	$ 0.77	$ 0.70	$ 0.62	$ 0.55	$ 0.47
Weighted Average Common Shares Outstanding					
Basic (000s)	235,445.7	246,986.7	255,525.9	264,725.8	281,355.9
Assuming Dilution (000s)	235,979.2	247,854.7	256,652.8	265,949.2	281,756.8

(1) Includes a reserve increase of $698.2 million in 2014 related to our long-term care closed block business. See Note 6 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

(2) Includes the net change in deferred acquisition costs as well as compensation expense and other expenses. Includes $64.4 million in 2014 related to a settlement loss for a pension plan amendment. See Note 9 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

(3) Effective January 1, 2016, we adopted an accounting standards update for deferred debt issuance costs which required these costs to be presented in the balance sheet as a reduction of the carrying amount of the debt liability to which the deferred costs relate, rather than classifying the deferred costs as an asset. We applied the amendments retrospectively, adjusting all prior periods presented. See Note 1 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

Management's Discussion and Analysis of Financial Condition and Results of Operations

The discussion and analysis presented in this section should be read in conjunction with the "Selected Financial Data," the Consolidated Financial Statements and notes, and the "Cautionary Statement Regarding Forward-Looking Statements" included herein.

Executive Summary

2016 Operating Performance and Capital Management

For 2016, we reported net income of $931.4 million, or $3.95 per diluted common share, compared to net income of $867.1 million, or $3.50 per diluted common share, in 2015. Net income includes net realized investment gains and losses and non-operating retirement-related gains or losses. Excluding these items, after-tax operating income for 2016 was $926.2 million, or $3.92 per diluted common share, compared to $901.0 million, or $3.64 per diluted common share, in 2015. See "Reconciliation of Non-GAAP and Other Financial Measures" contained herein for further discussion and a reconciliation of these items.

Our Unum US segment reported an increase in operating income of 7.6 percent in 2016 compared to 2015, with growth in premium income and overall favorable benefits experience, partially offset by lower net investment income. The benefit ratio for our Unum US segment for 2016 was 69.2 percent, compared to 70.1 percent in 2015. Unum US sales were generally consistent in 2016 compared to 2015, aided by our acquisition in 2016 of a provider of dental and vision insurance in the U.S. workplace. Persistency continues to be strong and is consistent with our expectations.

Our Unum UK segment reported an increase in operating income, as measured in Unum UK's local currency, of 3.0 percent in 2016 compared to 2015, with an increase in premium income and net investment income, partially offset by less favorable benefits experience. Premium income in local currency increased 3.6 percent in 2016 relative to 2015. The benefit ratio for Unum UK was 69.4 percent in 2016 compared to 68.5 percent in 2015. Unum UK sales in local currency increased 13.8 percent in 2016 compared to 2015. Persistency improved in 2016 relative to the prior year and is consistent with our expectations.

Our Colonial Life segment reported an increase in operating income of 1.6 percent in 2016 compared to 2015, with growth in premium income, partially offset by slightly less favorable benefits experience. The 2016 benefit ratio for Colonial Life was 51.3 percent compared to 51.0 percent in 2015. Colonial Life sales increased 10.3 percent in 2016 compared to 2015. Persistency was favorable in 2016 compared to 2015 and is consistent with our expectations.

Our Closed Block segment reported an increase in operating income of 8.7 percent in 2016 compared to 2015, with higher net investment income and a lower other expense ratio partially offset by a decline in premium income and less favorable benefits experience. Benefits experience for individual disability remains within our range of expectations. Long-term care experienced volatility during the second and third quarters of 2016, with a resulting interest adjusted loss ratio for full year 2016 that was slightly higher than our range of expectations.

Although our profit margins continue to be pressured by the impact of the low interest rate environment on our net investment income yields, our invested asset quality remains strong. The net unrealized gain on our fixed maturity securities was $4.7 billion at December 31, 2016, compared to $3.7 billion at December 31, 2015, with the increase due to a decline in credit spreads partially offset by an increase in U.S. Treasury rates during 2016. The earned book yield on our investment portfolio was 5.30 percent for 2016 compared to a yield of 5.40 percent for 2015.

We believe our capital and financial positions are strong. At December 31, 2016, the RBC ratio for our traditional U.S. insurance subsidiaries, calculated on a weighted average basis using the NAIC Company Action Level formula, was above 400 percent, in line with our expectations and generally consistent with the prior year end. During 2016, we repurchased 11.9 million shares of Unum Group common stock under our share repurchase program, at a cost of approximately $403 million. Our weighted average common shares outstanding, assuming dilution, equaled 236.0 million for 2016 compared to 247.9 million for 2015, reflecting our capital management strategy of returning capital to shareholders through repurchases of our common stock. During 2016 we also increased our dividends to shareholders 8.1 percent on an annualized basis. As of December 31, 2016, Unum Group and our intermediate holding companies held fixed maturity securities, short-term investments, and cash of $594 million, excluding amounts committed for subsidiary contributions.

U.K. Referendum

During 2016, the U.K. held a referendum and voted to leave the EU. The U.K. subsequently indicated that it will initiate the withdrawal process by the end of March 2017. Assuming the U.K. initiates the withdrawal process by giving notice that it is withdrawing from the EU, the U.K. and the EU will negotiate a withdrawal agreement during a maximum two-year period. We may see some dampening of growth in the U.K. due to the current disruption and uncertainty in the U.K. economy. We may experience volatility in the fair values of our investments in U.K. and EU-based issuers, but we do not expect a material increase in other-than-temporary impairments or defaults, nor do we believe this volatility will impact our ability to hold these investments. The magnitude and longevity of potential negative economic impacts on our growth will depend on the agreements reached by the U.K. and EU as a result of exit negotiations and the resulting response of the U.K. marketplace. There are currently no indications that capital requirements for our U.K. operations will change, but economic conditions may cause volatility in our solvency ratios. Our reported consolidated financial results may continue to be unfavorably impacted by the weakening of the British pound sterling. Further discussion is contained herein.

2016 and 2015 Acquisitions of Business

In August 2016, we acquired 100 percent of the shares and voting interests in H&J Capital, L.L.C., parent of Starmount Life Insurance Company and AlwaysCare Benefits (which collectively we refer to as Starmount), for a total cash purchase price of $140.3 million plus contingent cash consideration of $10.0 million to be paid in two increments of $5.0 million each, at 18 and 24 months from the date of acquisition upon satisfaction of certain conditions. Starmount Life Insurance Company is an independent provider of dental and vision insurance in the U.S. workplace, and AlwaysCare Benefits is a nationally licensed, third-party administrator. The acquisition of Starmount will broaden our employee benefit offerings in the U.S. Starmount's dental and vision products and new dental and vision products to be marketed by Unum US are reported in our Unum US segment within our supplemental and voluntary product lines. Colonial Life dental and vision products are expected to be introduced in 2018 and will be reported in our Colonial Life segment. This acquisition, the results of which are included in our consolidated financial statements for the period subsequent to the date of acquisition, did not have a material impact on revenue, operating results, or sales for 2016.

In September 2015, we acquired 100 percent of the common shares and voting interests in National Dental Plan Limited and associated companies (National Dental) for a total cash purchase price of £35.9 million or $54.3 million. National Dental, a leading provider of dental insurance in the U.K. workplace, is reported in our Unum UK segment as part of our supplemental product line. The acquisition of National Dental extends our market reach, broadening our employee benefit offerings in the U.K. This acquisition, the results of which are included in our financial results and sales for the period subsequent to the date of acquisition, did not have a material impact on revenue, operating results, or sales for 2015. See Note 13 of the "Notes to Consolidated Financial Statements" contained herein for further details on the acquisitions.

Management's Discussion and Analysis of Financial Condition and Results of Operations

2014 Long-term Care Reserve Increase

Policy reserves for our long-term care block of business are determined using the gross premium valuation method and, prior to the fourth quarter of 2014, were valued based on assumptions established as of December 31, 2011, the date of the initial loss recognition. Gross premium valuation assumptions do not change after the date of loss recognition unless reserves are again determined to be deficient. We undertake a review of policy reserve adequacy annually during the fourth quarter of each year, or more frequently if appropriate, using best estimate assumptions as of the date of the review.

Included in our fourth quarter of 2014 review was an analysis of our reserve assumptions, including those for the discount rate, mortality and morbidity rates, persistency, and premium rate increases. Our analysis of reserve discount rate assumptions considered the continued historic low interest rate environment, future market expectations, and our view of future portfolio yields. The assumptions we established in 2011 were set at a level that we estimated would be sustainable in a low interest rate environment for three to five years, with improvements in market yields beginning after the third year. Since that time, however, interest rates continued to hover near historic lows, and credit spreads tightened. Our assumption update for mortality incorporated the last three years of Company-specific experience and emerging trends as well as industry data, where available and appropriate, and reflected improvements in life expectancies beyond what was initially anticipated in 2011. Our morbidity assumptions were updated to reflect trends from our own emerging Company experience in claim incidence and terminations, as well as trends based on available and appropriate industry data and studies. Our premium rate increase assumptions were updated to reflect progress-to-date and our on-going rate increase strategy.

Based on our analysis, as of December 31, 2014 we lowered the discount rate assumption to reflect the low interest rate environment and our revised expectation of future investment portfolio yield rates. Our revised assumptions anticipated the low interest rate environment persisting for the next three to five years, with a return to more historical averages over the following five year period. We updated our mortality assumptions to reflect emerging experience due to an increase in life expectancies which increases the ultimate number of people who will utilize long-term care benefits and also lengthens the amount of time a claimant may receive long-term care benefits. We changed our morbidity assumptions to reflect emerging industry experience as well as our own company experience, and we updated our projection of future premium rate increase approvals. Using our revised best estimate assumptions, as of December 31, 2014 we determined that our policy and claim reserves should be increased $698.2 million to reflect our current estimate of future benefit obligations. This charge decreased our 2014 net income $453.8 million.

2014 Retirement Benefit Amendment

In 2014, we amended our U.S. qualified defined benefit pension plan to allow a limited-time offer of benefit payouts to eligible former employees with a vested right to a pension benefit. The offer provided eligible former employees, regardless of age, with an option to elect to receive a lump-sum settlement of his or her entire accrued pension benefit in December 2014 or to elect receipt of monthly pension benefits commencing in January 2015. We recognized a settlement loss of $64.4 million before tax, or $41.9 million after tax, during the fourth quarter of 2014. This non-operating retirement-related loss represented the applicable portion of the unrecognized actuarial loss which had previously been included in accumulated other comprehensive income and which pertained to the settled benefit obligation.

Consolidated Company Outlook for 2017

We believe our disciplined approach to providing financial protection products at the workplace puts us in a position of strength as we seek to capitalize on the growing and largely unfilled need for our products and services. We believe the need for our products and services remains strong, and we intend to continue protecting our solid margins and returns through our pricing and risk actions. We continue to invest in our infrastructure and our employees, with a focus on quality and simplification of processes and offerings. Our strategy is centered on market expansion, enhancing the customer experience, providing an innovative product portfolio of financial protection choices, and investing in new solutions to further improve productivity.

Our outlook for 2017 is for continued solid premium growth trends in our core businesses, with strong persistency and a disciplined approach to sales growth. We expect to have generally stable benefits experience due to our focus on disciplined pricing, risk selection, and management of renewals. We will maintain our commitment to expense discipline and improving our operational efficiencies.

The low interest rate environment continues to place pressure on our profit margins and could unfavorably impact the adequacy of our reserves for some products. Tax reform may impact our operating results or the statutory capital of our U.S. insurance subsidiaries. Our reported consolidated financial results may also continue to be unfavorably impacted by the weakening of the British pound sterling.

We continue to analyze and employ strategies that we believe will help us navigate the current environment and allow us to maintain solid operating margins and significant financial flexibility to support the needs of our businesses, while also continuing to return capital to our shareholders. We have substantial leverage to rising interest rates and an improving economy which generates payroll growth and wage inflation. We believe that consistent operating results, combined with the implementation of strategic initiatives and the effective deployment of capital, will allow us to meet our long-term financial objectives.

Further discussion is included in "Reconciliation of Non-GAAP Financial Measures," "Consolidated Operating Results," "Segment Results," "Investments," "Liquidity and Capital Resources," and in the "Notes to Consolidated Financial Statements" contained herein.

Reconciliation of Non-GAAP and Other Financial Measures

We analyze our performance using non-GAAP financial measures. A non-GAAP financial measure is a numerical measure of a company's performance, financial position, or cash flows that excludes or includes amounts that are not normally excluded or included in the most directly comparable measure calculated and presented in accordance with GAAP. The non-GAAP financial measure of "after-tax operating income" differs from net income as presented in our consolidated operating results and income statements prepared in accordance with GAAP due to the exclusion of net realized investment gains and losses and non-operating retirement-related gains or losses as specified in the reconciliations below. We believe operating income is a better performance measure and better indicator of the profitability and underlying trends in our business.

Realized investment gains or losses depend on market conditions and do not necessarily relate to decisions regarding the underlying business of our segments. Our investment focus is on investment income to support our insurance liabilities as opposed to the generation of realized investment gains or losses. Although we may experience realized investment gains or losses which will affect future earnings levels, a long-term focus is necessary to maintain profitability over the life of the business since our underlying business is long-term in nature, and we need to earn the interest rates assumed in calculating our liabilities.

The amortization of prior period actuarial gains or losses, a component of the net periodic benefit cost for our pensions and other postretirement benefit plans, is driven by market performance as well as plan amendments and is not indicative of the operational results of our businesses. We believe that excluding the amortization of prior period gains or losses, as well as the 2014 settlement loss from our pension plan amendment, from operating income or loss provides investors with additional information for comparison and analysis of our operating results. Although we manage our non-operating retirement-related gains or losses separately from the operational performance of our business, these gains or losses impact the overall profitability of our company and have historically increased or decreased over time, depending on plan amendments and market conditions and the resulting impact on the actuarial gains or losses in our pensions and other postretirement benefit plans.

We believe that excluding the 2014 costs related to the early retirement of debt is appropriate because in conjunction with the debt redemption, we recognized in realized investment gains and losses a deferred gain from previously terminated derivatives which were associated with the hedge of this debt. The amount recognized as a realized investment gain, which basically offsets the cost of the debt redemption, is also excluded from our non-GAAP financial measures since we analyze our performance excluding amounts reported as realized investment gains or losses. We believe it provides investors with a more realistic view of our overall profitability if we are consistent in excluding both the cost of the debt retirement as well as the gain on the hedge of the debt.

We may at other times exclude certain other items from our discussion of financial ratios and metrics in order to enhance the understanding and comparability of our operational performance and the underlying fundamentals, but this exclusion is not an indication that similar items may not recur and does not replace net income or net loss as a measure of our overall profitability.

Management's Discussion and Analysis of Financial Condition and Results of Operations

A reconciliation of GAAP financial measures to our non-GAAP financial measures is as follows:

	Year Ended December 31					
	2016		2015		2014	
	(in millions)	per share*	(in millions)	per share*	(in millions)	per share*
Net Income	$931.4	$ 3.95	$867.1	$ 3.50	$ 402.1	$ 1.57
Excluding:						
Net Realized Investment Gain (Loss) (net of tax expense (benefit) of $8.4; $(17.7); $3.3)	15.8	0.07	(26.1)	(0.11)	12.8	0.05
Non-operating Retirement-related Loss (net of tax benefit of $5.7; $4.1; $24.4)	(10.6)	(0.04)	(7.8)	(0.03)	(45.6)	(0.18)
Costs Related to Early Retirement of Debt (net of tax benefit of $—; $—; $2.8)	—	—	—	—	(10.4)	(0.04)
Long-term Care Reserve Increase (net of tax benefit of $—; $—; $244.4)	—	—	—	—	(453.8)	(1.77)
After-tax Operating Income	$926.2	$ 3.92	$901.0	$ 3.64	$ 899.1	$ 3.51

* Assuming Dilution

We measure and analyze our segment performance on the basis of "operating revenue" and "operating income" or "operating loss", which differ from total revenue and income before income tax as presented in our consolidated statements of income due to the exclusion of net realized investment gains and losses and non-operating retirement-related gains or losses as specified in the reconciliations below. These performance measures are in accordance with GAAP guidance for segment reporting, but they should not be viewed as a substitute for total revenue, income before income tax, or net income. A reconciliation of total revenue to "operating revenue" and income before income tax to "operating income" is as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Total Revenue	$11,046.5	$10,731.3	$10,524.5
Excluding:			
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1
Operating Revenue	$11,022.3	$10,775.1	$10,508.4
Income Before Income Tax	$ 1,347.7	$ 1,238.3	$ 542.0
Excluding:			
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1
Non-operating Retirement-related Loss	(16.3)	(11.9)	(70.0)
Costs Related to Early Retirement of Debt for Corporate	—	—	(13.2)
Long-term Care Reserve Increase for Closed Block	—	—	(698.2)
Operating Income	$ 1,339.8	$ 1,294.0	$ 1,307.3

Critical Accounting Estimates

We prepare our financial statements in accordance with GAAP. The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect amounts reported in our financial statements and accompanying notes. Estimates and assumptions could change in the future as more information becomes known, which could impact the amounts reported and disclosed in our financial statements. The accounting estimates deemed to be most critical to our financial position and results of operations are those related to reserves for policy and contract benefits, deferred acquisition costs, valuation of investments, pension and postretirement benefit plans, income taxes, and contingent liabilities. For additional information, refer to our significant accounting policies in Note 1 of the "Notes to Consolidated Financial Statements" contained herein.

Reserves for Policy and Contract Benefits

Reserves for policy and contract benefits are our largest liabilities and represent claims that we estimate we will eventually pay to our policyholders. The two primary categories of reserves are policy reserves for claims not yet incurred and claim reserves for claims that have been incurred or are estimated to have been incurred but not yet reported to us. Reserves for policy and contract benefits equaled $41.5 billion and $41.4 billion at December 31, 2016 and 2015, respectively, or approximately 78.3 percent and 79.9 percent of our total liabilities, respectively. Reserves ceded to reinsurers were $7.1 billion and $6.9 billion at December 31, 2016 and 2015, respectively, and are reported as a reinsurance recoverable in our consolidated balance sheets.

Policy Reserves

Policy reserves are established in the same period we issue a policy and equal the difference between projected future policy benefits and future premiums, allowing a margin for expenses and profit. These reserves relate primarily to our non-interest sensitive products, including our individual disability and voluntary benefits products in our Unum US segment; individual disability products in our Unum UK segment; disability and cancer and critical illness policies in our Colonial Life segment; and individual disability, long-term care, and other products in our Closed Block segment. The reserves are calculated based on assumptions that were appropriate at the date the policy was issued and are not subsequently modified unless the policy reserves become inadequate (i.e. loss recognition occurs).

- Persistency assumptions are based on our actual historical experience adjusted for future expectations.
- Claim incidence and claim resolution rate assumptions related to mortality and morbidity are based on actual experience or industry standards adjusted as appropriate to reflect our actual experience and future expectations.
- Discount rate assumptions are based on our current and expected net investment returns.

In establishing policy reserves, we use assumptions that reflect our best estimate while considering the potential for adverse variances in actual future experience, which results in a total policy reserve balance that has an embedded reserve for adverse deviation. We do not, however, establish an explicit and separate reserve as a provision for adverse deviation from our assumptions.

We perform loss recognition tests on our policy reserves annually, or more frequently if appropriate, using best estimate assumptions as of the date of the test, without a provision for adverse deviation. We group the policy reserves for each major product line within a segment when we perform the loss recognition tests. If the policy reserves determined using these best estimate assumptions are higher than our existing policy reserves net of any deferred acquisition cost balance, the existing policy reserves are increased or deferred acquisition costs are reduced to immediately recognize the deficiency. Thereafter, the policy reserves for the product line are calculated using the same method we used for the loss recognition testing, referred to as the gross premium valuation method, wherein we use our best estimate as of the gross premium valuation (loss recognition) date rather than the initial policy issue date to determine the expected future claims, commissions, and expenses we will pay and the expected future gross premiums we will receive.

Because the key policy reserve assumptions for policy persistency, mortality and morbidity, and discount rates are all locked in at policy issuance based on assumptions appropriate at that time, policy reserve assumptions are generally not changed due to a change in claim status from active to disabled subsequent to policy issuance. Depending on the funding mechanism, a full policy reserve is held during disability reflecting continued funding of the full policy reserve during a disability claim, or a fractional policy reserve is held reflecting that the individual policyholder would need to recover before he or she can again generate future claims for a separate occurrence. The policy reserves build up and release over time based on assumptions made at the time of policy issuance such that the reserve is eliminated as policyholders either reach the terminal age for coverage, die, or voluntarily lapse the policy. Policy reserves for Unum US, Unum UK, and Colonial Life products are determined using the net level premium method as prescribed by GAAP. In applying this method, we use, as applicable by product type, morbidity and mortality incidence rate assumptions, claim resolution rate assumptions, and policy persistency assumptions, among others, to determine our expected future claim payments and expected future premium income. We then apply an interest, or discount, rate to determine the present value of the expected future claims and claim expenses we will pay and the expected future premiums we will receive, with a provision for profit allowed.

Policy reserves for our Closed Block segment include certain older policy forms for individual disability, individual and group long-term care, and certain other products, all of which are no longer actively marketed. The reserves for individual disability and individual and group long-term care are determined using the gross premium valuation method. Key assumptions are persistency, mortality and morbidity, claim incidence, claim resolution rates, commission rates, and maintenance expense rates. For long-term care, premium rate increases are also a key assumption. We apply an interest, or discount, rate to determine the present value of the expected future claims, commissions, and expenses we will pay as well as the expected future premiums we will receive, with no provision for future profit. The interest rate is based on our expected net investment returns on the investment portfolio supporting the reserves for these blocks of business. Under the gross premium valuation method, we do not include an embedded provision for the risk of adverse deviation from these assumptions. Gross premium valuation assumptions do not change after the date of loss recognition unless reserves are again determined to be deficient in the future.

Policy reserves for certain other products, excluding individual disability and individual and group long-term care, which are no longer actively marketed and are reported in our Closed Block segment represent $5.8 billion on a gross basis. We have ceded $5.0 billion of these other products' policy reserves to reinsurers. The ceded reserve balance is reported in our consolidated balance sheets as a reinsurance recoverable. We continue to service a block of group pension products, which we have not ceded, and the policy reserves for these products are based on expected mortality rates and retirement rates. Expected future payments are discounted at interest rates reflecting the anticipated investment returns for the assets supporting the liabilities.

Claim Reserves

Claim reserves are established when a claim is incurred or is estimated to have been incurred but not yet reported (IBNR) to us and, as prescribed by GAAP, equals our long-term best estimate of the present value of the liability for future claim payments and claim adjustment expenses. A claim reserve is based on actual known facts regarding the claim, such as the benefits available under the applicable policy, the covered benefit period, the age, and, as appropriate, the occupation and cause of disability of the claimant, as well as assumptions derived from our actual historical experience and expected future changes in experience for factors such as the claim duration, discount rate, and policy benefit offsets, including those for social security and other government-based welfare benefits. Reserves for IBNR claims, similar to incurred claim reserves, include our assumptions for claim duration and discount rates, but because we do not yet know the facts regarding the specific claims, these reserves are also established based on historical incidence rate assumptions, including claim reporting patterns, the average cost of claims, and the expected volumes of incurred claims. Our incurred claim reserves and IBNR claim reserves do not include any provision for the risk of adverse deviation from our assumptions.

Claim reserves, unlike policy reserves, are subject to revision as current claim experience and projections of future factors affecting claim experience change. Each quarter we review our emerging experience to ensure that our claim reserves are appropriate. If we believe, based on our actual experience and our view of future events, that our long-term assumptions need to be modified, we adjust our reserves accordingly with a charge or credit to our current period income.

Multiple estimation methods exist to establish claim reserve liabilities, with each method having its own advantages and disadvantages. Available reserving methods utilized to calculate claim reserves include the tabular reserve method, the paid loss development method, the incurred loss development method, the count and severity method, and the expected claim cost method. No single method is better than the others in all situations and for all product lines. The estimation methods we have chosen are those that we believe produce the most reliable reserves.

We use a tabular reserve methodology for our Unum US group and individual long-term disability claims and for our Closed Block group and individual long-term care claims that have been reported. Under the tabular reserve methodology, reserves for reported claims are based on certain characteristics of the actual reported claimants, such as age, length of time disabled, and medical diagnosis, as well as assumptions regarding claim duration, discount rate, and policy benefit offsets. We believe the tabular reserve method is the most accurate to calculate long-term liabilities and allows us to use the most available known facts about each claim. IBNR claim reserves for our long-term products are calculated using the count and severity method using historical patterns of the claims to be reported and the associated claim costs. For Unum US group short-term disability products, an estimate of the value of future payments to be made on claims already submitted, as well as on IBNR claims, is determined in aggregate using a paid loss development method rather than on the individual claimant basis that we use for reported claims on long-term products. The average length of time between the event triggering a claim under a policy and the final resolution of those claims is much shorter for these products than for our long-term liabilities and results in less estimation variability.

Claim reserves for Unum US group life and accidental death and dismemberment products are related primarily to death claims reported but not yet paid, IBNR death claims, and a liability for waiver of premium benefits. The death claim reserve is based on the actual face amount to be paid, the IBNR reserve is calculated using the paid loss development method, and the waiver of premium benefits reserve is calculated using the tabular reserve methodology.

Claim reserves supporting the group and individual dental and vision products reported in our Unum US segment have a short claim payout period. As a result, the reserves, which primarily represent IBNR and a small amount of claims pending payment, are calculated using the paid loss development method.

Claim reserves supporting our Unum UK segment are calculated using generally the same methodology that we use for Unum US disability and group term life reserves. Claim reserves for our Unum UK group dependent life product are calculated using discounted cash flows, based on our assumptions for claim duration and discount rates. The assumptions used in calculating claim reserves for this segment are based on standard United Kingdom industry experience, adjusted for Unum UK's own experience.

The majority of the Colonial Life segment lines of business have short-term benefits, which generally have less estimation variability than our long-term products because of the shorter claim payout period. Our claim reserves for Colonial Life's lines of business are predominantly determined using the incurred loss development method based on our own experience. The incurred loss development method uses the historical patterns of payments by loss date to predict future claim payments for each loss date. Where the incurred loss development method may not be appropriate, we estimate the incurred claims using an expected claim cost per policy or other measure of exposure. The key assumptions for claim reserves for the Colonial Life lines of business are: (1) the timing, rate, and amount of estimated future claim payments; and (2) the estimated expenses associated with the payment of claims.

The following table displays policy reserves, incurred claim reserves, and IBNR claim reserves by major product line, with the summation of the policy reserves and claim reserves shown both gross and net of the associated reinsurance recoverable. Incurred claim reserves represent the expected benefits payable under each incurred claim, along with other expenses associated with the payment of the claims. IBNR claim reserves include provisions for incurred but not reported claims and a provision for reopened claims for our disability products. The IBNR and reopened claim reserves for our disability products are developed and maintained in aggregate based on historical monitoring. See "Executive Summary" and Note 6 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

(in millions of dollars)	December 31, 2016 Gross Policy Reserves	%	Gross Claim Reserves Incurred	Gross Claim Reserves IBNR	%	Total	Total Reinsurance Ceded	Total Net
Group Disability	$ —	—%	$ 6,201.0	$ 608.6	29.3%	$ 6,809.6	$ 74.3	$ 6,735.3
Group Life and Accidental Death & Dismemberment	65.4	0.3	704.8	192.6	3.9	962.8	4.1	958.7
Individual Disability	544.6	3.0	1,298.5	130.6	6.1	1,973.7	201.0	1,772.7
Voluntary Benefits	1,492.7	8.2	45.5	50.6	0.4	1,588.8	27.7	1,561.1
Dental and Vision	—	—	3.9	8.1	0.1	12.0	0.2	11.8
Unum US Segment	2,102.7	11.5	8,253.7	990.5	39.8	11,346.9	307.3	11,039.6
Unum UK Segment	18.2	0.1	1,714.2	113.3	7.9	1,845.7	81.8	1,763.9
Colonial Life Segment	1,871.0	10.3	277.8	132.0	1.8	2,280.8	7.9	2,272.9
Individual Disability	513.6	2.8	9,696.4	251.6	42.8	10,461.6	1,601.2	8,860.4
Long-term Care	7,898.4	43.3	1,360.4	136.6	6.4	9,395.4	41.8	9,353.6
Other	5,848.3	32.0	189.8	132.1	1.3	6,170.2	5,030.6	1,139.6
Closed Block Segment	14,260.3	78.1	11,246.6	520.3	50.5	26,027.2	6,673.6	19,353.6
Subtotal	$18,252.2	100.0%	$21,492.3	$1,756.1	100.0%	41,500.6	7,070.6	34,430.0
Adjustment Related to Unrealized Investment Gains and Losses						4,253.2	321.3	3,931.9
Consolidated						$45,753.8	$7,391.9	$38,361.9

(in millions of dollars)	December 31, 2015 Gross Policy Reserves	%	Gross Claim Reserves Incurred	Gross Claim Reserves IBNR	%	Total	Total Reinsurance Ceded	Total Net
Group Disability	$ —	—%	$ 6,347.0	$ 597.2	29.2%	$ 6,944.2	$ 66.3	$ 6,877.9
Group Life and Accidental Death & Dismemberment	68.3	0.4	725.9	186.8	3.8	981.0	4.8	976.2
Individual Disability	552.9	3.1	1,238.2	130.8	5.8	1,921.9	109.9	1,812.0
Voluntary Benefits	1,434.4	8.1	48.9	48.5	0.4	1,531.8	28.6	1,503.2
Unum US Segment	2,055.6	11.6	8,360.0	963.3	39.2	11,378.9	209.6	11,169.3
Unum UK Segment	21.0	0.1	2,053.6	135.0	9.2	2,209.6	101.2	2,108.4
Colonial Life Segment	1,760.0	10.0	276.5	132.2	1.7	2,168.7	8.1	2,160.6
Individual Disability	620.0	3.5	9,922.8	259.2	42.8	10,802.0	1,568.5	9,233.5
Long-term Care	7,383.3	41.9	1,225.4	123.4	5.7	8,732.1	42.5	8,689.6
Other	5,810.8	32.9	204.2	140.5	1.4	6,155.5	4,991.0	1,164.5
Closed Block Segment	13,814.1	78.3	11,352.4	523.1	49.9	25,689.6	6,602.0	19,087.6
Subtotal	$17,650.7	100.0%	$22,042.5	$1,753.6	100.0%	41,446.8	6,920.9	34,525.9
Adjustment Related to Unrealized Investment Gains and Losses						3,578.4	263.2	3,315.2
Consolidated						$45,025.2	$7,184.1	$37,841.1

Key Assumptions

The calculation of policy and claim reserves involves numerous assumptions, but the primary assumptions used to calculate reserves are (1) the discount rate, (2) the claim resolution rate, and (3) the claim incidence rate for policy reserves and IBNR claim reserves. Of these assumptions, our discount rate and claim resolution rate assumptions have historically had the most significant effects on our level of reserves because many of our product lines provide benefit payments over an extended period of time.

1. The *discount rate,* which is used in calculating both policy reserves and incurred and IBNR claim reserves, is the interest rate that we use to discount future claim payments to determine the present value. A higher discount rate produces a lower reserve. If the discount rate is higher than our future investment returns, our invested assets will not earn enough investment income to support our future claim payments. In this case, the reserves may eventually be insufficient. We set our assumptions based on our current and expected future investment yield of the assets supporting the reserves, considering current and expected future market conditions. If the investment yield on new investments that are purchased differs from the investment yield of the existing investment portfolio, it is likely that the discount rate assumption on claims will be adjusted to reflect the impact of the new investment yield.
2. The *claim resolution rate,* used for both policy reserves and incurred and IBNR claim reserves, is the probability that a disability or long-term care claim will close due to recovery or death of the insured. It is important because it is used to estimate how long benefits will be paid for a claim. Estimated resolution rates that are set too high will result in reserves that are lower than they need to be to pay the claim benefits over time. Claim resolution assumptions involve many factors, including the cause of disability, the policyholder's age, the type of contractual benefits provided, and the time since initial disability. We primarily use our own claim experience to develop our claim resolution assumptions. These assumptions are established for the probability of death and the probability of recovery from disability. Our studies review actual claim resolution experience over a number of years, with more weight placed on our experience in the more recent years. We also consider any expected future changes in claim resolution experience.
3. The *incidence rate,* used for policy reserves and IBNR claim reserves, is the rate at which new claims are submitted to us. The incidence rate is affected by many factors, including the age of the insured, the insured's occupation or industry, the benefit plan design, and certain external factors such as consumer confidence and levels of unemployment. We establish our incidence assumption using a historical review of actual incidence results along with an outlook of future incidence expectations.

Establishing reserve assumptions is complex and involves many factors. Reserves, particularly for policies offering insurance coverage for long-term disabilities and long-term care, are dependent on numerous assumptions other than just those presented in the preceding discussion. The impact of internal and external events, such as changes in claims operational procedures, economic trends such as the rate of unemployment and the level of consumer confidence, the emergence of new diseases, new trends and developments in medical treatments, and legal trends and legislative changes, including changes to social security and other government-based welfare benefits programs which provide policy benefit offsets, among other factors, will influence claim incidence rates, claim resolution rates, and claim costs. In addition, for policies offering coverage for disability or long-term care at advanced ages, the level and pattern of mortality rates at advanced ages will impact overall benefit costs. Reserve assumptions differ by product line and by policy type within a product line. Additionally, in any period and over time, our actual experience may have a positive or negative variance from our long-term assumptions, either singularly or collectively, and these variances may offset each other. We test the overall adequacy of our reserves using all assumptions and with a long-term view of our expected experience over the life of a block of business rather than test just one or a few assumptions independently that may be aberrant over a short period of time. Therefore, it is not possible to bifurcate the assumptions to evaluate the sensitivity of a change in each assumption, but rather in the aggregate by product line. The following section presents an overview of our trend analysis for key assumptions and the results of variability in our assumptions, in aggregate, for the reserves which we believe are reasonably possible to have a material impact on our future financial results if actual claims yield a materially different amount than what we currently expect and have reserved for, either favorable or unfavorable.

Trends in Key Assumptions

Generally, we do not expect our mortality and morbidity claim incidence trends or our persistency trends to change significantly in the short-term, and to the extent that these trends do change, we expect those changes to be gradual over a longer period of time. We have historically experienced an increase in our group long-term disability morbidity claim incidence trends during and following a recessionary period and believe claim incidence trends may continue to somewhat follow general economic conditions and demographics of the general workforce.

Claim incidence rates for Unum US and Unum UK group long-term disability were lower during 2016 compared to the prior year. Claim incidence rates for our Closed Block long-term care line of business continue to be generally consistent with the revised assumptions we established during our 2014 reserve review and assumption update. See "2014 Long-term Care Reserve Increase" contained herein.

Interest rates were slightly higher at the end of 2016 compared to the overall level of 2015. However, they remain well below historical norms. The assumptions we used to discount our reserves during this period were slightly lower for certain of our product lines. Reserve discount rate assumptions for new policies and new claims are periodically adjusted to reflect our current and expected net investment returns. Changes in our average discount rate assumptions tend to occur gradually over a longer period of time because of the long-duration investment portfolios which support the reserves for the majority of our lines of business.

Our claim resolution rate assumption used in determining reserves is our expectation of the resolution rate we will experience over the life of the block of business and will vary from actual experience in any one period, both favorably and unfavorably. Claim resolution rates are very sensitive to operational and environmental changes and have a greater chance of significant variability in a shorter period of time than our other reserve assumptions. These rates are reviewed on a quarterly basis for the death and recovery components separately. Claim resolution rates in our Unum US group long-term disability product line and in our Closed Block individual disability product line have over the last several years exhibited some variability. Relative to the resolution rate we expect to experience over the life of the block of business, actual quarterly rates during 2015 and 2016 have varied by -5 and +3 percent in our Unum US group long-term disability line of business and between -3 and +5 percent in our Closed Block individual disability line of business, which represent the majority of our claim reserves. During 2016, claim resolution rates pertaining to life and overall mortality experience were relatively consistent with the levels of 2015 and 2014. On an annual basis for the years 2014 to 2016, our overall claim resolution rates were fairly consistent with or slightly favorable to our long-term assumptions.

We monitor and test our reserves for adequacy relative to all of our assumptions in the aggregate. In our estimation, scenarios based on reasonably possible variations in each of our reserve assumptions, when modeled together in aggregate, could produce potential results as illustrated in the chart below. The major contributor to the variance for both the Unum US group long-term disability line of business and the Closed Block individual disability line of business is the claim resolution rate.

(in millions of dollars)	Potential impact, positive or negative, of variations in reserve assumptions on our December 31, 2016 claim reserve balance	
Unum US group long-term disability	3.3%	$220
Closed Block individual disability	2.5%	$237

In addition, we consider variability in our reserve assumptions related to long-term care policy reserves. These reserves are held under the gross premium valuation method with assumptions established as of December 31, 2014, the date of loss recognition. Assumptions for policy reserves do not change after the date of loss recognition unless reserves are again determined to be deficient. As such, positive developments will result in the accumulation of reserve margin, while adverse developments would result in an additional reserve charge. Policy reserves for long-term care are based upon a number of key assumptions, and each assumption has various factors which may impact the long-term outcome. Key assumptions with respect to morbidity, mortality, persistency, interest rates, and future premium rate increases must incorporate extended views of expectations for many years into the future. Reserves are highly sensitive to these estimates. For example, a 25 basis point change in the assumed discount rate over the lifetime of our long-term care business would impact reserves by approximately $450 million, assuming all other factors held constant.

Key assumptions and related impacts are also heavily interrelated in both their outcome and in their effects on reserves. For example, changes in the view of morbidity and mortality might be mitigated by either potential future premium rate increases and/or morbidity improvements due to general improvement in health and/or medical breakthroughs. There is potentially a wide range of outcomes for each assumption and in totality.

We believe that these ranges provide a reasonable estimate of the possible changes in reserve balances for those product lines where we believe it is possible that variability in the assumptions, in the aggregate, could result in a material impact on our reserve levels, but we record our reserves based on our long-term best estimate. Because these product lines have long-term claim payout periods, there is a greater potential for significant variability in claim costs, either positive or negative. We closely monitor emerging experience and use these results to inform our view of long-term assumptions.

Deferred Acquisition Costs (DAC)

We defer incremental direct costs associated with the successful acquisition of new or renewal insurance contracts and amortize (expense) these costs over the life of the related policies. Deferred costs include certain commissions, other agency compensation, selection and policy issue expenses, and field expenses. Acquisition costs that do not vary with the production of new business, such as commissions on group products which are generally level throughout the life of the policy, are excluded from deferral.

Approximately 87.6 percent of our DAC relates to non-interest sensitive products, and we amortize DAC for these products in proportion to the premium income we expect to receive over the life of the policies. DAC related to interest sensitive policies is amortized over the lives of the policies in relation to the present value of estimated gross profits from surrender charges, mortality margins, investment returns, and expense margins. Key assumptions used in developing the future amortization of DAC are persistency, premium income, and for our interest sensitive products, mortality margins and investment returns. We use our own historical experience and expectation of the future performance of our businesses in determining our assumptions. For non-interest sensitive products, the estimated premium income in the early years of the amortization period is generally higher than in the later years due to the anticipated cumulative effect of policy persistency in the early years, which results in a greater proportion of the costs being amortized in the early years of the life of the policy. During 2016, our key assumptions used to develop the future amortization of acquisition costs deferred during 2016 did not change materially from those used in 2015. Generally, we do not expect our key assumptions to change significantly in the short-term, and to the extent that these trends do change, we expect those changes to be gradual over a longer period of time.

The following are our current assumptions regarding the length of our amortization periods, the approximate DAC balance that remains at the end of years 3, 10, and 15 as a percentage of the cost initially deferred, and our DAC balances as of December 31, 2016 and 2015.

(in millions of dollars)	Amortization Period	Balance Remaining as a % of Initial Deferral			DAC Balances at December 31	
		Year 3	Year 10	Year 15	2016	2015
Unum US						
Group Disability	6	29%	0%	0%	$ 89.8	$ 79.3
Group Life and Accidental Death & Dismemberment	6	34%	0%	0%	73.4	66.9
Supplemental and Voluntary:						
Individual Disability	20	70%	43%	20%	432.4	421.4
Voluntary Benefits	20	54%	21%	7%	580.0	568.8
Dental and Vision	6	31%	0%	0%	0.9	—
Unum UK						
Group Long-term Disability	3	0%	0%	0%	3.6	4.7
Group Life	3	0%	0%	0%	1.3	1.3
Supplemental	20	55%	13%	2%	16.5	21.1
Colonial Life						
Accident, Sickness, and Disability	15	45%	11%	1%	451.8	415.1
Life	25	68%	30%	14%	243.1	238.8
Cancer and Critical Illness	19	58%	25%	10%	201.4	191.1
Totals					$2,094.2	$2,008.5

Amortization of DAC is adjusted to reflect actual experience for assumptions which deviate compared to the anticipated experience. Any deviations from projections may result in a change to the rate of amortization in the period such events occur. As an example, for our non-interest sensitive products, we may experience accelerated amortization if policies terminate earlier than projected, or we may experience a slower rate of amortization if policies persist longer than projected. Our actual experience has not varied materially from our assumptions during the last three years.

See Note 1 of the "Notes to Consolidated Financial Statements" contained herein for further discussion of our DAC accounting policy.

Fair Value of Investments

All of our fixed maturity securities are classified as available-for-sale and are reported at fair value. Our derivative financial instruments, including certain derivative instruments embedded in other contracts, are reported as either assets or liabilities and measured at fair value. We hold an immaterial amount of equity securities, which are also reported at fair value.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date and therefore represents an exit price, not an entry price. The exit price objective applies regardless of our intent and/or ability to sell the asset or transfer the liability at the measurement date. We generally use valuation techniques consistent with the market approach, and to a lesser extent, the income approach. The market approach uses prices and other relevant information from market transactions involving identical or comparable assets or liabilities and the income approach converts future amounts, such as cash flows or earnings, to a single present amount, or a discounted amount. We believe the market approach valuation technique provides more observable data than the income approach, considering the types of investments we hold.

The degree of judgment utilized in measuring the fair value of financial instruments generally correlates to the level of pricing observability. Financial instruments with readily available active quoted prices or for which fair value can be measured from actively quoted prices in active markets generally have more pricing observability and less judgment utilized in measuring fair value. The market sources from which we obtain or derive the fair values of our assets and liabilities carried at market value include quoted market prices for actual trades, price quotes from third party pricing vendors, price quotes we obtain from outside brokers, matrix pricing, discounted cash flow, and observable prices for similar publicly traded or privately traded issues that incorporate the credit quality and industry sector of the issuer. Our fair value measurements could differ significantly based on the valuation technique and available inputs.

Inputs to valuation techniques refer broadly to the assumptions that market participants use in pricing assets or liabilities, including assumptions about risk, for example, the risk inherent in a particular valuation technique used to measure fair value and/or the risk inherent in the inputs to the valuation technique. We use observable and unobservable inputs in measuring the fair value of our financial instruments. Observable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from independent sources. Unobservable inputs are inputs that reflect our own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances.

Certain of our investments do not have readily determinable market prices and/or observable inputs or may at times be affected by the lack of market liquidity. For these securities, we use internally prepared valuations combining matrix pricing with vendor purchased software programs, including valuations based on estimates of future profitability, to estimate the fair value. Additionally, we may obtain prices from independent third-party brokers to aid in establishing valuations for certain of these securities. Key assumptions used by us to determine fair value for these securities include risk-free interest rates, risk premiums, performance of underlying collateral (if any), and other factors involving significant assumptions which may or may not reflect those of an active market.

As of December 31, 2016, the key assumptions we generally used to estimate the fair value of these types of securities included those listed below. Where appropriate, we have noted the assumption used for the prior period as well as the reason for the change.

- Risk-free interest rates of 1.93 percent for five-year maturities to 3.07 percent for 30-year maturities were derived from the December 31, 2016 yield curve for U.S. Treasury Bonds with similar maturities. This compares to interest rates of 1.76 percent for five-year maturities to 3.02 percent for 30-year maturities used at December 31, 2015.
- Baa corporate bond spread adjustments ranging from 1.20 percent to 2.32 percent were added to the risk-free rate to reflect additional credit risk and the lack of liquidity. We used spread adjustments ranging from 1.60 percent to 3.30 percent at December 31, 2015. The changes were based on observable market spreads. Newly issued private placement securities have historically offered yield premiums higher than a similar interest rate spread on comparable newly issued public securities.
- Additional basis points were added as deemed appropriate for foreign investments, certain industries, and individual securities in certain industries that are considered to be of greater risk.

As of December 31, 2016, approximately 9.2 percent of our fixed maturity securities were categorized as Level 1, 86.6 percent as Level 2, and 4.2 percent as Level 3. Level 1 is the highest category of the three-level fair value hierarchy classification wherein inputs are unadjusted and represent quoted prices in active markets for identical assets or liabilities. The Level 2 category includes assets or liabilities valued using inputs (other than those included in the Level 1 category) that are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life. The Level 3 category is the lowest category of the fair value hierarchy and reflects the judgment of management regarding what market participants would use in pricing assets or liabilities at the measurement date using unobservable inputs to extrapolate an estimated fair value.

Rapidly changing credit and equity market conditions can materially impact the valuation of securities, and the period to period changes in value can vary significantly.

See Note 2 of the "Notes to Consolidated Financial Statements" contained herein.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Investment Impairments

One of the significant estimates related to investments is our impairment valuation. In determining when a decline in fair value below amortized cost of a fixed maturity security is other than temporary, we evaluate the following factors:

- Whether we expect to recover the entire amortized cost basis of the security
- Whether we intend to sell the security or will be required to sell the security before the recovery of its amortized cost basis
- Whether the security is current as to principal and interest payments
- The significance of the decline in value
- The time period during which there has been a significant decline in value
- Current and future business prospects and trends of earnings
- The valuation of the security's underlying collateral
- Relevant industry conditions and trends relative to their historical cycles
- Market conditions
- Rating agency and governmental actions
- Bid and offering prices and the level of trading activity
- Adverse changes in estimated cash flows for securitized investments
- Changes in fair value subsequent to the balance sheet date
- Any other key measures for the related security

We evaluate available information, including the factors noted above, both positive and negative, in reaching our conclusions. In particular, we also consider the strength of the issuer's balance sheet, its debt obligations and near term funding requirements, cash flow and liquidity, the profitability of its core businesses, the availability of marketable assets which could be sold to increase liquidity, its industry fundamentals and regulatory environment, and its access to capital markets. Although all available and applicable factors are considered in our analysis, our expectation of recovering the entire amortized cost basis of the security, whether we intend to sell the security, whether it is more likely than not we will be required to sell the security before recovery of its amortized cost, and whether the security is current on principal and interest payments are the most critical factors in determining whether impairments are other than temporary. The significance of the decline in value and the length of time during which there has been a significant decline are also important factors, but we generally do not record an impairment loss based solely on these two factors, since often other more relevant factors will impact our evaluation of a security.

While determining other-than-temporary impairments is a judgmental area, we utilize a formal, well-defined, and disciplined process to monitor and evaluate our fixed income investment portfolio, supported by issuer specific research and documentation as of the end of each period. The process results in a thorough evaluation of problem investments and the recording of losses on a timely basis for investments determined to have an other-than-temporary impairment.

We use a comprehensive rating system to evaluate the investment and credit risk of our mortgage loans and to identify specific properties for inspection and reevaluation. Mortgage loans are considered impaired when, based on current information and events, it is probable that we will be unable to collect all amounts due according to the contractual terms of the loan agreement. We establish an allowance for probable losses on mortgage loans based on a review of individual loans, considering the value of the underlying collateral, the value of which is periodically assessed. Mortgage loans are not reported at fair value in our consolidated balance sheets unless the mortgage loan is considered impaired, in which case the impairment is recognized as a realized investment loss in our consolidated statements of income.

There are a number of significant risks inherent in the process of monitoring our investments for impairments and determining when and if an impairment is other than temporary. These risks and uncertainties include the following possibilities:

- The assessment of a borrower's ability to meet its contractual obligations will change.
- The economic outlook, either domestic or foreign, may be less favorable or may have a more significant impact on the borrower than anticipated, and as such, the investment may not recover in value.
- New information may become available concerning the security, such as disclosure of accounting irregularities, fraud, or corporate governance issues.
- Significant changes in credit spreads may occur in the related industry.
- Significant increases in interest rates may occur and may not return to levels similar to when securities were initially purchased.
- Adverse rating agency actions may occur.

See Notes 1 and 3 of the "Notes to Consolidated Financial Statements" contained herein.

Pension and Postretirement Benefit Plans

We sponsor several defined benefit pension and other postretirement benefit (OPEB) plans for our employees, including non-qualified pension plans. The U.S. qualified and non-qualified defined benefit pension plans comprise the majority of our total benefit obligation and benefit cost. We have a separate defined benefit plan for eligible employees in our U.K. operation.

The U.S. defined benefit pension plans were closed to new entrants and were amended to freeze participation as of December 31, 2013. The U.K. defined benefit pension plan was closed to new entrants effective December 31, 2002 and was subsequently amended to freeze participation effective June 30, 2014. The OPEB plan was closed to new entrants effective December 31, 2012.

Assumptions

Our net periodic benefit costs and the value of our benefit obligations for these plans are determined based on a set of economic and demographic assumptions that represent our best estimate of future expected experience. Major assumptions used in accounting for these plans include the expected discount (interest) rate, the long-term rate of return on plan assets, and mortality rates. We also use, as applicable, expected increases in compensation levels and a weighted average annual rate of increase in the per capita cost of covered benefits, which reflects a health care cost trend rate, and the U.K. pension plan also uses expected cost of living increases to plan benefits.

The assumptions chosen for our pension and OPEB plans are reviewed annually, using a December 31 measurement date for each of our plans unless we are required to perform an interim remeasurement. The discount rate, expected long-term rate of return, and mortality rate assumptions have the most significant effect on our net periodic benefit costs associated with these plans. In addition to the effect of changes in our assumptions, the net periodic cost or benefit obligation under our pension and OPEB plans may change due to factors such as plan amendments, actual experience being different from our assumptions, special benefits to terminated employees, and/or changes in benefits provided under the plans.

- *Discount rate* — This interest assumption is based on the yield derived from a portfolio of high quality fixed income corporate debt instruments that reasonably match the timing and amounts of projected future benefits for each of our retirement-related benefit plans. The rate is determined at the measurement date. A lower discount rate increases the present value of benefit obligations and increases our net periodic benefit cost.
- *Long-term rate of return* — This assumption is selected from a range of probable return outcomes generated by statistical analysis of the asset portfolio. The market-related value as it relates to our estimate of long-term rate of return equals the fair value of plan assets, determined as of the measurement date. The return on plan assets recognizes all asset gains and losses, including changes in fair value, through the measurement date. Our expectations for the future investment returns of the asset categories are based on a combination of historical market performance, evaluations of investment forecasts obtained from external consultants and economists, and current market yields. The expected return for the total portfolio is calculated based on the plan's current asset holdings. The actual rate of return on plan assets is determined based on the fair value of the plan assets at the beginning and the end of the period, adjusted for contributions and benefit payments. A lower long-term rate of return on plan assets increases our net periodic benefit cost.

  Investment risk is measured and monitored on an ongoing basis through annual liability measurements, periodic asset/liability studies, and quarterly investment portfolio reviews. Risk tolerance is established through consideration of plan liabilities, plan funded status, and corporate financial condition. We believe our investment portfolios are well diversified by asset class and sector, with no undue risk concentrations in any one category. See Note 9 of the "Notes to Consolidated Financial Statements" contained herein for further discussion of the investment portfolios for our plans.
- *Mortality rate* — This assumption reflects our best estimate, as of the measurement date, of the life expectancies of plan participants in order to determine the expected length of time for benefit payments. We derive our assumptions from industry mortality tables.

The weighted average assumptions used in the measurement of our net periodic benefit costs for the years ended December 31 are as follows:

	Pension Benefits					
	U.S. Plans		U.K. Plan		OPEB	
Assumption	2017	2016	2017	2016	2017	2016
Discount Rate	4.40%	4.80%	2.70%	3.80%	4.20%	4.70%
Expected Long-term Rate of Return on Plan Assets	7.25%	7.50%	3.50%	4.90%	5.75%	5.75%

The following illustrates the sensitivity of the below items to a 50 basis point change in the discount rate or the expected long-term rate of return on plan assets:

		At or for the Year Ended December 31, 2016			
Assumption	($ in millions)	Change	Net Periodic Benefit Cost, Before Tax	Benefit Obligation	Stockholders' Equity, After Tax
Discount Rate		+ 50 bp	$(2.6)	$(174.9)	$ 117.6
Discount Rate		– 50 bp	2.9	196.6	(132.2)
Expected Long-term Rate of Return on Plan Assets		+ 50 bp	(8.0)	N/A	N/A
Expected Long-term Rate of Return on Plan Assets		– 50 bp	8.0	N/A	N/A

Benefit Obligation and Fair Value of Plan Assets

During 2016, the fair value of plan assets in our U.S. qualified defined benefit pension plan increased $50.8 million, or 3.6 percent due to a favorable return on assets of approximately 8 percent, partially offset by the payment of benefits and expenses. The fair value of plan assets in our U.K. pension plan increased £28.1 million, or 17.9 percent, due to a favorable return on assets of approximately 20 percent, partially offset by the payment of benefits and expenses. Although our rate of return on plan assets for 2016 exceeded our assumptions used in the measurement of our net periodic benefit costs, we believe our assumptions appropriately reflect the impact of the current economic environment and our expectations for the future investment returns based on the plan's asset allocation.

As of December 31, 2016, our pension and OPEB plans have an aggregate unrecognized net actuarial loss of $736.0 million and an unrecognized prior service credit of $11.1 million, which together represent the cumulative liability and asset gains and losses as well as the portion of prior service credits that have not been recognized in pension expense. The unrecognized net actuarial loss for our pension plans, which is $746.1 million at December 31, 2016, will be amortized over the average remaining life expectancy of the plan, which is approximately 25 years for the U.S. plan and 33 years for the U.K. plan, to the extent that it exceeds the 10 percent corridor, as described below. The unrecognized net actuarial gain of $10.1 million for our OPEB plan will be amortized over the average future working life of OPEB plan participants, estimated at four years, to the extent the loss is outside of the corridor. The corridor for the pension and OPEB plans is established based on the greater of 10 percent of the plan assets or 10 percent of the benefit obligation. At December 31, 2016, $506.6 million of the actuarial loss was outside of the corridor for the U.S. plans and £17.2 million was outside of the corridor for the U.K. plan. At December 31, 2016, none of the actuarial gain was outside of the corridor for the OPEB plan.

The amortization of the unrecognized actuarial gain or loss and the unrecognized prior service credit is a component of our net periodic benefit cost and equaled $15.8 million, $11.6 million, and $3.9 million in 2016, 2015, and 2014, respectively.

The fair value of plan assets in our U.S. qualified defined benefit pension plan was $1,454.1 million at December 31, 2016, compared to $1,403.3 million at December 31, 2015. The plan was in an underfunded position of $312.1 million and $233.8 million at December 31, 2016 and December 31, 2015, respectively. This year-over-year change was due primarily to the increase in period benefit obligations due to the decrease in discount rate, partially offset by higher than expected asset returns.

The fair value of plan assets in our U.K. pension plan was £185.1 million at December 31, 2016, compared to £157.0 million at December 31, 2015. The U.K. pension plan was in an overfunded position of £4.3 million and £18.8 million at December 31, 2016 and 2015, respectively.

The fair value of plan assets in our OPEB plan was $10.8 million and $11.2 million at December 31, 2016 and 2015, respectively. These assets represent life insurance contracts to fund the life insurance benefit portion of our OPEB plan. Our OPEB plan represents a non-vested, non-guaranteed obligation, and current regulations do not require specific funding levels for these benefits, which are comprised of retiree life, medical, and dental benefits. It is our practice to use general assets to pay medical and dental claims as they come due in lieu of utilizing plan assets for the medical and dental benefit portions of our OPEB plan.

See Note 9 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

Income Taxes

We provide for federal, state, and foreign income taxes currently payable, as well as those deferred due to temporary differences between the financial reporting and tax bases of assets and liabilities. Our accounting for income taxes represents our best estimate of various events and transactions. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws in a multitude of jurisdictions, both domestic and foreign. The amount of income taxes we pay is subject to ongoing audits in various jurisdictions, and a material assessment by a governing tax authority could affect profitability.

We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. Significant judgment is required in determining valuation allowances. In evaluating the ability to recover deferred tax assets, we consider all available positive and negative evidence including past operating results, the existence of cumulative losses in the most recent years, forecasted earnings, future taxable income, and prudent and feasible tax planning strategies. In the event we determine that we most likely will not be able to realize all or part of our deferred tax assets in the future, an increase to the valuation allowance is charged to earnings in the period such determination is made. Likewise, if it is later determined that it is more likely than not that those deferred tax assets will be realized, the previously provided valuation allowance is reversed.

In establishing a liability for unrecognized tax benefits, assumptions are made in determining whether, and to what extent, a tax position may be sustained. GAAP prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in income tax returns. The evaluation of a tax position is a two step process. The first step is to determine whether it is more likely than not that a tax position will be sustained upon examination based on the technical merits of the position. The second step is to measure a position that satisfies the recognition threshold at the largest amount of benefit that is greater than 50 percent likely of being realized upon ultimate settlement. Tax positions that previously failed to meet the more likely than not threshold but that now satisfy the recognition threshold are recognized in the first subsequent financial reporting period in which that threshold is met. Previously recognized tax positions that no longer meet the more likely than not recognition threshold are derecognized in the first subsequent financial reporting period in which that threshold is no longer met. If a previously recognized tax position is settled for an amount that is different from the amount initially measured, the difference will be recognized as a tax benefit or expense in the period the settlement is effective.

Future events, such as changes in tax laws, tax regulations, or interpretations of such laws or regulations, could have an impact on our provision for income tax and our effective tax rate, which could significantly affect the amounts reported in our financial statements.

See Note 7 of the "Notes to Consolidated Financial Statements" contained herein.

Contingent Liabilities

On a quarterly basis, we review relevant information with respect to litigation and contingencies to be reflected in our consolidated financial statements. An estimated loss is accrued when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. It is possible that our results of operations or cash flows in a particular period could be materially affected by an ultimate unfavorable outcome of pending litigation or regulatory matters depending, in part, on our results of operations or cash flows for the particular period. See Note 14 of the "Notes to Consolidated Financial Statements" contained herein.

Accounting Developments

For information on new accounting standards and the impact, if any, on our financial position or results of operations, see Note 1 of the "Notes to Consolidated Financial Statements" contained herein.

Consolidated Operating Results

	Year Ended December 31				
(in millions of dollars)	2016	% Change	2015	% Change	2014
Revenue					
Premium Income	$ 8,357.7	3.4%	$ 8,082.4	3.7%	$ 7,797.2
Net Investment Income	2,459.0	(0.9)	2,481.2	(0.4)	2,492.2
Net Realized Investment Gain (Loss)	24.2	(155.3)	(43.8)	N.M.	16.1
Other Income	205.6	(2.8)	211.5	(3.4)	219.0
Total Revenue	11,046.5	2.9	10,731.3	2.0	10,524.5
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	6,941.8	2.3	6,782.8	(7.2)	7,310.8
Commissions	1,026.7	3.1	996.3	6.5	935.3
Interest and Debt Expense	166.0	8.6	152.8	(8.8)	167.5
Deferral of Acquisition Costs	(592.4)	4.0	(569.7)	8.7	(524.0)
Amortization of Deferred Acquisition Costs	493.0	2.2	482.3	9.4	440.8
Compensation Expense	832.1	(0.4)	835.1	1.7	820.9
Other Expenses	831.6	2.2	813.4	(2.1)	831.2
Total Benefits and Expenses	9,698.8	2.2	9,493.0	(4.9)	9,982.5
Income Before Income Tax	1,347.7	8.8	1,238.3	128.5	542.0
Income Tax	416.3	12.1	371.2	165.3	139.9
Net Income	$ 931.4	7.4	$ 867.1	115.6	$ 402.1

N.M. = not a meaningful percentage

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The comparability of our financial results between years is affected by the fluctuation in the British pound sterling to dollar exchange rate. The functional currency of our U.K. operations is the British pound sterling. In periods when the pound weakens relative to the preceding period, translating pounds into dollars decreases current period results relative to the prior period. In periods when the pound strengthens, translating pounds into dollars increases current period results relative to the prior period.

Our weighted average pound/dollar exchange rate was 1.357, 1.528, and 1.646 for years ended 2016, 2015, and 2014, respectively. If the 2015 and 2014 results for our U.K. operations had been translated at the lower exchange rate of 2016, our operating revenue by segment in 2015 and 2014 would have been lower by approximately $80 million and $135 million, respectively, and our operating income in 2015 and 2014 would have been lower by approximately $25 million and $10 million, respectively. However, it is important to distinguish between translating and converting foreign currency. Except for a limited number of transactions, we do not actually convert pounds into dollars. As a result, we view foreign currency translation as a financial reporting item and not a reflection of operations or profitability in the U.K.

We continued to report year-over-year premium growth in 2016 and 2015 in each of our principal operating business segments, as measured in local currency, due to sales growth, premium rate increases, the addition of the dental and vision product offerings, and generally stable to favorable persistency. Premium income continues to decline, as expected, in our Closed Block segment.

Net investment income declined slightly in 2016 relative to 2015 due primarily to a decrease in yield on invested assets and the unfavorable impact of the lower foreign currency exchange rate on translated financial results for 2016, partially offset by higher levels of invested assets. Net investment income declined in 2015 relative to 2014 due primarily to a decrease in yield on invested assets and lower income from inflation index-linked bonds in our Unum UK segment, partially offset by higher levels of invested assets and higher miscellaneous investment income, which includes income from bond call premiums, mortgage fees and payoffs, and partnership investments.

We recognized $30.5 million of other-than-temporary impairment losses on fixed maturity securities in 2016 compared to losses of $32.4 million and $13.5 million in 2015 and 2014, respectively. We recognized hedge gains of $35.9 million during 2015 associated with the maturity of debt issued by one of our U.K. subsidiaries and $13.1 million during 2014 associated with the early retirement of a portion of that debt. Also included in net realized investment gains and losses were changes in the fair value of an embedded derivative in a modified coinsurance arrangement, which resulted in realized gains (losses) of $40.9 million, $(37.7) million, and $3.3 million in 2016, 2015, and 2014, respectively. See Notes 4 and 8 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

Overall benefits experience was favorable in 2016 relative to the prior periods, with a consolidated benefit ratio of 83.1 percent in 2016 compared to 83.9 percent in 2015 and 93.8 percent in 2014. Excluding the 2014 reserve adjustment, the benefit ratio for 2014 was 84.8 percent. The underlying benefits experience for each of our operating business segments is discussed more fully in "Segment Results" contained herein.

Commissions and the deferral of acquisition costs increased year-over-year in each of the years presented above due primarily to sales growth. Growth in the level of the deferred asset resulted in higher amortization in each of the years presented, relative to the preceding period. Also affecting the year-over-year comparability of amortization of acquisition costs was the increase in amortization in 2015 due to a higher level of Unum US supplemental and voluntary policy terminations relative to assumptions for certain issue years.

Interest and debt expense was higher in 2016 relative to 2015 due primarily to higher levels of outstanding debt during 2016. Interest and debt expense was lower in 2015 relative to the prior year due primarily to $13.2 million of costs incurred in 2014 related to the early retirement of a portion of the debt issued by one of our U.K. subsidiaries. See Note 8 of the "Notes to Consolidated Financial Statements" contained herein for further discussion.

Other expenses, including compensation expense, increased in 2016 relative to 2015. However, the premium income growth rate in 2016 more than offset the growth rate in other expenses as we continue our focus on expense management and operating efficiencies, resulting in a decline in the other expense ratio during 2016 relative to the prior year. Other expenses, including compensation expense, decreased in 2015 compared to 2014 primarily due to the impact of the settlement loss recognized in 2014 in conjunction with a pension plan amendment. See Note 9 in the "Notes to Consolidated Financial Statements" contained herein for further discussion of our employee benefit plans.

Our effective income tax rate for 2016 was 30.9 percent, compared to 30.0 percent in 2015 and 25.8 percent in 2014. Our effective tax rate differs from the U.S. statutory rate of 35 percent primarily due to tax credits and foreign earnings taxed at lower rates than the U.S. statutory rate. Our effective tax rates for 2016 and 2015 were favorably impacted by the enactment of income tax rate reductions by the U.K government. The enactments reduced the net deferred tax liability related to our U.K. operations by $4.5 million in 2016 and $6.5 million in 2015. Our 2015 income tax also includes a reduction in federal income taxes of $6.8 million related to our resolution with the Internal Revenue Service of certain outstanding issues. In 2014, our U.S. earnings included a long-term care reserve charge that resulted in a larger proportion of our 2014 earnings derived from our foreign operations and taxed at the lower rate, therefore reducing our overall effective tax rate. See Note 7 in the "Notes to Consolidated Financial Statements" contained herein for further discussion.

In describing our results, we may at times note certain items and exclude the impact on financial ratios and metrics to enhance the understanding and comparability of our operational performance and the underlying fundamentals, but this exclusion is not an indication that similar items may not recur. We also measure and analyze our segment performance on the basis of "operating revenue" and "operating income" or "operating loss", which differ from total revenue and income before income tax as presented in our consolidated statements of income due to the exclusion of net realized investment gains and losses and non-operating retirement-related gains or losses. These performance measures are in accordance with GAAP guidance for segment reporting, but they should not be viewed as a substitute for total revenue, income before income tax, or net income. See "Reconciliation of Non-GAAP Financial Measures" contained herein. See also "Segment Results" contained herein for further discussion of operating and sales results for each of our segments and major product lines.

Consolidated Sales Results

Shown below are sales results for our three principal operating business segments.

	Year Ended December 31				
(in millions)	2016	% Change	2015	% Change	2014
Unum US	$943.8	0.4%	$939.6	4.2%	$902.1
Unum UK	£ 62.7	13.8%	£ 55.1	6.2%	£ 51.9
Colonial Life	$483.6	10.3%	$438.5	6.9%	$410.1

Sales shown in the preceding chart generally represent the annualized premium income on new sales which we expect to receive and report as premium income during the next 12 months following or beginning in the initial quarter in which the sale is reported, depending on the effective date of the new sale. Sales do not correspond to premium income reported as revenue in accordance with GAAP. This is because new annualized sales premiums reflect current sales performance and what we expect to recognize as premium income over a 12 month period, while premium income reported in our financial statements is reported on an "as earned" basis rather than an annualized basis and also includes renewals and persistency of in-force policies written in prior years as well as current new sales.

Sales, persistency of the existing block of business, employment and salary growth, and the effectiveness of a renewal program are indicators of growth in premium income. Trends in new sales, as well as existing market share, also indicate the potential for growth in our respective markets and the level of market acceptance of price changes and new product offerings. Sales results may fluctuate significantly due to case size and timing of sales submissions.

See "Segment Results" as follows for a discussion of sales by segment.

Segment Results

Our reporting segments are comprised of the following: Unum US, Unum UK, Colonial Life, Closed Block, and Corporate. Financial information for each of our reporting segments is as follows.

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Unum US Segment

The Unum US segment includes group long-term and short-term disability insurance, group life and accidental death and dismemberment products, and supplemental and voluntary lines of business, which are comprised of individual disability, voluntary benefits, and dental and vision products. During the third quarter of 2016, we acquired Starmount, a provider of dental and vision insurance in the U.S. workplace. The acquisition of Starmount did not have a material impact on our operating results or sales for 2016. See "Acquisition of Business" contained herein Note 13 of the "Notes to Consolidated Financial Statements" for further information.

Unum US Operating Results

Shown below are financial results for the Unum US segment. In the sections following, financial results and key ratios are also presented for the major lines of business within the segment.

	Year Ended December 31				
(in millions of dollars, except ratios)	2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income	$5,240.9	5.7%	$4,960.0	6.4%	$4,659.7
Net Investment Income	828.7	(4.2)	865.3	(1.5)	878.9
Other Income	113.3	(4.9)	119.2	(2.4)	122.1
Total	6,182.9	4.0	5,944.5	5.0	5,660.7
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	3,624.3	4.2	3,476.7	5.7	3,288.1
Commissions	580.4	3.2	562.2	6.3	528.7
Deferral of Acquisition Costs	(314.1)	2.2	(307.3)	5.0	(292.7)
Amortization of Deferred Acquisition Costs	275.2	1.1	272.3	9.8	248.1
Other Expenses	1,102.9	1.1	1,090.6	4.5	1,043.6
Total	5,268.7	3.4	5,094.5	5.8	4,815.8
Operating Income	$ 914.2	7.6	$ 850.0	0.6	$ 844.9
Operating Ratios (% of Premium Income):					
Benefit Ratio	69.2%		70.1%		70.6%
Other Expense Ratio	21.0%		22.0%		22.4%
Operating Income Ratio	17.4%		17.1%		18.1%

Unum US Group Disability Operating Results

Shown below are financial results and key performance indicators for Unum US group disability.

(in millions of dollars, except ratios)	Year Ended December 31 2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Group Long-term Disability	$1,726.6	5.0%	$1,644.7	5.9%	$1,553.5
Group Short-term Disability	626.1	3.1	607.4	8.8	558.1
Total Premium Income	2,352.7	4.5	2,252.1	6.7	2,111.6
Net Investment Income	479.5	(3.4)	496.5	(3.8)	515.9
Other Income	91.1	(1.9)	92.9	2.1	91.0
Total	2,923.3	2.9	2,841.5	4.5	2,718.5
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	1,863.8	1.6	1,834.0	5.0	1,746.4
Commissions	178.2	3.5	172.2	6.8	161.2
Deferral of Acquisition Costs	(46.4)	7.4	(43.2)	7.5	(40.2)
Amortization of Deferred Acquisition Costs	35.9	6.5	33.7	28.1	26.3
Other Expenses	572.1	(0.1)	572.4	4.1	550.0
Total	2,603.6	1.3	2,569.1	5.1	2,443.7
Operating Income	$ 319.7	17.4	$ 272.4	(0.9)	$ 274.8
Operating Ratios (% of Premium Income):					
Benefit Ratio	79.2%		81.4%		82.7%
Other Expense Ratio	24.3%		25.4%		26.0%
Operating Income Ratio	13.6%		12.1%		13.0%
Persistency:					
Group Long-term Disability	91.0%		92.1%		90.6%
Group Short-term Disability	87.7%		88.1%		89.6%

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Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income increased compared to 2015, driven primarily by growth in the in-force block due to prior year sales, partially offset by lower persistency. Net investment income was lower relative to 2015 due primarily to a decline in yield on invested assets. Other income, which is comprised primarily of fees from administrative services products, is generally consistent with 2015.

Benefits experience was favorable compared to 2015 due primarily to lower claim incidence rates and favorable claim recovery experience in our group long-term disability product line as well as lower prevalence rates in our group short-term disability product line. Our renewal premium rate increases over the past several quarters also contributed to the improvement in the benefit ratio. Partially offsetting the favorable claim experience was a 50 basis point decrease in the discount rate for group long-term disability new claim incurrals which we implemented in the fourth quarter of 2016.

Commissions and the deferral of acquisition costs were higher compared to 2015 due to prior year sales growth and the timing of certain sales-related expenses. The amortization of deferred acquisition costs increased relative to 2015 due to growth in the level of the deferred asset. The other expense ratio was favorable to 2015 due to growth in premium income and a continued focus on expense management and operating efficiencies.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income increased compared to 2014, driven by sales growth and premium rate increases, as well as favorable persistency in the group long-term disability product line. Net investment income declined relative to 2014 due to a decrease in the level of invested assets and a decline in yields. Other income increased slightly relative to 2014.

Benefits experience was favorable compared to 2014 due to lower claim incidence rates and favorable claim recovery experience in our group long-term disability product line, offset partially by the 50 basis point decrease in the discount rate which we implemented during the fourth quarter of 2014 for group long-term disability new claim incurrals.

Commissions and the deferral of acquisition costs were higher relative to 2014 due to sales growth and the corresponding increase in deferrable expenses. The amortization of deferred acquisition costs increased relative to 2014 due to growth in the level of the deferred asset. The growth in premium income during 2015 more than offset the growth in other expenses related to continued investment in the growth of our business, resulting in a decline in the other expense ratio compared to 2014.

Unum US Group Life and Accidental Death and Dismemberment Operating Results

Shown below are financial results and key performance indicators for Unum US group life and accidental death and dismemberment.

(in millions of dollars, except ratios)	Year Ended December 31 2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Group Life	$1,410.0	4.6%	$1,347.4	6.7%	$1,262.3
Accidental Death & Dismemberment	140.3	6.5	131.7	4.6	125.9
Total Premium Income	1,550.3	4.8	1,479.1	6.5	1,388.2
Net Investment Income	113.4	(16.1)	135.1	(0.1)	135.2
Other Income	4.5	114.3	2.1	50.0	1.4
Total	1,668.2	3.2	1,616.3	6.0	1,524.8
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	1,112.6	4.8	1,061.6	8.8	975.8
Commissions	126.8	4.6	121.2	7.0	113.3
Deferral of Acquisition Costs	(35.7)	7.2	(33.3)	6.4	(31.3)
Amortization of Deferred Acquisition Costs	29.2	11.5	26.2	22.4	21.4
Other Expenses	213.5	(1.0)	215.7	5.1	205.2
Total	1,446.4	4.0	1,391.4	8.3	1,284.4
Operating Income	$ 221.8	(1.4)	$ 224.9	(6.4)	$ 240.4
Operating Ratios (% of Premium Income):					
Benefit Ratio	71.8%		71.8%		70.3%
Other Expense Ratio	13.8%		14.6%		14.8%
Operating Income Ratio	14.3%		15.2%		17.3%
Persistency:					
Group Life	90.7%		89.2%		90.8%
Accidental Death & Dismemberment	90.3%		89.8%		91.1%

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Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income increased compared to 2015 due to sales growth and improved persistency. Net investment income was lower compared to 2015 due primarily to a decrease in the level of invested assets.

Benefits experience was consistent with 2015, with favorable benefits experience under group life waiver of premium benefits generally offset by a higher average claim size in accidental death & dismemberment.

Commissions and the deferral of acquisition costs were higher compared to 2015 due to sales growth. The amortization of deferred acquisition costs increased relative to 2015 due to growth in the level of the deferred asset. The other expense ratio was favorable to 2015 due to growth in premium income and a continued focus on expense management.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income increased compared to 2014 primarily due to growth in the in-force block resulting from prior year sales, partially offset by lower persistency. Net investment income was generally consistent with 2014, with an increase in the level of invested assets offset by a decline in yield.

Benefits experience was unfavorable compared to 2014 due to a higher average paid claim size in both group life and accidental death and dismemberment.

Commissions and the deferral of acquisition costs were higher compared to 2014 due to strong sales in the second half of 2014 and a corresponding increase in deferrable commissions which were expensed during the applicable periods of 2015. The amortization of deferred acquisition costs increased compared to 2014 due to growth in the level of the deferred asset. The growth in premium income during 2015 more than offset the growth in other expenses related to continued investment in the growth of our business, resulting in a slight decline in the other expense ratio compared to 2014.

Unum US Supplemental and Voluntary Operating Results

Shown below are financial results and key performance indicators for Unum US supplemental and voluntary product lines.

(in millions of dollars, except ratios)	Year Ended December 31 2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Individual Disability	$ 480.3	0.3%	$ 478.9	2.7%	$ 466.1
Voluntary Benefits	796.5	6.2	749.9	8.1	693.8
Dental and Vision	61.1	—	—	—	—
Total Premium Income	1,337.9	8.9	1,228.8	5.9	1,159.9
Net Investment Income	235.8	0.9	233.7	2.6	227.8
Other Income	17.7	(26.9)	24.2	(18.5)	29.7
Total	1,591.4	7.0	1,486.7	4.9	1,417.4
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	647.9	11.5	581.1	2.7	565.9
Commissions	275.4	2.5	268.8	5.7	254.2
Deferral of Acquisition Costs	(232.0)	0.5	(230.8)	4.3	(221.2)
Amortization of Deferred Acquisition Costs	210.1	(1.1)	212.4	6.0	200.4
Other Expenses	317.3	4.9	302.5	4.9	288.4
Total	1,218.7	7.5	1,134.0	4.3	1,087.7
Operating Income	$ 372.7	5.7	$ 352.7	7.0	$ 329.7
Operating Ratios (% of Premium Income):					
Benefit Ratios:					
Individual Disability	52.9%		51.8%		51.6%
Voluntary Benefits	44.3%		44.4%		46.9%
Dental and Vision	66.6%		—%		—%
Other Expense Ratio	23.7%		24.6%		24.9%
Operating Income Ratio	27.9%		28.7%		28.4%
Persistency:					
Individual Disability	91.1%		90.3%		90.0%
Voluntary Benefits	76.9%		75.9%		77.6%
Dental and Vision	84.6%		—%		—%

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Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income was higher compared to 2015, driven by the addition of the dental and vision product offering as a result of the Starmount acquisition during the third quarter of 2016 as well as growth in the in-force block of voluntary benefits products due to sales and favorable persistency. Premium income for our individual disability product line was generally consistent with 2015, with growth in premium income mostly offset by the impact of a reinsurance agreement we entered into during the fourth quarter of 2016 whereby we ceded 30 percent of the risk for certain blocks of our individual disability business on a non-proportional modified coinsurance basis. Net investment income was slightly higher compared to 2015 due to growth in the level of invested assets, partially offset by a decline in yield on invested assets. Other income decreased relative to 2015 due primarily to the expected decline in surrender fees as our interest sensitive life products mature.

Benefits experience for the individual disability product line was less favorable compared to 2015 due primarily to a higher average claim size and lower claim recoveries. Benefits experience for voluntary benefits was generally consistent with 2015, with favorable experience in our disability and critical illness product lines offset somewhat by less favorable experience in our life product line. The dental and vision product line will typically have a higher benefit ratio than the other product lines reported in our supplemental and voluntary line of business, but the benefits experience since acquisition was consistent with expectations.

Commissions were higher compared to 2015 due primarily to the addition of the dental and vision product line, partially offset by commissions ceded in the individual disability product line related to the fourth quarter of 2016 reinsurance agreement. The deferral of acquisition costs was generally consistent with the prior year. Amortization of deferred acquisition costs declined year over year due to a higher level of policy terminations in 2015 relative to assumptions for certain issue years within certain product lines. Our other expense ratio improved relative to 2015 as we continue our focus on expense management and operating efficiencies.

We had goodwill of $271.1 million at December 31, 2016, none of which is currently believed to be at risk for future impairment. The increase in goodwill during 2016 is attributable to the acquisition of Starmount.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income was higher compared to 2014 due to sales growth, partially offset by a decline in persistency in the voluntary benefits product line. Net investment income was higher relative to 2014 due to growth in the level of invested assets and higher miscellaneous investment income, partially offset by a decrease in yield on invested assets. Other income decreased relative to 2014 due primarily to an expected decline in surrender fees as our interest sensitive products mature.

Benefits experience for the individual disability product line was generally consistent with 2014. Benefits experience for voluntary benefits was favorable compared to 2014 due primarily to improved claim experience in our disability product line and a release of active life reserves in the critical illness product line resulting from a higher level of policy terminations during 2015 relative to 2014.

Commissions and deferral of acquisition costs were higher compared to 2014 due primarily to sales growth. The amortization of deferred acquisition costs was higher compared to 2014 due primarily to growth in the level of the deferred asset and the impact of a higher level of policy terminations in 2015 relative to assumptions for certain issue years within certain product lines. The growth in premium income during 2015 more than offset the growth in other expenses related to continued investment in the growth of our business, resulting in a slight decline in the other expense ratio compared to 2014.

Sales

(in millions of dollars)	Year Ended December 31 2016	% Change	2015	% Change	2014
Sales by Product					
Group Disability and Group Life and AD&D					
Group Long-term Disability	$217.8	(9.1)%	$239.7	7.2%	$223.6
Group Short-term Disability	114.6	(4.3)	119.7	0.8	118.8
Group Life and AD&D	270.1	8.0	250.1	(5.6)	264.8
Subtotal	602.5	(1.1)	609.5	0.4	607.2
Supplemental and Voluntary					
Individual Disability	65.1	(3.6)	67.5	18.8	56.8
Voluntary Benefits	261.7	(0.3)	262.6	10.3	238.1
Dental and Vision	14.5	—	—	—	—
Subtotal	341.3	3.4	330.1	11.9	294.9
Total Sales	$943.8	0.4	$939.6	4.2	$902.1
Sales by Market Sector					
Group Disability and Group Life and AD&D					
Core Market (< 2,000 employees)	$378.1	(6.7)%	$405.4	0.9%	$401.7
Large Case Market	224.4	9.9	204.1	(0.7)	205.5
Subtotal	602.5	(1.1)	609.5	0.4	607.2
Supplemental and Voluntary	341.3	3.4	330.1	11.9	294.9
Total Sales	$943.8	0.4	$939.6	4.2	$902.1

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Group disability sales decreased compared to 2015 due to lower sales to new customers in both the core market segment, which we define as employee groups with fewer than 2,000 employees, and in the large case market segment, partially offset by an increase in sales to existing customers. Sales for group life and accidental death and dismemberment increased compared to 2015, primarily driven by higher sales in the large case market. The sales mix in the group market sector for 2016 was approximately 63 percent core market and 37 percent large case market.

Individual disability sales, which are primarily concentrated in the multi-life market, decreased compared to 2015 due to lower sales to large case customers. Voluntary benefits sales were generally consistent with 2015, with an increase in sales in the core market offset by lower sales to new customers in the large case market. We also reported sales of $14.5 million for the Starmount dental and vision products for the period subsequent to the date of acquisition.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Group disability sales increased compared to 2014 due to higher sales to existing customers in both the core market and in the large case market. Sales for group life and accidental death and dismemberment declined compared to 2014 due to lower sales to new customers, partially offset by higher sales to existing customers in the core market. The sales mix in the group market sector for 2015 was approximately 67 percent core market and 33 percent large case market, generally consistent with the level of 2014.

Individual disability sales increased due primarily to sales to new customers. Sales of voluntary benefits were higher compared to 2014, with increases in both core and large case market sales.

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Segment Outlook

We remain committed to offering consumers a broad set of financial protection benefit products at the worksite. During 2017, we will focus on client expansion, consumer engagement, and collaborative partnerships, all underpinned by strong risk management. We intend to broaden our client relationships and build additional partnerships to open new digital channels. We also aim to enhance the customer experience through new product offerings such as dental and vision, investing in processes with a focus on quality and simplification, and the utilization of technology to enhance enrollment, underwriting, and online claims. We believe our active client management and differentiated integrated customer experience across our product lines will continue to enable us to grow our market.

We anticipate solid operating income growth in 2017, with disciplined sales and premium growth, consistent risk management, and improving operational efficiency. We believe further improvement in our premium and sales growth rates will occur if overall economic conditions continue to improve and/or industry pricing levels increase to better align with our view of adequate premium rates. We believe future profit margin improvement is achievable, driven primarily by our continued product mix shift, expense efficiencies, and consistent operating effectiveness. Underpinning our strategy is our continued commitment to risk management discipline, talent development, and our core values.

The low interest rate environment continues to place pressure on our profit margins by impacting net investment income yields as well discount rates on our insurance liabilities. Our net investment income may be impacted, either favorably or unfavorably, by fluctuations in miscellaneous investment income. As part of our continued pricing discipline and our reserving strategy, we continuously monitor emerging interest rate experience and adjust our pricing and reserve discount rates, as appropriate. We believe the group long-term disability reserve discount rate reduction during 2016 provides a strong balance sheet position for 2017. We currently expect our group disability benefit ratio for full year 2017 to be generally consistent with the level of 2016, although unfavorable economic conditions could lead to a higher rate of claim incidence or lower levels of claim recoveries. We continuously monitor key indicators to assess our risks and attempt to adjust our business plans accordingly.

Unum UK Segment

The Unum UK segment includes insurance for group long-term disability, group life, and supplemental lines of business which include dental, individual disability, and critical illness products. Unum UK's products are sold primarily in the United Kingdom through field sales personnel and independent brokers and consultants.

Operating Results

Shown below are financial results and key performance indicators for the Unum UK segment.

	Year Ended December 31				
(in millions of dollars, except ratios)	2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Group Long-term Disability	$355.2	(10.6)%	$397.4	(5.1)%	$418.9
Group Life	105.7	(13.0)	121.5	(8.8)	133.2
Supplemental	68.4	19.4	57.3	4.0	55.1
Total Premium Income	529.3	(8.1)	576.2	(5.1)	607.2
Net Investment Income	118.1	(5.4)	124.9	(17.3)	151.0
Other Income	0.2	N.M.	—	—	—
Total	647.6	(7.6)	701.1	(7.5)	758.2
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	367.4	(6.9)	394.8	(8.4)	431.0
Commissions	38.9	(6.9)	41.8	(2.3)	42.8
Deferral of Acquisition Costs	(8.2)	(14.6)	(9.6)	(8.6)	(10.5)
Amortization of Deferred Acquisition Costs	9.7	(14.2)	11.3	(9.6)	12.5
Other Expenses	111.2	(9.0)	122.2	(9.2)	134.6
Total	519.0	(7.4)	560.5	(8.2)	610.4
Operating Income	$128.6	(8.5)	$140.6	(4.9)	$147.8

Foreign Currency Translation

The functional currency of Unum UK is the British pound sterling. Unum UK's premium income, net investment income, claims, and expenses are received or paid in pounds, and we hold pound-denominated assets to support Unum UK's pound-denominated policy reserves and liabilities. We translate Unum UK's pound-denominated financial statement items into dollars for our consolidated financial reporting. We translate income statement items using an average exchange rate for the reporting period, and we translate balance sheet items using the exchange rate at the end of the period. We report unrealized foreign currency translation gains and losses in accumulated other comprehensive income in our consolidated balance sheets.

Fluctuations in the pound to dollar exchange rate have an effect on Unum UK's reported financial results and our consolidated financial results. In periods when the pound strengthens relative to the preceding period, translating pounds into dollars increases current period results relative to the prior period. In periods when the pound weakens, translating pounds into dollars decreases current period results relative to the prior period. The discussion of financial and sales results as follows is based on local currency.

	Year Ended December 31				
(in millions of pounds, except ratios)	2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Group Long-term Disability	£262.0	0.8%	£259.9	2.2%	£254.4
Group Life	78.0	(1.9)	79.5	(1.6)	80.8
Supplemental	50.5	34.7	37.5	12.3	33.4
Total Premium Income	390.5	3.6	376.9	2.3	368.6
Net Investment Income	87.3	7.0	81.6	(10.9)	91.6
Other Income	0.1	N.M.	—	N.M.	0.1
Total	477.9	4.2	458.5	(0.4)	460.3
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	270.9	5.0	258.1	(1.3)	261.4
Commissions	28.9	5.5	27.4	5.4	26.0
Deferral of Acquisition Costs	(6.1)	(3.2)	(6.3)	(1.6)	(6.4)
Amortization of Deferred Acquisition Costs	7.2	(2.7)	7.4	(2.6)	7.6
Other Expenses	82.2	2.9	79.9	(2.4)	81.9
Total	383.1	4.5	366.5	(1.1)	370.5
Operating Income	£ 94.8	3.0	£ 92.0	2.4	£ 89.8
Weighted Average Pound/Dollar Exchange Rate	1.357		1.528		1.646
Operating Ratios (% of Premium Income):					
Benefit Ratio	69.4%		68.5%		70.9%
Other Expense Ratio	21.0%		21.2%		22.2%
Operating Income Ratio	24.3%		24.4%		24.4%
Persistency:					
Group Long-term Disability	89.5%		89.2%		90.1%
Group Life	81.3%		80.0%		76.0%
Supplemental	89.9%		87.7%		86.6%

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income was higher compared to 2015 due primarily to growth in the supplemental product line resulting from the acquisition of the dental product offering in September 2015. Sales growth and favorable persistency in the group long-term disability product line also contributed to the growth in premium income.

Net investment income increased compared to 2015 due primarily to growth in the level of invested assets and higher investment income from inflation index-linked bonds. We invest in inflation index-linked bonds to support the claim reserves associated with certain of our group policies that provide for inflation-linked increases in benefits. The year-over-year increase in net investment income attributable to these index-linked bonds was more than offset by changes in the reserves for future claims payments related to the inflation-linked group long-term disability and group life policies.

Overall benefits experience was unfavorable compared to 2015 due primarily to an increase in the claim incidence rate in our group life product line. Group long-term disability benefits experience was slightly favorable compared to 2015 due primarily to a higher level of net claim settlements and lower claims incidence. Benefits experience for our supplemental line of business was less favorable due to a higher average claim size in our group critical illness product line and the addition of the dental product line, which typically has a higher benefit ratio than other product lines in our supplemental line of business.

Commissions were higher compared to 2015 due primarily to sales growth in 2016. The deferral of acquisition costs and amortization of deferred acquisition costs were generally consistent in 2016 compared to 2015. The other expense ratio was lower relative to 2015 due to our continued focus on expense management.

We had goodwill of £29.4 million, or $36.3 million, at December 31, 2016, none of which is currently believed to be at risk for future impairment.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income was higher compared to 2014 due primarily to growth in our in-force group long-term disability product line resulting from prior year sales growth and stable persistency and in the supplemental product line resulting from the acquisition of the dental product offering.

Net investment income declined compared to 2014 due primarily to lower income from inflation index-linked bonds. The year-over-year decrease in net investment income attributable to these index-linked bonds was largely offset by a more favorable year-over-year change in the reserves for future claims payments related to the inflation-linked group long-term disability and group life policies.

Benefits experience was favorable compared to 2014 due as a result of favorable experience in both the group long-term disability and group life product lines. The favorable group long-term disability benefits experience was due primarily to favorable claim recoveries, partially offset by unfavorable mortality experience. The favorable group life experience was due to a lower claim incidence rate and a lower average claim size.

Commissions were higher compared to 2014 due primarily to sales growth in 2015. The deferral of acquisition costs and amortization of deferred acquisition costs were generally consistent compared to 2014. The other expense ratio decreased in 2015 relative to 2014 due to our focus on expense management.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Sales

(in millions of dollars and pounds)	Year Ended December 31 2016	% Change	2015	% Change	2014
Sales by Product					
Group Long-term Disability	$50.2	(6.0)%	$53.4	(7.0)%	$57.4
Group Life	23.8	(7.4)	25.7	8.0	23.8
Supplemental	10.5	110.0	5.0	28.2	3.9
Total Sales	$84.5	0.5	$84.1	(1.2)	$85.1
Sales by Market Sector					
Group Long-term Disability and Group Life					
Core Market (< 500 employees)	$42.0	(5.2)%	$44.3	4.2%	$42.5
Large Case Market	32.0	(8.0)	34.8	(10.1)	38.7
Subtotal	74.0	(6.4)	79.1	(2.6)	81.2
Supplemental	10.5	110.0	5.0	28.2	3.9
Total Sales	$84.5	0.5	$84.1	(1.2)	$85.1
Sales by Product					
Group Long-term Disability	£37.2	6.3%	£35.0	(0.3)%	£35.1
Group Life	17.8	6.0	16.8	16.7	14.4
Supplemental	7.7	133.3	3.3	37.5	2.4
Total Sales	£62.7	13.8	£55.1	6.2	£51.9
Sales by Market Sector					
Group Long-term Disability and Group Life					
Core Market (< 500 employees)	£31.2	7.6%	£29.0	12.4%	£25.8
Large Case Market	23.8	4.4	22.8	(3.8)	23.7
Subtotal	55.0	6.2	51.8	4.6	49.5
Supplemental	7.7	133.3	3.3	37.5	2.4
Total Sales	£62.7	13.8	£55.1	6.2	£51.9

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Group long-term disability sales increased compared to 2015 due to higher sales to new customers in our core market, or employee groups with fewer than 500 employees, and higher sales to existing customers in our large case market.

Group life sales increased compared to 2015 due to higher sales to existing customers in both the core and large case markets, partially offset by a decline in sales to new customers in our large case market.

Supplemental sales increased compared to 2015 due primarily to the addition of sales related to our dental product offering as well as higher sales in our group critical illness product line.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Sales in group long-term disability were generally consistent compared to 2014. In the group long-term disability core market sales increased in 2015 relative to 2014 due primarily to sales to new customers. Sales in the group long-term disability large case market were lower due to a decline in sales to existing customers partially offset by higher sales to new customers.

Group life sales increased compared to 2014 due to higher sales to new customers in both the core and large case markets, partially offset by a decline in sales to existing customers.

Supplemental sales were higher relative to 2014 due primarily to higher sales in our group critical illness and individual disability product lines.

Segment Outlook

We remain committed to driving growth in the U.K. market, and during 2017 we will continue to build on those capabilities that we believe will generate growth and profitability in our businesses. Expanding our group long-term disability market position remains a significant opportunity and priority. Our key priorities in 2017 include the implementation of price increases across interest sensitive product lines while maintaining solid persistency results, continuing to follow a disciplined approach to new sales activity in the competitive pricing environment. We intend to accelerate growth in non-interest sensitive product lines such as group life, critical illness, and dental. We will expand our distribution and build marketing and digital capabilities which we believe will drive sustainable growth. We are simplifying our processes and operations to deliver efficiencies and maintain service levels. We will remain focused on risk discipline and putting our customers first.

We may see some near-term dampening of growth in Unum UK due to the current disruption and uncertainty in the U.K. economy as a result of the referendum by the U.K. to withdraw from the EU. The magnitude and longevity of potential negative economic impacts on our growth will depend on the agreements reached by the U.K. and EU as a result of exit negotiations and the resulting response of the U.K. marketplace. We anticipate returning to more normal levels of premium growth when economic conditions improve and there are higher levels of employment, increases in corporate payrolls, and expansion of benefit spending.

We expect the lower interest rate environment to continue to have a negative impact on our growth expectations in the near-term, and unfavorable economic conditions may also lead to a higher rate of claim incidence, lower levels of claim recoveries, or lower claim discount rates. As part of our continued pricing discipline and our reserving strategy, we continuously monitor emerging interest rate experience and adjust our pricing and reserve discount rates, as appropriate. We believe the current low levels of inflation in the U.K. may adversely impact our index-linked net investment income, with an expected corresponding reduction in the cost of benefits. There are no indications currently that capital requirements for our U.K. operations will change, but economic conditions may in the near term cause volatility in our solvency ratios. We continuously monitor key indicators to assess our risks and attempt to adjust our business plans accordingly.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Colonial Life Segment

The Colonial Life segment includes insurance for accident, sickness, and disability products, life products, and cancer and critical illness products issued primarily by Colonial Life & Accident Insurance Company and marketed to employees, on both a group and an individual basis, at the workplace through an independent contractor agency sales force and brokers.

Operating Results

Shown below are financial results and key performance indicators for the Colonial Life segment.

	Year Ended December 31				
(in millions of dollars, except ratios)	2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Accident, Sickness, and Disability	$ 830.0	5.2%	$ 789.0	3.8%	$ 759.8
Life	273.8	8.5	252.4	8.9	231.8
Cancer and Critical Illness	313.3	5.4	297.2	5.4	282.1
Total Premium Income	1,417.1	5.9	1,338.6	5.1	1,273.7
Net Investment Income	141.5	(2.7)	145.4	(0.1)	145.5
Other Income	1.2	N.M.	0.1	—	0.1
Total	1,559.8	5.1	1,484.1	4.6	1,419.3
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	726.4	6.4	683.0	3.4	660.6
Commissions	313.6	6.8	293.5	11.9	262.3
Deferral of Acquisition Costs	(270.1)	6.8	(252.8)	14.5	(220.8)
Amortization of Deferred Acquisition Costs	208.1	4.7	198.7	10.3	180.2
Other Expenses	267.6	5.9	252.6	6.1	238.0
Total	1,245.6	6.0	1,175.0	4.9	1,120.3
Operating Income	$ 314.2	1.6	$ 309.1	3.4	$ 299.0
Operating Ratios (% of Premium Income):					
Benefit Ratio	51.3%		51.0%		51.9%
Other Expense Ratio	18.9%		18.9%		18.7%
Operating Income Ratio	22.2%		23.1%		23.5%
Persistency:					
Accident, Sickness, and Disability	75.6%		74.8%		75.5%
Life	85.0%		84.9%		85.2%
Cancer and Critical Illness	82.9%		81.2%		83.5%

N.M. = not a meaningful percentage

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income increased in 2016 relative to 2015 as a result of sales growth and favorable persistency in all lines of business. Net investment income decreased relative to the prior year, due to a decline in yield and lower miscellaneous investment income, partially offset by an increase in the level of invested assets.

Benefits experience was less favorable in 2016 compared to 2015 due to higher claim incidence rates in the life line of business, partially offset by improved claims experience in the accident, sickness, and disability and the cancer and critical illness product lines.

Commissions and the deferral of acquisition costs were higher relative to 2015 due to an increase in deferrable expenses related to sales growth. The amortization of deferred acquisition costs increased compared to the prior year due primarily to growth in the level of the deferred asset. The other expense ratio was consistent with 2015 as the growth rate in expenses was commensurate with our premium growth rate.

We had goodwill of $27.7 million at December 31, 2016 related to the acquisition of Starmount, none of which is currently believed to be at risk for future impairment.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income increased relative to 2014 as a result of sales growth in all lines of business, partially offset by a decline in persistency. Net investment income was generally consistent in 2015 relative to 2014, with an increase in the level of invested assets offset by a decline in yield and lower miscellaneous investment income.

Benefits experience was favorable compared to 2014 due to favorable incurred benefits in the accident, sickness, and disability product line and the release of active life reserves in the cancer and critical illness product lines related to policy terminations.

Commissions and the deferral of acquisition costs were higher relative to 2014 due to an increase in deferrable expenses related to sales growth. The amortization of deferred acquisition costs increased compared to 2014 due primarily to growth in the level of the deferred asset. The other expense ratio was slightly higher compared to 2014 due primarily to continued investment in our business.

Sales

	Year Ended December 31				
(in millions of dollars)	2016	% Change	2015	% Change	2014
Sales by Product					
Accident, Sickness, and Disability	$310.6	12.5%	$276.1	5.9%	$260.7
Life	94.0	9.8	85.6	8.6	78.8
Cancer and Critical Illness	79.0	2.9	76.8	8.8	70.6
Total Sales	$483.6	10.3	$438.5	6.9	$410.1
Sales by Market Sector					
Commercial					
Core Market (< 1,000 employees)	$309.0	6.3%	$290.8	5.5%	$275.6
Large Case Market	59.8	10.3	54.2	1.9	53.2
Subtotal	368.8	6.9	345.0	4.9	328.8
Public Sector	114.8	22.8	93.5	15.0	81.3
Total Sales	$483.6	10.3	$438.5	6.9	$410.1

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

We reported year-over-year sales growth in both new and existing customer account sales for 2016. By market sector, commercial market sales increased due to higher new and existing customer account sales in both the core market, which we define as accounts with fewer than 1,000 employees, and the large case market. The growth in our public sector market for 2016 was primarily attributable to existing customer account sales. The number of new accounts increased 17.3 percent in 2016 compared to 2015, and the average new case size decreased 5.9 percent.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Sales were higher in 2015 compared to 2014 due to growth in new and existing customer account sales. Commercial market sales increased compared to 2014 due to higher new and existing customer account sales in the core market and higher existing customer account sales in the large case market. The growth in our public sector market for 2015 was attributable to new and existing customer account sales. The number of new accounts increased 10.0 percent in 2015 compared to 2014, and the average new case size decreased 7.5 percent.

Segment Outlook

We remain committed to providing employees and their families with simple, modern, and personal benefit solutions. During 2017, we intend to focus on expanding our distribution, introducing new products and services, enhancing the customer experience, and investing in new solutions to further improve productivity. We believe there is significant opportunity for growth in our core market, particularly those employers with fewer than 100 employees. This market is currently underserved, and we believe having a large national distribution system is critical to reaching those markets. We intend to focus on accelerating growth during 2017 through territory expansion, territory growth, and persistency investments. We believe our distribution system, enrollment capabilities, public sector expertise, and ability to serve all market sizes position us well for future growth.

We expect to see continued favorable sales and premium growth trends in 2017. The lower interest rate environment will continue to have an unfavorable impact on our profit margins, and volatility in miscellaneous investment income is likely to continue. We expect our annual benefit ratio for 2017 to be generally consistent with the level of 2016. While we believe our underlying profitability will remain strong, current economic conditions and increasing competition in the voluntary workplace market are seen as external risks to achievement of our business plans. We continuously monitor key indicators to assess our risks and attempt to adjust our business plans accordingly.

Closed Block Segment

The Closed Block segment consists of individual disability, group and individual long-term care, and other insurance products no longer actively marketed. The individual disability line of business in this segment generally consists of policies we sold prior to the mid-1990s and entirely discontinued selling in 2004, other than update features contractually allowable on existing policies. We discontinued offering individual long-term care in 2009 and group long-term care in 2012. Other insurance products include group pension, individual life and corporate-owned life insurance, reinsurance pools and management operations, and other miscellaneous product lines.

Operating Results

Shown below are financial results and key performance indicators for the Closed Block segment.

(in millions of dollars, except ratios)	Year Ended December 31 2016	% Change	2015	% Change	2014
Operating Revenue					
Premium Income					
Individual Disability	$ 521.9	(8.8)%	$ 572.4	(8.4)%	$ 624.8
Long-term Care	643.9	1.6	633.5	0.4	630.9
All Other	4.6	170.6	1.7	88.9	0.9
Total Premium Income	1,170.4	(3.1)	1,207.6	(3.9)	1,256.6
Net Investment Income	1,352.2	2.4	1,320.0	3.0	1,281.5
Other Income	86.0	(3.7)	89.3	(2.7)	91.8
Total	2,608.6	(0.3)	2,616.9	(0.5)	2,629.9
Benefits and Expenses					
Benefits and Change in Reserves for Future Benefits	2,223.7	(0.2)	2,228.3	(24.0)	2,931.1
Commissions	93.8	(5.1)	98.8	(2.7)	101.5
Interest and Debt Expense	6.9	4.5	6.6	(9.6)	7.3
Other Expenses	154.7	(5.7)	164.1	(2.4)	168.2
Total	2,479.1	(0.7)	2,497.8	(22.1)	3,208.1
Income (Loss) Before Income Tax and Net Realized Investment Gains and Losses	129.5	8.7	119.1	120.6	(578.2)
Long-term Care Reserve Increase	—	—	—	—	698.2
Operating Income	$ 129.5	8.7	$ 119.1	(0.8)	$ 120.0
Interest Adjusted Loss Ratios:					
Individual Disability	83.6%		82.8%		83.6%
Long-term Care	91.1%		87.6%		196.6%
Long-term Care Excluding the Reserve Increase	—%		—%		85.9%
Operating Ratios (% of Premium Income):					
Other Expense Ratio	13.2%		13.6%		13.4%
Income (Loss) Ratio	11.1%		9.9%		(46.0)%
Operating Income Ratio	11.1%		9.9%		9.5%
Persistency:					
Individual Disability	90.9%		90.9%		91.3%
Long-term Care	94.8%		95.7%		95.4%

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Premium income for individual disability decreased compared to 2015 due to expected policy terminations and maturities. Premium income for long-term care increased due to rate increases, partially offset by policy terminations. We continue to file requests with various state insurance departments for premium rate increases on certain of our individual and group long-term care policies. The rate increases reflect current interest rates and claim experience, higher expected future claims, longevity, persistency, and other factors related to pricing long-term care coverage. In states for which a rate increase is submitted and approved, we routinely provide customers options for coverage changes or other approaches that might fit their current financial and insurance needs.

Net investment income was higher relative to 2015 due to increased invested asset levels and higher miscellaneous investment income. Other income, which includes the underlying results of certain blocks of individual disability reinsured business and the net investment income of portfolios held by those ceding companies to support the block we have reinsured, was lower compared to 2015 primarily due to lower investment income on those investment portfolios driven by a decrease in the level of invested assets.

Individual disability benefits experience was unfavorable relative to 2015 due to unfavorable mortality experience, lower recoveries, and a reduction in the claim reserve discount rate to recognize the impact on future portfolio yields from the higher than normal level of bond tenders and calls experienced during 2016. Long-term care benefits experience was unfavorable relative to the prior year due to higher submitted claims as well as the unfavorable impact of a large group case moving to an individual policy ported status during 2016.

Interest and debt expense was slightly higher compared to 2015 due to increases in the underlying floating rate for the outstanding debt issued by Northwind Holdings, LLC (Northwind Holdings), partially offset by a lower level of outstanding debt resulting from principal repayments. The other expense ratio was lower than 2015 due to lower litigation expenses and our continued focus on operating effectiveness and expense management.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Premium income for individual disability decreased compared to 2014 due to expected policy terminations and maturities. Premium income for long-term care increased slightly due to rate increases and stable persistency.

Net investment income was higher relative to 2014 due to increased invested asset levels and higher miscellaneous investment income, partially offset by a decrease in yield on invested assets. Other income was lower compared to 2014 primarily due to lower investment income from the investment portfolios held by the ceding companies.

Individual disability benefits experience was favorable relative to 2014 primarily due to favorable mortality. Long-term care benefits experience was favorable relative to the prior year due to the 2014 reserve increase, as previously discussed. Excluding this reserve increase, long-term care benefits experience was unfavorable compared to 2014 due to less favorable development in active life reserves as a result of higher persistency.

Interest and debt expense was lower than 2014 due to principal repayments on the outstanding debt issued by Northwind Holdings. The other expense ratio was generally consistent with 2014.

Segment Outlook

Our strategy for our Closed Block remains substantially unchanged. During 2017, we intend to continue our focus on long-term care premium rate increases and the offer of policyholder options, operational effectiveness, financial analysis, and capital management. Despite continued anticipated premium rate increases in our long-term care business, we expect overall premium income and operating revenue to decline over time as these closed blocks of business wind down. We will likely experience volatility in net investment income due to fluctuations of miscellaneous investment income. We expect the low interest rate environment to continue to place pressure on our earnings and the adequacy of our reserves. We continuously monitor key indicators to assess our risks and attempt to adjust our business plans accordingly.

Profitability of our long-tailed products is affected by claims experience related to mortality and morbidity, investment returns, premium rate increases, and persistency. We believe that the interest adjusted loss ratios for the individual disability and long-term care lines of business will be relatively flat over the long term, but these product lines may continue to experience quarterly volatility, particularly in the near term for our long-term care product lines as our claim block matures. We also believe the implementation of our long-term care rate increases contributed to higher claim submissions and may continue to do so in the near term. Claim resolution rates, which measure the resolution of claims from recovery, deaths, settlements, and benefit expirations, are very sensitive to operational and external factors and can be volatile. Our claim resolution rate assumption used in determining reserves is our expectation of the resolution rate we will experience over the life of the block of business and will vary from actual experience in any one period. It is possible that variability in any of our reserve assumptions, including, but not limited to, interest rates, mortality, morbidity, premium rate increases, benefit change elections, and persistency, could result in a material impact on the adequacy of our reserves, including adjustments to reserves established under loss recognition.

Corporate Segment

The Corporate segment includes investment income on corporate assets not specifically allocated to a line of business, interest expense on corporate debt other than non-recourse debt, and certain other corporate income and expense not allocated to a line of business.

Operating Results

	Year Ended December 31				
(in millions of dollars)	2016	% Change	2015	% Change	2014
Operating Revenue					
Net Investment Income	$ 18.5	(27.7)%	$ 25.6	(27.5)%	$ 35.3
Other Income	4.9	69.0	2.9	(42.0)	5.0
Total	23.4	(17.9)	28.5	(29.3)	40.3
Interest and Other Expenses	170.1	11.0	153.3	(2.9)	157.9
Operating Loss Including Costs Related to Early Retirement of Debt	(146.7)	(17.5)	(124.8)	(6.1)	(117.6)
Costs Related to Early Retirement of Debt	—	—	—	(100.0)	13.2
Operating Loss	$(146.7)	(17.5)	$(124.8)	(19.5)	$(104.4)

Year Ended December 31, 2016 Compared with Year Ended December 31, 2015

Net investment income was lower relative to 2015 due primarily to the decrease in the yield on invested assets and lower miscellaneous investment income.

Interest and other expenses were higher relative to 2015 due primarily to higher levels of outstanding debt and expenses related to the acquisition of Starmount.

Year Ended December 31, 2015 Compared with Year Ended December 31, 2014

Net investment income was lower relative to 2014 due primarily to lower levels of invested assets.

Interest and other expenses decreased relative to 2014 due to $13.2 million of costs incurred in 2014 related to the early retirement of a portion of the debt issued by one of our U.K. subsidiaries. The remaining balance on the debt matured in 2015. Partially offsetting this favorable year-over-year comparison were higher legal expenses incurred during 2015.

Segment Outlook

We expect the low interest rate environment to continue to place pressure on investment income. We are currently holding capital at our insurance subsidiaries and holding companies at levels that exceed our long-term requirements, and we expect to continue to generate excess capital on an annual basis through our statutory earnings. While we intend to maintain our disciplined approach to risk management, we believe we are well positioned with substantial flexibility to preserve our capital strength and at the same time explore opportunities to deploy the excess capital that is generated.

Investments

Overview

Our investment portfolio is well diversified by type of investment and industry sector. We have established an investment strategy that we believe will provide for adequate cash flows from operations and allow us to hold our securities through periods where significant decreases in fair value occur. We believe our emphasis on risk management in our investment portfolio, including credit and interest rate management, has positioned us well and generally reduced the volatility in our results.

We have a formal investment policy that includes overall quality and diversification objectives and establishes limits by asset class, investment rating, and single issuer. The majority of our investments are in investment-grade publicly traded securities. This ensures the desired liquidity and preserves the capital value of our portfolios, although due to the long-term nature of our insurance liabilities we are also able to invest in less liquid investments to obtain superior returns within the limits of our investment policy. Our asset mix guidelines and limits are established by us, reviewed by the risk and finance committee of Unum Group's board of directors, and approved by the boards of directors of our insurance subsidiaries. We review our policies and guidelines annually, or more frequently if deemed necessary, and recommend adjustments as appropriate.

See "Critical Accounting Estimates" contained herein for further discussion of our valuation of investments.

Fixed Maturity Securities

The fair values and associated unrealized gains and losses of our fixed maturity securities portfolio, by industry classification, are as follows:

Fixed Maturity Securities — By Industry Classification

As of December 31, 2016

(in millions of dollars)

Classification	Fair Value	Net Unrealized Gain	Fair Value of Fixed Maturity Securities with Gross Unrealized Loss	Gross Unrealized Loss	Fair Value of Fixed Maturity Securities with Gross Unrealized Gain	Gross Unrealized Gain
Basic Industry	$ 2,580.5	$ 191.1	$ 488.3	$ 23.8	$ 2,092.2	$ 214.9
Capital Goods	4,218.6	426.5	527.2	16.8	3,691.4	443.3
Communications	3,032.1	359.4	397.7	24.1	2,634.4	383.5
Consumer Cyclical	1,413.4	132.2	128.9	2.8	1,284.5	135.0
Consumer Non-Cyclical	6,510.8	606.1	1,222.1	53.6	5,288.7	659.7
Energy	5,016.4	482.4	696.7	35.0	4,319.7	517.4
Financial Institutions	3,269.9	251.7	412.1	12.6	2,857.8	264.3
Mortgage/Asset-Backed	2,230.4	125.5	514.0	9.2	1,716.4	134.7
Sovereigns	914.7	199.9	—	—	914.7	199.9
Technology	1,579.3	78.5	324.6	7.8	1,254.7	86.3
Transportation	1,888.1	235.1	216.8	7.7	1,671.3	242.8
U.S. Government Agencies and Municipalities	3,540.4	469.6	265.0	8.3	3,275.4	477.9
Public Utilities	8,022.7	1,106.6	275.8	16.9	7,746.9	1,123.5
Total	$44,217.3	$4,664.6	$5,469.2	$218.6	$38,748.1	$4,883.2

The following two tables show the length of time our investment-grade and below-investment-grade fixed maturity securities had been in a gross unrealized loss position as of December 31, 2016 and at the end of the prior four quarters. The relationships of the current fair value to amortized cost are not necessarily indicative of the fair value to amortized cost relationships for the securities throughout the entire time that the securities have been in an unrealized loss position nor are they necessarily indicative of the relationships after December 31, 2016. The decrease in the unrealized loss on fixed maturity securities during 2016 was due primarily to a decrease in credit spreads, partially offset by an increase in U.S. Treasury rates which occurred during the period.

Unrealized Loss on Investment-Grade Fixed Maturity Securities
Length of Time in Unrealized Loss Position

	2016				2015
(in millions of dollars)	December 31	September 30	June 30	March 31	December 31
Fair Value < 100% >= 70% of Amortized Cost					
<= 90 days	$119.2	$ 2.2	$ 0.8	$ 15.7	$ 73.2
> 90 <= 180 days	12.5	0.3	4.8	34.0	56.0
> 180 <= 270 days	0.1	4.0	0.4	26.3	157.9
> 270 days <= 1 year	8.9	—	2.7	68.9	24.9
> 1 year <= 2 years	9.5	8.1	25.5	24.2	17.3
> 2 years <= 3 years	0.5	—	—	3.3	9.7
> 3 years	1.1	1.1	2.2	2.5	2.9
Sub-total	151.8	15.7	36.4	174.9	341.9
Fair Value < 70% >= 40% of Amortized Cost					
> 90 <= 180 days	—	—	—	—	3.8
> 180 <= 270 days	—	—	—	—	11.1
> 1 year <= 2 years	—	—	—	—	3.6
Sub-total	—	—	—	—	18.5
Total	$151.8	$15.7	$36.4	$174.9	$360.4

Unrealized Loss on Below-Investment-Grade Fixed Maturity Securities
Length of Time in Unrealized Loss Position

	2016				2015
(in millions of dollars)	December 31	September 30	June 30	March 31	December 31
Fair Value < 100% >= 70% of Amortized Cost					
<= 90 days	$ 8.2	$ 0.4	$ 2.4	$ 3.7	$ 10.2
> 90 <= 180 days	1.4	0.3	3.5	4.5	50.8
> 180 <= 270 days	0.5	1.6	1.9	41.5	51.1
> 270 days <= 1 year	4.1	0.9	14.5	43.0	1.3
> 1 year <= 2 years	19.7	30.6	71.3	38.7	34.5
> 2 years <= 3 years	16.0	11.4	—	11.3	15.0
> 3 years	16.9	10.2	19.9	10.5	5.3
Sub-total	66.8	55.4	113.5	153.2	168.2
Fair Value < 70% >= 40% of Amortized Cost					
> 90 <= 180 days	—	—	—	—	9.6
> 180 <= 270 days	—	—	—	22.8	21.6
> 270 days <= 1 year	—	—	8.9	33.9	4.1
> 1 year <= 2 years	—	6.4	—	26.0	21.8
> 2 years <= 3 years	—	—	—	13.5	7.6
> 3 years	—	6.6	6.8	0.2	5.0
Sub-total	—	13.0	15.7	96.4	69.7
Fair Value <= 40% of Amortized Cost					
> 180 <= 270 days	—	—	—	—	20.4
> 1 year <= 2 years	—	—	—	—	10.3
> 2 years <= 3 years	—	—	—	—	13.3
Sub-total	—	—	—	—	44.0
Total	$66.8	$68.4	$129.2	$249.6	$281.9

At December 31, 2016, we held one below-investment grade fixed maturity security with a gross unrealized loss greater than $10.0 million. The security was in the communications sector and had a fair value of $60.5 million and a gross unrealized loss of $10.9 million.

During 2016, we recognized an other-than-temporary impairment loss of $11.6 million on fixed maturity securities issued by a large U.S.-based energy company. At the time of the impairment loss, the company had a high debt-to-equity ratio, and its projected liquidity had decreased significantly as a result of the declines in oil prices and the likelihood that prices may stay at depressed levels for an extended period of time. The company has assets it can sell, but liquidation may be difficult in the current environment. Additionally, the lower oil prices resulted in the company's banks significantly reducing the availability on the company's revolving line of credit. At the time of the impairment loss, these securities had been in an unrealized loss position for a period of greater than one year but less than two years.

During 2015, we recognized an other-than-temporary impairment loss of $10.3 million on fixed maturity securities issued by a large U.S.-based coal company. At the time of the impairment loss, the company had a high debt-to-equity ratio, and its projected liquidity had decreased significantly as a result of the declines in coal prices and the likelihood that prices may stay at depressed levels for an extended period of time. The company has assets it can sell, but liquidation may be difficult in the current environment. At the time of the impairment loss, these securities had been in an unrealized loss position for a period of greater than one year but less than two years.

During 2014, we recognized an other-than-temporary impairment loss of $13.5 million on fixed maturity securities issued by a U.S.-based oil and natural gas exploration and production company. At the time of the impairment loss, the company had a high debt-to-equity ratio, and its projected liquidity had decreased significantly as a result of the declines in oil and natural gas prices. At the time of the impairment loss, these securities had been in an unrealized loss position for a period of greater than 90 days but less than 180 days.

We had no individual realized investment losses of $10.0 million or greater from the sale of fixed maturity securities during 2016, 2015, or 2014.

At December 31, 2016, we had minimal exposure to investments for which the payment of interest and principal is guaranteed under a financial guaranty insurance policy, and the securities in aggregate have a weighted average credit rating of investment-grade absent the guaranty insurance policy. At December 31, 2016, we held $83.2 million fair value ($71.9 million amortized cost) of perpetual debentures, or "hybrid" securities, that generally have no fixed maturity date. Interest on these securities due on any payment date may be deferred by the issuer. The interest payments are generally deferrable only to the extent that the issuer has suspended dividends or other distributions or payments to any of its shareholders or any other perpetual debt instrument.

At December 31, 2016, our mortgage/asset-backed securities had an average life of 5.14 years, effective duration of 5.66 years, and a weighted average credit rating of Aaa. The mortgage/asset-backed securities are valued on a monthly basis using valuations supplied by the brokerage firms that are dealers in these securities as well as independent pricing services. One of the risks involved in investing in mortgage/asset-backed securities is the uncertainty of the timing of cash flows from the underlying loans due to prepayment of principal with the possibility of reinvesting the funds in a lower interest rate environment. We use models which incorporate economic variables and possible future interest rate scenarios to predict future prepayment rates. The timing of prepayment cash flows may also cause volatility in our recognition of investment income. We recognize investment income on these securities using a constant effective yield based on projected prepayments of the underlying loans and the estimated economic life of the securities. Actual prepayment experience is reviewed periodically, and effective yields are recalculated when differences arise between prepayments originally projected and the actual prepayments received and currently projected. The effective yield is recalculated on a retrospective basis, and the adjustment is reflected in net investment income.

We have no exposure to subprime mortgages, "Alt-A" loans, or collateralized debt obligations in our investment portfolios. We have not invested in mortgage-backed derivatives, such as interest-only, principal-only, or residuals, where market values can be highly volatile relative to changes in interest rates. The credit quality of our mortgage-backed securities portfolio has not been negatively impacted by the issues in the market concerning subprime mortgage loans. The change in value of our mortgage-backed securities portfolio has moved in line with that of prime agency-backed mortgage-backed securities.

As of December 31, 2016, the amortized cost and fair value of our below-investment-grade fixed maturity securities was $3,346.1 million and $3,398.0 million, respectively. Below-investment-grade securities are inherently more risky than investment-grade securities since the risk of default by the issuer, by definition and as exhibited by bond rating, is higher. Also, the secondary market for certain below-investment-grade issues can be highly illiquid. Additional downgrades may occur, but we do not anticipate any liquidity problems resulting from our investments in below-investment-grade securities, nor do we expect these investments to adversely affect our ability to hold our other investments to maturity.

Fixed Maturity Securities — Foreign Exposure

Our investments in issuers in foreign countries are chosen for specific portfolio management purposes, including asset and liability management and portfolio diversification across geographic lines and sectors to minimize non-market risks. In our approach to investing in fixed maturity securities, specific investments within approved countries and industry sectors are evaluated for their market position and specific strengths and potential weaknesses. For each security, we consider the political, legal, and financial environment of the sovereign entity in which an issuer is domiciled and operates. The country of domicile is based on consideration of the issuer's headquarters, in addition to location of the assets and the country in which the majority of sales and earnings are derived. We do not have exposure to foreign currency risk, as the cash flows from these investments are either denominated in currencies or hedged into currencies to match the related liabilities. We continually evaluate our foreign investment risk exposure.

Our monitoring is also heightened for investments in certain other countries due to our concerns over the current economic and political environments, and we believe these investments are more vulnerable to potential credit problems. At December 31, 2016, we had minimal exposure in those countries and had no direct exposure to financial institutions of those countries.

Fixed Maturity Securities — Energy Sector

Our investment portfolio has exposure to companies whose businesses are negatively impacted by lower oil and natural gas prices. These include exploration and production companies, refineries, midstream and pipeline companies, and oilfield service businesses. The sharp drop in the price of oil, which began in 2014 and accelerated in 2015, put pressure on the earnings and cash flows of some of these businesses. During the latter part of 2016, the price of oil recovered from the low levels experienced in 2015 and early 2016, which alleviated some of the pressure on these businesses. The degree to which a business is affected by oil and gas prices can vary greatly depending on, among other things, its energy subsector, exposure to different types of oil and gas within a subsector, geographic locations, cost structure flexibility, capital structure, and hedging policies. At December 31, 2016, approximately one-third of our exposure to the energy sector was represented by the independent and oilfield subsectors where demand for products is highly correlated with oil and gas prices. The remaining two-thirds of our exposure to the energy sector was represented by the midstream, integrated, refining, and other energy subsectors, which tend to be more correlated to product volume sales as opposed to the commodity price. The majority of our energy sector holdings are investment-grade fixed maturity securities. During 2016, we recognized other-than-temporary impairment losses totaling $30.3 million on fixed maturity securities issued by energy sector companies, including the $11.6 million loss as previously discussed. At December 31, 2016, the fair value of investment-grade fixed maturity securities in the energy sector was $4,376.1 million, with a gross unrealized gain of $505.8 million and a gross unrealized loss of $15.5 million. The fair value of below-investment-grade fixed maturity securities in the energy sector was $640.3 million, with a gross unrealized gain of $11.6 million and a gross unrealized loss of $19.5 million. The following table shows additional information related to our holdings in the energy sector.

Fixed Maturity Securities — Energy Sector

At December 31, 2016

(in millions of dollars) Classification by Subsector	Fair Value	Net Unrealized Gain	Fair Value of Fixed Maturity Securities with Gross Unrealized Loss	Gross Unrealized Loss	Fair Value of Fixed Maturity Securities with Gross Unrealized Gain	Gross Unrealized Gain
Midstream	$2,217.0	$151.3	$337.2	$11.6	$1,879.8	$162.9
Oil and Gas — Independent	1,517.6	166.4	203.5	12.9	1,314.1	179.3
Oil Field	144.0	4.3	62.1	6.7	81.9	11.0
Oil — Integrated	828.6	136.5	22.5	1.3	806.1	137.8
Oil — Refining	258.1	22.8	61.9	2.0	196.2	24.8
Other Energy	51.1	1.1	9.5	0.5	41.6	1.6
Total	$5,016.4	$482.4	$696.7	$35.0	$4,319.7	$517.4

Mortgage Loans

Our mortgage loan portfolio was $2,038.9 million and $1,883.6 million on an amortized cost basis at December 31, 2016 and 2015, respectively. Our mortgage loan portfolio is comprised entirely of commercial mortgage loans. We believe our mortgage loan portfolio is well diversified geographically and among property types. The incidence of problem mortgage loans and foreclosure activity continues to be low. Due to conservative underwriting, we expect the level of problem loans to remain low relative to the industry. We held no impaired mortgage loans at December 31, 2016 or 2015.

Derivative Financial Instruments

We use derivative financial instruments primarily to manage reinvestment, duration, foreign currency, and credit risks. Historically, we have utilized current and forward interest rate swaps and options on forward interest rate swaps and U.S. Treasury rates, current and forward currency swaps, forward treasury locks, currency forward contracts, forward contracts on specific fixed income securities, and credit default swaps. Our current credit exposure on derivatives, which is limited to the value of those contracts in a net gain position, including accrued interest receivable less collateral held, was $0.8 million at December 31, 2016. We held $26.1 million of cash collateral from our counterparties at December 31, 2016. The carrying value of fixed maturity securities posted as collateral to our counterparties was $35.2 million at December 31, 2016. We had no cash collateral posted to our counterparties at December 31, 2016. We believe that our credit risk is mitigated by our use of multiple counterparties, all of which have an investment-grade credit rating, and by our use of cross-collateralization agreements.

Other

Our exposure to non-current investments, defined as foreclosed real estate and invested assets which are delinquent as to interest and/or principal payments, totaled $41.9 million and $36.8 million on a fair value basis at December 31, 2016 and 2015, respectively.

See Notes 3 and 4 of the "Notes to Consolidated Financial Statements" contained herein for further discussion of our investments and our derivative financial instruments.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Liquidity and Capital Resources

Overview

Our liquidity requirements are met primarily by cash flows provided from operations, principally in our insurance subsidiaries. Premium and investment income, as well as maturities and sales of invested assets, provide the primary sources of cash. Debt and/or securities offerings provide additional sources of liquidity. Cash is applied to the payment of policy benefits, costs of acquiring new business (principally commissions), operating expenses, and taxes, as well as purchases of new investments.

We have established an investment strategy that we believe will provide for adequate cash flows from operations. We attempt to match our asset cash flows and durations with expected liability cash flows and durations to meet the funding requirements of our business. However, deterioration in the credit market may delay our ability to sell our positions in certain of our fixed maturity securities in a timely manner and adversely impact the price we receive for such securities, which may negatively impact our cash flows. Furthermore, if we experience defaults on securities held in the investment portfolios of our insurance subsidiaries, this will negatively impact statutory capital, which could reduce our insurance subsidiaries' capacity to pay dividends to our holding companies. A reduction in dividends to our holding companies could force us to seek external financing to avoid impairing our ability to pay dividends to our stockholders or meet our debt and other payment obligations.

Our policy benefits are primarily in the form of claim payments, and we have minimal exposure to the policy withdrawal risk associated with deposit products such as individual life policies or annuities. A decrease in demand for our insurance products or an increase in the incidence of new claims or the duration of existing claims could negatively impact our cash flows from operations. However, our historical pattern of benefits paid to revenues is consistent, even during cycles of economic downturns, which serves to minimize liquidity risk.

The liquidity requirements of the holding company Unum Group are met by fixed maturity securities, short-term investments and cash, and dividends from our subsidiaries, primarily our insurance subsidiaries, as well as the issuance of common stock, debt, or other capital securities and borrowings from our credit facilities, as needed. As of December 31, 2016, Unum Group and our intermediate holding companies held fixed maturity securities, short-term investments, and cash of $594 million, excluding amounts committed for subsidiary contributions. The balance was comprised primarily of commercial paper, fixed maturity securities with a current average maturity of 5.4 years, and various money-market funds. Our sources of liquidity and cash flow support the general corporate needs of the holding company, including its common stock dividends, interest and debt service, acquisitions, and ongoing investments in our businesses.

Approximately $110 million of the amount held at December 31, 2016 was held in certain of our U.K. subsidiaries. No significant restrictions exist on our ability to use or access these funds. We currently have no intent, nor do we foresee a need, to repatriate funds from our foreign subsidiaries in the U.K. We believe we hold domestic resources sufficient to fund our liquidity requirements for the next 12 months. If we repatriate additional funds from our subsidiaries in the U.K., the amounts repatriated would be subject to repatriation tax effects which generally equal the difference in the U.S. tax rate and the U.K. tax rate.

As part of our capital deployment strategy, we have in recent years repurchased shares of Unum Group's common stock, as authorized by our board of directors. Our current share repurchase program was approved by our board of directors in May 2016 and authorizes the repurchase of up to $750 million of common stock through November 2017, with the pace of repurchase activity to depend upon various factors such as the level of available cash, alternative uses for cash, and our stock price. This new authorization replaced the previous authorization of $750 million that was scheduled to expire in November 2016. During 2016, we repurchased 11.9 million shares at a cost of approximately $403 million. The dollar value of shares remaining under the current repurchase program was approximately $496 million at December 31, 2016. See Note 10 of the "Notes to Consolidated Financial Statements" contained herein.

Cash Available from Subsidiaries

Unum Group and certain of its intermediate holding company subsidiaries depend on payments from subsidiaries to pay dividends to stockholders, to pay debt obligations, and/or to pay expenses. These payments by our insurance and non-insurance subsidiaries may take the form of dividends, operating and investment management fees, and/or interest payments on loans from the parent to a subsidiary.

Restrictions under applicable state insurance laws limit the amount of dividends that can be paid to a parent company from its insurance subsidiaries in any 12-month period without prior approval by regulatory authorities. For life insurance companies domiciled in the U.S., that limitation generally equals, depending on the state of domicile, either ten percent of an insurer's statutory surplus with respect to policyholders as of the preceding year end or the statutory net gain from operations, excluding realized investment gains and losses, of the preceding year. The payment of dividends to a parent company from a life insurance subsidiary is generally further limited to the amount of unassigned funds.

Certain of our domestic insurance subsidiaries cede blocks of business to Northwind Reinsurance Company (Northwind Re) and Fairwind Insurance Company (Fairwind), both of which are affiliated captive reinsurance subsidiaries domiciled in the United States with Unum Group as the ultimate parent. The ability of Northwind Re and Fairwind to pay dividends to their respective parent companies will depend on their satisfaction of applicable regulatory requirements and on the performance of the business reinsured by Northwind Re and Fairwind.

The ability of Unum Group and certain of its intermediate holding company subsidiaries to continue to receive dividends from their insurance subsidiaries also depends on additional factors such as RBC ratios and capital adequacy and/or solvency requirements, funding growth objectives at an affiliate level, and maintaining appropriate capital adequacy ratios to support desired ratings. At December 31, 2016, the capital adequacy and individual RBC ratios for each of our U.S. insurance subsidiaries, including our captive reinsurers, is above the range that would require state regulatory action.

Unum Group and/or certain of its intermediate holding company subsidiaries may also receive dividends from our U.K. subsidiaries, the payment of which may be subject to applicable insurance company regulations and capital guidance in the U.K. As of January 1, 2016, Solvency II, an EU directive that prescribes new capital requirements and risk management standards for the European insurance industry, replaced the previous capital requirements for Unum Limited. Our European holding company is also subject to the Solvency II requirements relevant to insurance holding companies, while its subsidiaries (the Unum European Economic Area (EEA) Group), which includes Unum Limited, are subject to group supervision under Solvency II. The Unum EEA Group received approval from the U.K. Prudential Regulatory Authority to use its own internal model for calculating regulatory capital and also received approval for certain associated regulatory permissions including transitional relief as the Solvency II capital regime is implemented. As a result there was no material change to capital requirements or to solvency ratios for the Unum EEA Group. There are currently no indications that capital requirements for the Unum EEA Group will change as a result of the U.K. referendum to withdraw from the EU, but economic conditions may in the near term cause volatility in our solvency ratios.

The payment of dividends to the parent company from our subsidiaries also requires the approval of the individual subsidiary's board of directors.

The amount available during 2016 for the payment of ordinary dividends from Unum Group's traditional U.S. insurance subsidiaries, which excludes our captive reinsurers, was approximately $664 million, of which $605.2 million was declared and paid. The amount available during 2016 from Unum Limited was approximately £148 million, as assessed under the requirements prior to Solvency II, of which £70.0 million was declared and paid to one of our U.K. holding companies. During 2016, Northwind Re paid dividends of $92.7 million to Northwind Holdings. Fairwind paid no dividends during 2016.

During 2017, we intend to maintain a level of capital in our U.S. and U.K. insurance subsidiaries above the applicable capital adequacy requirements and minimum solvency margins. Although we may not utilize the entire amount of available dividends, based on applicable restrictions under current law, approximately $859 million is available, without prior approval by regulatory authorities, during 2017 for the payment of dividends from Unum Group's traditional U.S. insurance subsidiaries, which excludes our captive reinsurers. Following the changes established by Solvency II regarding dividend capacity, approximately £271 million is available for the payment of dividends from Unum Limited during 2017, subject to regulatory approval.

Insurance regulatory restrictions do not limit the amount of dividends available for distribution from non-insurance subsidiaries except where the non-insurance subsidiaries are held directly or indirectly by an insurance subsidiary and only indirectly by Unum Group.

Funding for Employee Benefit Plans

We made contributions of $64.8 million and £3.6 million to our U.S. and U.K. defined contribution plans, respectively, in 2016 and expect to make contributions of approximately $75 million and £4 million during 2017. We made no contributions to our U.S. qualified defined benefit pension plan or our U.K. defined benefit pension plan during 2016, nor do we expect to make any contributions to either plan during 2017. We have met all minimum pension funding requirements set forth by the Employee Retirement Income Security Act. We have estimated our future funding requirements under the Pension Protection Act of 2006 and under applicable U.K. law and do not believe that any future funding requirements will cause a material adverse effect on our liquidity. See Note 9 of the "Notes to Consolidated Financial Statements" contained herein for further discussion of our employee benefit plans.

Debt

There are no significant financial covenants associated with any of our outstanding debt obligations. We continually monitor our debt covenants to ensure we remain in compliance. We have not observed any current trends that would cause a breach of any debt covenants.

Maturities, Purchases, and Retirement of Debt

Our $350.0 million 7.125% senior unsecured notes matured during 2016, and the remaining balance of our $151.9 million 6.85% senior secured notes matured during 2015. In 2014, we purchased and retired $145.0 million principal of the 6.85% notes, including a make-whole amount of $13.2 million, for a total cost of $158.2 million.

Northwind Holdings made principal payments on its floating rate, senior secured notes of $64.0 million, $74.4 million, and $41.6 million in 2016, 2015, and 2014, respectively.

Issuance of Debt

In 2016, we issued a total of $600.0 million aggregate principal amount of senior notes: (i) $350.0 million aggregate principal amount of senior notes due in 2021 with an annual coupon rate of 3.00%, and (ii) $250.0 million aggregate principal amount of senior notes due in 2042 with an annual coupon rate of 5.75%, pursuant to a reopening of the $250.0 million aggregate principal amount outstanding of our 5.75% senior notes due 2042 issued in 2012. Both issuances are callable at or above par and rank equally in right of payment with all of our other unsecured and unsubordinated debt. A portion of the net proceeds of the offering were used for repayment of the debt which matured in 2016. The remainder of the proceeds are expected to be used for general corporate purposes.

In 2015, we issued $275.0 million of unsecured senior notes. These notes, due 2025, bear interest at a fixed rate of 3.875% and are payable semi-annually. The notes are callable at or above par and rank equally in right of payment with all of our other unsecured and unsubordinated debt.

In 2014, we issued $350.0 million of unsecured senior notes. These notes, due 2024, bear interest at a fixed rate of 4.00% and are payable semi-annually. The notes are callable at or above par and rank equally in right of payment with all of our other unsecured and unsubordinated debt.

Credit Facility

In 2016, we amended the terms of our five-year, $400 million unsecured revolving credit facility, which was previously set to expire in 2018, to extend through March 2021. Under the terms of the agreement, we may request that the credit facility be increased up to $600 million. Borrowings under the credit facility are for general corporate uses and are subject to financial covenants, negative covenants, and events of default that are customary. The credit facility provides for borrowing at an interest rate based either on the prime rate or LIBOR. In addition, the credit facility provides for the issuance of letters of credit subject to certain terms and limitations. At December 31, 2016, letters of credit totaling $2.1 million had been issued from the credit facility, but there was no borrowed amount outstanding. Our credit facility's financial covenants contain provisions regarding our leverage and net worth. We do not anticipate any violation of these covenants. However, if economic conditions worsen and we incur unexpected losses, we could violate certain of the financial covenants imposed by the credit facility and lose access to available funds or lines of credit through the facility. While maintenance of the unsecured, revolving credit facility provides a valuable source of contingent liquidity, we believe operating cash flows are sufficient to support our short-term liquidity needs.

Shelf Registration

We filed a shelf registration with the Securities and Exchange Commission in 2014 to issue various types of securities, including common stock, preferred stock, debt securities, depository shares, stock purchase contracts, units and warrants, or preferred securities of wholly-owned finance trusts. The shelf registration enables us to raise funds from the offering of any securities covered by the shelf registration as well as any combination thereof, subject to market conditions and our capital needs.

See Note 8 of the "Notes to Consolidated Financial Statements" contained herein for additional information on our debt.

Commitments

The following table summarizes contractual obligations and our reinsurance recoverable by period as of December 31, 2016:

(in millions of dollars)	Total	In 1 Year or Less	After 1 Year up to 3 Years	After 3 Years up to 5 Years	After 5 Years
Payments Due					
Long-term Debt	$ 4,929.7	$ 152.3	$ 484.2	$ 993.1	$ 3,300.1
Policyholder Liabilities	43,488.1	4,625.5	6,956.5	5,388.7	26,517.4
Pension and OPEB	655.9	20.5	40.4	39.5	555.5
Payables for Collateral on Investments	410.5	410.5	—	—	—
Miscellaneous Liabilities	804.1	624.2	32.6	10.7	136.6
Operating Leases	189.6	50.8	48.3	31.9	58.6
Purchase Obligations	327.9	322.4	5.0	0.5	—
Total	$50,805.8	$6,206.2	$7,567.0	$6,464.4	$30,568.2
Receipts Due					
Reinsurance Recoverable	$ 7,846.6	$ 328.4	$ 611.6	$ 618.7	$ 6,287.9

Long-term debt includes contractual principal and interest payments and therefore exceeds the amount shown in the consolidated balance sheets.

Policyholder liability maturities and the related reinsurance recoverable represent the projected payout of the current in-force policyholder liabilities and the expected cash inflows from reinsurers for liabilities ceded and therefore incorporate uncertainties as to the timing and amount of claim payments. We utilize extensive liability modeling to project future cash flows from the in-force business. The primary assumptions used to project future cash flows are claim incidence rates for mortality and morbidity, claim resolution rates, persistency rates, and interest rates. These cash flows are discounted to determine the current value of the projected claim payments. The timing and amount of payments on policyholder liabilities may vary significantly from the projections above.

Pensions and OPEB commitments represent the expected benefit payments related to our U.S. non-qualified defined benefit pension and other postretirement benefit plans as it is our policy to pay those benefits, as incurred, from our general assets. Our funding policy for our U.S. qualified defined benefit and our U.K. defined benefit pension plans is to make only contributions necessary to meet minimum funding requirements under U.S. and U.K. legislation. We do not currently expect to make any contributions to either of these plans and therefore have not included amounts in the preceding chart. However, to the extent contributions are required, we will make the necessary contributions to these plans.

Payables for collateral on investments include obligations to return unrestricted cash collateral to our securities lending and derivative counterparties and obligations to repay advances from regional Federal Home Loan Banks (FHLBs). The amounts presented in the preceding chart include contractual interest payments and therefore exceed what is reported in the consolidated balance sheets.

Miscellaneous liabilities include commissions due and accrued, deferred compensation liabilities, contingent considerations, state premium taxes payable, amounts due to reinsurance companies, legally binding commitments to fund investments, and various other liabilities that represent contractual obligations. Obligations where the timing of the payment is uncertain are included in the one year or less category.

See "Critical Accounting Estimates" and Notes 3, 4, 6, 8, 9, 13, and 14 of the "Notes to Consolidated Financial Statements" contained herein for additional information on our various commitments and obligations.

Off-Balance Sheet Arrangements

Operating leases include noncancelable obligations on certain office space, equipment, and software. Purchase obligations include commitments of $314.0 million to fund certain of our investments. These are included in the preceding table based on the expiration date of the commitments. The funds are due upon satisfaction of contractual notice from appropriate external parties and may or may not be funded. Also included are obligations with outside parties for computer data processing services, software maintenance agreements, and consulting services. The aggregate obligation remaining under these agreements was $13.8 million at December 31, 2016.

As part of our regular investing strategy, we receive collateral from unaffiliated third parties through transactions which include both securities lending and also short-term agreements to purchase securities with the agreement to resell them at a later specified date. For both types of transactions, we require that a minimum of 102 percent of the fair value of the securities loaned or securities purchased under repurchase agreements be maintained as collateral. Generally, cash is received as collateral under these agreements. In the event that securities are received as collateral, we are not permitted to sell or re-post them. We also post our fixed maturity securities as collateral to unaffiliated third parties through transactions including both securities lending and also short-term agreements to sell securities with the agreement to repurchase them at a later specified date. See "Transfers of Financial Assets" as follows for further discussion.

To help limit the credit exposure of derivatives, we enter into master netting agreements with our counterparties whereby contracts in a gain position can be offset against contracts in a loss position. We also typically enter into bilateral, cross-collateralization agreements with our counterparties to help limit the credit exposure of the derivatives. These agreements require the counterparty in a loss position to submit acceptable collateral with the other counterparty in the event the net loss position meets or exceeds an agreed upon amount. Our current credit exposure on derivatives, which is limited to the value of those contracts in a net gain position, including accrued interest receivable less collateral held, was $0.8 million at December 31, 2016. We held cash collateral from our counterparties of $26.1 million at December 31, 2016 and had posted fixed maturity securities with a carrying value of $35.2 million as collateral to our counterparties.

See Notes 3, 4, and 14 of the "Notes to Consolidated Financial Statements" contained herein for additional information.

Transfers of Financial Assets

Our investment policy permits us to lend fixed maturity securities to unaffiliated financial institutions in short-term securities lending agreements, which increases our investment income with minimal risk. We account for all of our securities lending agreements and repurchase agreements as secured borrowings. We had $29.9 million of securities lending agreements outstanding which were collateralized by cash at December 31, 2016 and were reported as payables for collateral on investments in our consolidated balance sheets. The cash received as collateral was reinvested in short-term investments. The average balance during the year ended December 31, 2016 was $53.8 million, and the maximum amount outstanding at any month end was $73.9 million. In addition, at December 31, 2016, we had $155.3 million of off-balance sheet securities lending agreements which were collateralized by securities that we were neither permitted to sell nor control. The average balance of these off-balance sheet transactions during the year ended December 31, 2016 was $170.5 million, and the maximum amount outstanding at any month end was $197.7 million.

We had no repurchase agreements outstanding at December 31, 2016, nor did we utilize any repurchase agreements during 2016. Our use of repurchase agreements and securities lending agreements can fluctuate during any given period and will depend on our liquidity position, the availability of long-term investments that meet our purchasing criteria, and our general business needs.

Certain of our U.S. insurance subsidiaries are members of regional Federal Home Loan Banks (FHLB). As of December 31, 2016, we owned $31.6 million of FHLB common stock and had obtained $350.0 million in advances from the regional FHLBs for the purpose of purchasing fixed maturity securities.

See Note 3 of the "Notes to Consolidated Financial Statements" contained herein for additional information.

Consolidated Cash Flows

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Net Cash Provided by Operating Activities	$1,116.1	$1,292.1	$1,223.6
Net Cash Used by Investing Activities	(710.0)	(713.0)	(886.6)
Net Cash Used by Financing Activities	(418.6)	(568.7)	(328.6)
Net Change in Cash and Bank Deposits	$ (12.5)	$ 10.4	$ 8.4

Operating Cash Flows

Operating cash flows are primarily attributable to the receipt of premium and investment income, offset by payments of claims, commissions, expenses, and income taxes. Premium income growth is dependent not only on new sales, but on policy renewals and growth of existing business, renewal price increases, and persistency. Investment income growth is dependent on the growth in the underlying assets supporting our insurance reserves and capital and on the earned yield. The level of commissions and operating expenses is attributable to the level of sales and the first year acquisition expenses associated with new business as well as the maintenance of existing business. The level of paid claims is affected partially by the growth and aging of the block of business and also by the general economy, as previously discussed in the operating results by segment.

The variance in the change in insurance reserves and liabilities to reconcile net income to net cash provided by operating activities as reported in our consolidated statements of cash flows for 2014 was due primarily to the 2014 reserve increase for our long-term care line of business.

Investing Cash Flows

Investing cash inflows consist primarily of the proceeds from the sales and maturities of investments. Investing cash outflows consist primarily of payments for purchases of investments. Our investment strategy is to match the cash flows and durations of our assets with the cash flows and durations of our liabilities to meet the funding requirements of our business. When market opportunities arise we may sell selected securities and reinvest the proceeds to improve the yield and credit quality of our portfolio. We may at times also sell selected securities and reinvest the proceeds to improve the duration matching of our assets and liabilities and/or re-balance our portfolio. As a result, sales before maturity may vary from period to period. The sale and purchase of short-term investments is influenced by proceeds received from issuance of debt, our securities lending program, and by the amount of cash which is at times held in short-term investments to facilitate the availability of cash to fund the purchase of appropriate long-term investments, repay maturing debt, and/or to fund our capital deployment program. Our cash flows for 2015 include the proceeds received from our FHLB funding advances and the subsequent deployment of those funds to purchase fixed maturity securities. Our cash flows for 2016 and 2015 include cash outflows, net of cash acquired, of $129.2 million and $54.3 million related to our purchases of Starmount and National Dental, respectively.

See Notes 3 and 13 of the "Notes to Consolidated Financial Statements" contained herein for further information.

Financing Cash Flows

Financing cash flows consist primarily of borrowings and repayments of debt, issuance or repurchase of common stock, and dividends paid to stockholders.

During 2016, we repaid $350.0 million principal upon maturity of our 7.125% notes. During 2015, we repaid $151.9 million principal upon maturity of our 6.85% notes. During 2014, we retired $145.0 million principal of the 6.85% notes, including a make-whole amount of $13.2 million, for a total cash outflow of $158.2 million. During 2016, 2015, and 2014 we made principal payments of $64.0 million, $74.4 million, and $41.6 million, respectively, on our senior secured non-recourse notes issued by Northwind Holdings.

During 2016, we issued $350.0 million of 3.00% unsecured senior notes due in 2021 and $250.0 million of 5.75% unsecured senior notes due in 2042 and received total proceeds of $609.1 million, excluding the associated debt issuance costs and discounts. During 2015, we issued $275.0 million of 3.875% unsecured senior notes due in 2025 and received proceeds of $271.4 million, excluding the associated debt issuance costs and discounts. During 2014, we issued $350.0 million of 4.00% unsecured senior notes due in 2024 and received proceeds of $347.2 million, excluding the associated debt issuance costs and discounts.

Cash used to repurchase shares of Unum Group's common stock during 2016, 2015, and 2014 was $405.2 million, $417.9 million, and $306.0 million, respectively. During 2016, 2015, and 2014 we paid dividends of $182.6 million, $174.2 million, and $159.4 million, respectively, to holders of Unum Group's common stock.

See "Debt" and Notes 8 and 10 of the "Notes to the Consolidated Financial Statements" contained herein for further information.

Ratings

AM Best, Fitch, Moody's, and S&P are among the third parties that assign issuer credit ratings to Unum Group and financial strength ratings to our insurance subsidiaries. We compete based in part on the financial strength ratings provided by rating agencies. A downgrade of our financial strength ratings can be expected to adversely affect us and could potentially, among other things, adversely affect our relationships with distributors of our products and services and retention of our sales force, negatively impact persistency and new sales, particularly large case group sales and individual sales, and generally adversely affect our ability to compete. A downgrade in the issuer credit rating assigned to Unum Group can be expected to adversely affect our cost of capital or our ability to raise additional capital.

The table below reflects the outlook as well as the issuer credit ratings for Unum Group and the financial strength ratings for each of our traditional insurance subsidiaries as of the date of this filing.

	AM Best	Fitch	Moody's	S&P
Outlook	Stable	Stable	Stable	Stable
Issuer Credit Ratings	bbb	BBB	Baa2	BBB
Financial Strength Ratings				
Provident Life and Accident Insurance Company	A	A	A2	A
Provident Life and Casualty Insurance Company	A	A	NR	NR
Unum Life Insurance Company of America	A	A	A2	A
First Unum Life Insurance Company	A	A	A2	A
Colonial Life & Accident Insurance Company	A	A	A2	A
The Paul Revere Life Insurance Company	A	A	A2	A
Starmount Life Insurance Company	A-	NR	NR	NR
Unum Insurance Company	B++	A	A2	NR
Unum Limited	NR	NR	NR	A-

NR = not rated

We maintain an ongoing dialogue with the four rating agencies that evaluate us in order to inform them of progress we are making regarding our strategic objectives and financial plans as well as other pertinent issues. A significant component of our communications involves our annual review meeting with each of the four agencies. We hold other meetings throughout the year regarding our business, including, but not limited to, quarterly updates.

AM Best, Fitch, and S&P affirmed their ratings for our domestic insurance subsidiaries and issuer credit rating for Unum Group during 2016. Moody's affirmed its ratings during 2015. On August 5, 2016, AM Best upgraded its rating of Starmount Life Insurance Company to A– from the previous rating of B++, reflecting that company's favorable overall operating performance in recent periods, as well as the increased financial flexibility and potential operational efficiencies resulting from Unum Group's acquisition of Starmount. There have been no other changes in any of the rating agencies' outlook statements or ratings during 2016 or in 2017 prior to the date of this filing.

Agency ratings are not directed toward the holders of our securities and are not recommendations to buy, sell, or hold our securities. Each rating is subject to revision or withdrawal at any time by the assigning rating organization, and each rating should be regarded as an independent assessment, not conditional on any other rating. Given the dynamic nature of the ratings process, changes by these or other rating agencies may or may not occur in the near-term. Based on our ongoing dialogue with the rating agencies concerning our insurance risk profile, our financial flexibility, our operating performance, and the quality of our investment portfolio, we do not expect any negative actions from any of the four rating agencies related to either Unum Group's current issuer credit ratings or the financial strength ratings of our insurance subsidiaries. However, in the event that we are unable to meet the rating agency specific guideline values to maintain our current ratings, including but not limited to maintenance of our capital management metrics at the threshold values stated and maintenance of our financial flexibility and operational consistency, we could be placed on a negative credit watch, with a potential for a downgrade to both our issuer credit ratings and our financial strength ratings.

See "Ratings" contained in Item 1 and "Risk Factors" contained in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, for further discussion.

Quantitative and Qualitative Disclosures About Market Risk

We are subject to various market risk exposures, including interest rate risk and foreign exchange rate risk. The following discussion regarding our risk management activities includes forward-looking statements that involve risk and uncertainties. Estimates of future performance and economic conditions are reflected assuming certain changes in market rates and prices were to occur (sensitivity analysis). Caution should be used in evaluating our overall market risk from the information presented below, as actual results may differ. See "Risk Factors" contained in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, and "Investments" and Notes 2, 3 and 4 of the "Notes to Consolidated Financial Statements" contained herein for further discussion of the qualitative aspects of market risk, including derivative financial instrument activity.

Interest Rate Risk

Our exposure to interest rate changes results from our holdings of financial instruments such as fixed rate investments, derivatives, and interest sensitive liabilities. Fixed rate investments include fixed maturity securities, mortgage loans, policy loans, and short-term investments. Fixed maturity securities include U.S. and foreign government bonds, securities issued by government agencies, public utility bonds, corporate bonds, mortgage-backed securities, and redeemable preferred stock, all of which are subject to risk resulting from interest rate fluctuations. Certain of our financial instruments, fixed maturity securities and derivatives, are carried at fair value in our consolidated balance sheets. The fair value of these financial instruments may be adversely affected by changes in interest rates. A rise in interest rates may decrease the net unrealized gain related to these financial instruments, but may improve our ability to earn higher rates of return on new purchases of fixed maturity securities. Conversely, a decline in interest rates may increase the net unrealized gain, but new securities may be purchased at lower rates of return. Although changes in fair value of fixed maturity securities and derivatives due to changes in interest rates may impact amounts reported in our consolidated balance sheets, these changes will not cause an economic gain or loss unless we sell investments, terminate derivative positions, determine that an investment is other than temporarily impaired, or determine that a derivative instrument is no longer an effective hedge.

Other fixed rate investments, such as mortgage loans and policy loans, are carried at amortized cost and unpaid balances, respectively, rather than fair value in our consolidated balance sheets. These investments may have fair values substantially higher or lower than the carrying values reflected in our balance sheets. A change in interest rates could impact our financial position if we sold our mortgage loan investments at times of low market value. A change in interest rates would not impact our financial position at repayment of policy loans, as ultimately the cash surrender values or death benefits would be reduced for the carrying value of any outstanding policy loans. Carrying amounts for short-term investments approximate fair value, and we believe we have minimal interest rate risk exposure from these investments.

We believe that the risk of being forced to liquidate investments or terminate derivative positions is minimal, primarily due to the level of capital at our insurance subsidiaries, the level of cash and marketable securities at our holding companies, and our investment strategy which we believe provides for adequate cash flows to meet the funding requirements of our business. We may in certain circumstances, however, need to sell investments due to changes in regulatory or capital requirements, changes in tax laws, rating agency decisions, and/or unexpected changes in liquidity needs.

Although our policy benefits are primarily in the form of claim payments and we therefore have minimal exposure to the policy withdrawal risk associated with deposit products such as individual life policies or annuities, the fair values of liabilities under all insurance contracts are taken into consideration in our overall management of interest rate risk, which minimizes exposure to changing interest rates through the matching of investment cash flows with amounts due under insurance contracts. Changes in interest rates and individuals' behavior affect the amount and timing of asset and liability cash flows. We actively manage our asset and liability cash flow match and our asset and liability duration match to limit interest rate risk. Due to the long duration of our long-term care product, the timing and/or amount of our investment cash flows may not match those of our maturing liabilities. We model and test asset and liability portfolios to improve interest rate risk management and net yields. Testing the asset and liability portfolios under various interest rate and economic scenarios enables us to choose what we believe to be the most appropriate investment strategy, as well as to limit the risk of disadvantageous outcomes. We use this analysis in determining hedging strategies and utilizing derivative financial instruments. We use current and forward interest rate swaps, options on forward interest rate swaps, and forward treasury locks to hedge interest rate risks and to match asset durations and cash flows with corresponding liabilities.

Debt is not carried at fair value in our consolidated balance sheets. If we modify or replace existing debt instruments at current market rates, we may incur a gain or loss on the transaction. We believe our debt-related risk to changes in interest rates is relatively minimal. In the near term, we expect that our need for external financing is small, but changes in our business could increase our need.

We measure our financial instruments' market risk related to changes in interest rates using a sensitivity analysis. This analysis estimates potential changes in fair values as of December 31, 2016 and 2015 based on a hypothetical immediate increase of 100 basis points in interest rates from year-end levels. The selection of a 100 basis point immediate parallel change in interest rates should not be construed as our prediction of future market events, but only as an illustration of the potential effect of such an event.

The hypothetical potential changes in fair value of our financial instruments at December 31, 2016 and 2015 are shown as follows:

	December 31, 2016			
	Notional		Hypothetical	
(in millions of dollars)	Amount of Derivatives	Fair Value	FV + 100 BP	Change in FV
Assets				
Fixed Maturity Securities [1]		$44,217.3	$40,646.2	$(3,571.1)
Mortgage Loans		2,122.2	2,004.8	(117.4)
Policy Loans, Net of Reinsurance Ceded		358.1	331.5	(26.6)
Liabilities				
Unrealized Adjustment to Reserves, Net of Reinsurance Ceded and Deferred Acquisition Costs [2]		$ (3,970.8)	$ (1,898.3)	$ 2,072.5
Long-term Debt		(3,175.8)	(2,985.8)	190.0
Derivatives [1]				
Swaps	$1,042.0	$ (20.0)	$ (43.0)	$ (23.0)
Forwards	10.0	(0.1)	0.3	0.4
Embedded Derivative in Modified Coinsurance Arrangement		(46.7)	(51.3)	(4.6)

	December 31, 2015			
	Notional		Hypothetical	
(in millions of dollars)	Amount of Derivatives	Fair Value	FV + 100 BP	Change in FV
Assets				
Fixed Maturity Securities [1]		$43,354.4	$39,917.3	$(3,437.1)
Mortgage Loans		2,013.9	1,914.1	(99.8)
Policy Loans, Net of Reinsurance Ceded		347.9	321.5	(26.4)
Liabilities				
Unrealized Adjustment to Reserves, Net of Reinsurance Ceded and Deferred Acquisition Costs [2]		$ (3,344.6)	$ (1,038.5)	$ 2,306.1
Short-term Debt		(366.2)	(363.6)	2.6
Long-term Debt		(2,645.9)	(2,472.4)	173.5
Derivatives [1]				
Swaps	$1,470.3	$ (0.4)	$ (7.2)	$ (6.8)
Embedded Derivative in Modified Coinsurance Arrangement		(87.6)	(88.1)	(0.5)

(1) These financial instruments are carried at fair value in our consolidated balance sheets. Changes in fair value resulting from changes in interest rates may affect the fair value at which the item is reported in our consolidated balance sheets. The corresponding offsetting change is reported in other comprehensive income or loss, net of deferred taxes, except for changes in the fair value of derivatives accounted for as fair value hedges or derivatives not designated as hedging instruments, the offset of which is reported as a component of net realized investment gain or loss.

(2) The adjustment to reserves and deferred acquisition costs for unrealized investment gains and losses reflects the adjustments to policyholder liabilities and deferred acquisition costs that would be necessary if the unrealized investment gains and losses related to the fixed maturity securities and derivatives had been realized. Changes in this adjustment are also reported as a component of other comprehensive income or loss, net of deferred taxes.

Quantitative and Qualitative Disclosures About Market Risk

The effect of a change in interest rates on asset prices was determined using a duration implied methodology for corporate bonds and government and government agency securities whereby the duration of each security was used to estimate the change in price for the security assuming an increase of 100 basis points in interest rates. The effect of a change in interest rates on the mortgage-backed securities was estimated using a mortgage analytic system which takes into account the impact of changing prepayment speeds resulting from a 100 basis point increase in interest rates on the change in price of the mortgage-backed securities. These hypothetical prices were compared to the actual prices for the period to compute the overall change in market value. The changes in the fair values shown in the chart above for all other items were determined using discounted cash flow analyses. Because we actively manage our investments and liabilities, actual changes could be less than those estimated above.

We remain in an environment of low interest rates, which continues to place pressure on our profit margins as we invest cash flows to support our businesses. We estimate that we will have approximately $2.7 billion of investable cash flows in 2017. Assuming interest rates and credit spreads remain constant throughout 2018 at the January 2017 market levels, our net investment income would decrease by approximately $0.5 million in 2017 and $4.8 million in 2018 as a result of the investment of cash flows at levels below our current expectations. This interest rate scenario does not give consideration to the effect of other factors which could impact these results, such as changes in the bond market and changes in hedging strategies and positions, nor does it consider the potential change to our discount rate reserve assumptions and any mitigating factors such as pricing adjustments. In addition, a continued low or declining interest rate environment may also result in an increase in the net periodic benefit costs for our pension plans, but we do not believe it would materially affect net income in 2017 or 2018.

Foreign Currency Risk

The functional currency of our U.K. operations is the British pound sterling. We are exposed to foreign currency risk arising from fluctuations in the British pound sterling to U.S. dollar exchange rates primarily as they relate to the translation of the financial results of our U.K. operations. Fluctuations in the pound to dollar exchange rate have an effect on our reported financial results. We do not hedge against the possible impact of this risk. Because we do not actually convert pounds into dollars except for a limited number of transactions, we view foreign currency translation as a financial reporting issue and not a reflection of operations or profitability in our U.K. operations.

Assuming the pound to dollar exchange rate decreased 10 percent from the December 31, 2016 and 2015 levels, stockholders' equity as reported in U.S. dollars would have been lower by approximately $90 million and $100 million, respectively. Assuming the pound to dollar average exchange rate decreased 10 percent from the actual average exchange rates for 2016 and 2015, before-tax operating income, as reported in U.S. dollars, would have decreased approximately $13 million and $15 million, respectively.

Dividends paid by Unum Limited are generally held at our U.K. finance subsidiary or our U.K. holding company. If these funds are repatriated to our U.S. holding company, we would at that time be subject to foreign currency risk as the value of the dividend, when converted into U.S. dollars, would be dependent upon the foreign exchange rate at the time of conversion.

We are also exposed to foreign currency risk related to certain foreign investment securities denominated in local currencies. We use foreign currency interest rate swaps to hedge or minimize the foreign exchange risk associated with these instruments.

See "Risk Factors" contained in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, and "Consolidated Operating Results" and "Unum UK Segment" contained herein for further information concerning foreign currency translation.

Risk Management

Effectively taking and managing risks is essential to the success of our Company. To facilitate this effort, we have a formal Enterprise Risk Management (ERM) program, with a framework comprising the following key components:

- Risk culture and governance
- Risk appetite policy
- Risk identification and prioritization
- Risk and capital modeling
- Risk management activities
- Risk reporting

Our ERM framework is the ongoing system of people, processes, and tools across our Company under which we intend to function consistently and collectively to identify and assess risks and opportunities, to manage all material risks within our risk appetite, and to contribute to strategic decision making. With the goal of maximizing shareholder value, the primary objectives of our ERM framework are to support Unum Group in meeting its operational and financial objectives, maintaining liquidity, optimizing capital, and protecting franchise value.

Risk Culture and Governance

We employ a decentralized risk management model under which risk-based decisions are made daily on a local level. To achieve long-term success, we believe risk management must be the responsibility of all employees. The individual and collective decisions of our employees play a key role in successfully managing our overall risk profile. We strive for a culture of integrity, commitment, and accountability and we believe these values allow our employees to feel comfortable identifying issues as well as taking ownership for addressing potential problems.

Our culture is reinforced by our system of risk governance. We employ a multi-layered risk control system. Our three lines of defense model is depicted below.

1st Line: Own and Manage	2nd Line: Oversee	3rd Line: Independent Assurance
Business processes and procedures employed throughout the Company through which management assumes and monitors significant risks	Management committees chartered with oversight of activities within the 1st and 2nd lines of defense, mitigation of substantial exposures, and management of emerging risks	Independent review of ERM framework and risk mitigation

Business units are primarily responsible for managing their principal risks. Our risk committees and other management committees serve risk and control functions responsible for providing risk oversight, or the second line of risk control. Our internal audit team provides periodic independent reviews and assurance activities serving as our third line of risk control.

Quantitative and Qualitative Disclosures About Market Risk

In addition, our board has an active role, as a whole and through its committees, in overseeing management of our risks. The board is responsible for managing strategic risk and regularly reviews information regarding our capital, liquidity, and operations, as well as the risks associated with each. The risk and finance committee of the board is responsible for oversight of our risk management process, including financial risk, operational risk, and any other risk not specifically assigned to another board committee. It also is responsible for oversight of risks associated with investments, capital and financing plans and activities, and related financial matters, including matters pertaining to our Closed Block segment. The audit committee of the board is responsible for oversight of risks relating to financial reporting risk and certain operational risks. The human capital committee of the board is responsible for oversight of risks relating to our compensation plans and programs. The regulatory compliance committee of the board is responsible for oversight of risks related to regulatory, compliance, policy, and legal matters, both current and emerging, and whether of a local, state, federal, or international nature. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire board is regularly informed through committee reports about such risks in addition to the risk information it receives directly.

Our executive risk management committee is responsible for overseeing our enterprise-wide risk management program. The chief risk officer, who is a member of the executive risk management committee, has primary responsibility for our ERM program and is supported by corporate risk committees and by the risk committees of our operating segments.

Operating segment risk committees for Unum US, Unum UK, Colonial Life, and Closed Block are responsible for oversight of risks specific to their businesses. These committees are responsible for identifying, measuring, reporting, and managing insurance and operational risks within their respective areas, consistent with enterprise risk management guidance. Corporate risk committees and other management committees oversee the operational, global technology services, investment, and capital management risks on a corporate level.

Risk Appetite Policy

Our risk appetite policy describes the types of risks we are willing to take, as well as the amount of enterprise risk exposure we deem acceptable in pursuit of our goals, with an objective of clearly defining boundaries for our risk-taking activities.

The starting point of our philosophy and approach to our ERM strategy is our corporate strategy. In contrast to many multi-line peer companies, we do not offer retirement savings, traditional medical benefits, or property and casualty insurance. Our corporate strategy is focused on providing group, individual, and voluntary benefits, either as stand-alone products or combined with other coverages, that create comprehensive benefits solutions for employers. We have market leadership positions in the product lines we offer and believe this combination of focused expertise and experience is a competitive advantage and forms the foundation of our approach to risk management.

We believe our sound and consistent business practices, strong internal compliance program, and comprehensive risk management strategy enable us to operate efficiently and to identify and address potential areas of risk in our business. We take and manage risks to achieve our business and strategic objectives, and our risk appetite statement sets boundaries for risk-taking activities that link earnings, capital, and operational processes, as well as summarizes our most material risk limits and controls. We monitor our risk profile against our established risk tolerance and limits. Risks falling outside our risk tolerance and limits are reported to the applicable governance group, where decisions are made pertaining to acceptance of the risk or implementation of remediation plans or corrective actions as deemed appropriate by that governance group.

Risk Identification and Prioritization

Risk identification and prioritization is an ongoing process, whereby we identify and assess our risk positions and exposures, including notable risk events. Additionally, we identify emerging risks and analyze how material future risks might affect us. Knowing the potential risks we face allows us to monitor and manage their potential effects including adjusting our strategies as appropriate and holding capital levels which provide financial flexibility. Risk and other management committees have primary responsibility for identifying and prioritizing risks within their respective areas.

We face a wide range of risks, and our continued success depends on our ability to identify and appropriately manage our risk exposures. For additional information on certain risks that may adversely affect our business, operating results, or financial condition see "Cautionary Statement Regarding Forward-Looking Statements" contained herein and "Risk Factors" contained in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

Risk and Capital Modeling

We assess material risks, including how they affect us and how individual risks interrelate, to provide valuable information to management in order that they may effectively manage our risks. We use qualitative and quantitative approaches to assess existing and emerging risks and to develop mitigating strategies to limit our exposure to both.

We utilize stress testing and scenario analysis for risk management and to shape our business, financial, and strategic planning activities. Both are key components of our risk appetite policy and play an important role in monitoring, assessing, managing, and mitigating our primary risk exposures.

In particular, stress testing of our capital and liquidity management strategies enables us to identify areas of high exposure, assess mitigating actions, develop contingency plans, and guide decisions around our target capital and liquidity levels. For example, we periodically perform stress tests on certain categories of assets or liabilities to support development of capital and liquidity risk contingency plans. These tests help ensure that we have a buffer to support our operations in uncertain times and financial flexibility to respond to market opportunities. Stress testing is also central to reserve adequacy testing, cash flow testing, and asset and liability management.

In addition, we aim to constantly improve our capital modeling techniques and methodologies that are used to determine a level of capital that is commensurate with our risk profile and to ensure compliance with evolving regulatory and rating agency requirements. Our capital modeling reflects appropriate aggregation of risks and diversification benefits resulting from our mix of products and business units.

Our internal capital modeling and allocation aids us in making significant business decisions including strategic planning, capital management, risk limit determination, reinsurance purchases, hedging activities, asset allocation, pricing, and corporate development.

Risk Management Activities

We accept and manage strategic, credit, and insurance risks in accordance with our corporate strategy, investment policy, and annual business plans. The following fundamental principles are embedded in our risk management efforts across our Company.

- We believe in the benefits of specialization and a focused business strategy. We seek profitable risk-taking in areas where we have established risk management skills and capabilities.
- We seek to manage our exposure to insurance risk through a combination of prudent underwriting with effective risk selection, maintaining pricing discipline, sound reserving practices, claims operational effectiveness, and selective use of reinsurance. Detailed underwriting guidelines and claim policies are tools used to manage our insurance risk exposure. We also monitor exposures against internally prescribed limits, and we diversify to reduce potential concentration risk and volatility.
- We maintain a detailed set of investment policies and guidelines, including fundamental credit analysis, that are used to manage our credit risk exposure and diversify our risks across asset classes and issuers.
- Finally, we foster a culture that embeds our corporate values and our code of conduct in our daily operations and preserves our reputation with customers and other key stakeholders. We monitor a composite set of operational risk metrics that measure operating effectiveness from the customer perspective.

Risk Reporting

Regular internal and external risk reporting is an integral part of our ERM framework. Internally, ERM reports are a standard part of our quarterly senior management and board meetings. The reports summarize our existing and emerging risk exposures, as well as report against the tolerances and limits defined by our risk appetite policy.

Externally, we are subject to a number of regulatory and rating agency risk examinations, and risk reports are often included. Annually, we file our Own Risk and Solvency Assessment (ORSA) summary report with the applicable insurance regulators for our U.S. insurance subsidiaries. This report provides strong evidence of the strengths of our ERM framework, measurement approaches, key assumptions utilized in assessing our risks, and prospective solvency assessments under both normal and stressed conditions. See “Regulation” contained in Item 1 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, for additional information regarding the ORSA.

Consolidated Balance Sheets

(in millions of dollars)	December 31 2016	2015 As Adjusted
Assets		
Investments		
Fixed Maturity Securities — at fair value (amortized cost: $39,552.7; $39,658.7)	$44,217.3	$43,354.4
Mortgage Loans	2,038.9	1,883.6
Policy Loans	3,463.2	3,395.4
Other Long-term Investments	631.5	583.0
Short-term Investments	780.0	807.3
Total Investments	51,130.9	50,023.7
Other Assets		
Cash and Bank Deposits	100.4	112.9
Accounts and Premiums Receivable	1,610.8	1,598.4
Reinsurance Recoverable	4,858.9	4,725.1
Accrued Investment Income	693.3	702.8
Deferred Acquisition Costs	2,094.2	2,008.5
Goodwill	335.1	230.9
Property and Equipment	500.6	523.9
Other Assets	617.3	637.4
Total Assets	$61,941.5	$60,563.6

See notes to consolidated financial statements.

(in millions of dollars)	December 31 2016	2015 As Adjusted
Liabilities and Stockholders' Equity		
Liabilities		
Policy and Contract Benefits	$ 1,507.9	$ 1,484.6
Reserves for Future Policy and Contract Benefits	44,245.9	43,540.6
Unearned Premiums	363.7	384.2
Other Policyholders' Funds	1,623.8	1,674.6
Income Tax Payable	20.6	6.0
Deferred Income Tax	130.3	91.8
Short-term Debt	—	352.0
Long-term Debt	2,999.4	2,449.4
Payables for Collateral on Investments	406.0	415.4
Other Liabilities	1,675.9	1,501.1
Total Liabilities	52,973.5	51,899.7
Commitments and Contingent Liabilities — Note 14		
Stockholders' Equity		
Common Stock, $0.10 par		
Authorized: 725,000,000 shares		
Issued: 303,552,934 and 302,702,811 shares	30.4	30.3
Additional Paid-in Capital	2,272.8	2,247.2
Accumulated Other Comprehensive Income (Loss)	(51.0)	16.1
Retained Earnings	8,744.0	7,995.2
Treasury Stock — at cost: 73,729,992 and 61,785,466 shares	(2,028.2)	(1,624.9)
Total Stockholders' Equity	8,968.0	8,663.9
Total Liabilities and Stockholders' Equity	$61,941.5	$60,563.6

See notes to consolidated financial statements.

Consolidated Statements of Income

(in millions of dollars, except share data)	Year Ended December 31 2016	2015	2014
Revenue			
Premium Income	$ 8,357.7	$ 8,082.4	$ 7,797.2
Net Investment Income	2,459.0	2,481.2	2,492.2
Realized Investment Gain (Loss)			
Other-Than-Temporary Impairment Loss on Fixed Maturity Securities	(30.5)	(32.4)	(13.5)
Other Net Realized Investment Gain (Loss)	54.7	(11.4)	29.6
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1
Other Income	205.6	211.5	219.0
Total Revenue	11,046.5	10,731.3	10,524.5
Benefits and Expenses			
Benefits and Change in Reserves for Future Benefits	6,941.8	6,782.8	7,310.8
Commissions	1,026.7	996.3	935.3
Interest and Debt Expense	166.0	152.8	167.5
Deferral of Acquisition Costs	(592.4)	(569.7)	(524.0)
Amortization of Deferred Acquisition Costs	493.0	482.3	440.8
Compensation Expense	832.1	835.1	820.9
Other Expenses	831.6	813.4	831.2
Total Benefits and Expenses	9,698.8	9,493.0	9,982.5
Income Before Income Tax	1,347.7	1,238.3	542.0
Income Tax			
Current	385.7	342.1	135.5
Deferred	30.6	29.1	4.4
Total Income Tax	416.3	371.2	139.9
Net Income	$ 931.4	$ 867.1	$ 402.1
Net Income Per Common Share			
Basic	$ 3.96	$ 3.51	$ 1.57
Assuming Dilution	$ 3.95	$ 3.50	$ 1.57

See notes to consolidated financial statements.

Consolidated Statements of Comprehensive Income

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Net Income	$ 931.4	$ 867.1	$ 402.1
Other Comprehensive Income (Loss)			
Change in Net Unrealized Gain on Securities Before Adjustment (net of tax expense (benefit) of $318.0; $(892.5); $725.8)	661.9	(1,720.9)	1,439.3
Change in Adjustment to Deferred Acquisition Costs and Reserves for Future Policy and Contract Benefits, Net of Reinsurance (net of tax expense (benefit) of $(200.6); $856.6; $(665.1))	(425.6)	1,634.9	(1,284.7)
Change in Net Gain on Cash Flow Hedges (net of tax benefit of $25.4; $4.3; $2.0)	(50.5)	(13.0)	(5.3)
Change in Foreign Currency Translation Adjustment (net of tax benefit of $—; $0.1; $—)	(180.4)	(60.2)	(66.3)
Change in Unrecognized Pension and Postretirement Benefit Costs (net of tax expense (benefit) of $(34.2); $3.2; $(92.4))	(72.5)	8.9	(171.6)
Total Other Comprehensive Loss	(67.1)	(150.3)	(88.6)
Comprehensive Income	$ 864.3	$ 716.8	$ 313.5

See notes to consolidated financial statements.

Consolidated Statements of Stockholders' Equity

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Common Stock			
Balance at Beginning of Year	$ 30.3	$ 30.2	$ 36.1
Common Stock Activity	0.1	0.1	0.1
Retirement of Treasury Stock	—	—	(6.0)
Balance at End of Year	30.4	30.3	30.2
Additional Paid-in Capital			
Balance at Beginning of Year	2,247.2	2,221.2	2,634.1
Common Stock Activity	25.6	26.0	28.4
Retirement of Treasury Stock	—	—	(441.3)
Balance at End of Year	2,272.8	2,247.2	2,221.2
Accumulated Other Comprehensive Income (Loss)			
Balance at Beginning of Year	16.1	166.4	255.0
Other Comprehensive Loss	(67.1)	(150.3)	(88.6)
Balance at End of Year	(51.0)	16.1	166.4
Retained Earnings			
Balance at Beginning of Year	7,995.2	7,302.3	8,064.0
Net Income	931.4	867.1	402.1
Dividends to Stockholders (per common share: $0.77; $0.70; $0.62)	(182.6)	(174.2)	(159.4)
Retirement of Treasury Stock	—	—	(1,004.4)
Balance at End of Year	8,744.0	7,995.2	7,302.3
Treasury Stock			
Balance at Beginning of Year	(1,624.9)	(1,198.2)	(2,349.3)
Purchases of Treasury Stock	(403.3)	(426.7)	(300.6)
Retirement of Treasury Stock	—	—	1,451.7
Balance at End of Year	(2,028.2)	(1,624.9)	(1,198.2)
Total Stockholders' Equity at End of Year	$ 8,968.0	$ 8,663.9	$ 8,521.9

See notes to consolidated financial statements.

Consolidated Statements of Cash Flows

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Cash Flows from Operating Activities			
Net Income	$ 931.4	$ 867.1	$ 402.1
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities			
Change in Receivables	(167.3)	29.3	(21.5)
Change in Deferred Acquisition Costs	(99.4)	(87.4)	(83.2)
Change in Insurance Reserves and Liabilities	368.2	293.9	972.2
Change in Income Taxes	34.7	180.5	(18.6)
Change in Other Accrued Liabilities	125.8	20.0	105.2
Non-cash Components of Net Investment Income	(187.7)	(194.1)	(195.7)
Net Realized Investment (Gain) Loss	(24.2)	43.8	(16.1)
Depreciation	101.7	99.5	87.9
Other, Net	32.9	39.5	(8.7)
Net Cash Provided by Operating Activities	1,116.1	1,292.1	1,223.6
Cash Flows from Investing Activities			
Proceeds from Sales of Fixed Maturity Securities	911.5	880.1	450.1
Proceeds from Maturities of Fixed Maturity Securities	2,197.8	2,417.0	1,819.4
Proceeds from Sales and Maturities of Other Investments	336.8	347.0	235.0
Purchase of Fixed Maturity Securities	(3,362.8)	(4,305.3)	(2,918.4)
Purchase of Other Investments	(576.0)	(409.5)	(285.2)
Net Sales (Purchases) of Short-term Investments	6.3	170.6	(69.3)
Net Increase (Decrease) in Payables for Collateral on Investments	(9.4)	341.6	(3.8)
Acquisition of Business (Net of Cash Acquired)	(129.2)	(54.3)	—
Net Purchases of Property and Equipment	(85.0)	(100.2)	(114.5)
Other, Net	—	—	0.1
Net Cash Used by Investing Activities	(710.0)	(713.0)	(886.6)
Cash Flows from Financing Activities			
Issuance of Long-term Debt	609.1	271.4	347.2
Long-term Debt Repayment	(414.0)	(226.3)	(186.6)
Cost Related to Early Retirement of Debt	—	—	(13.2)
Issuance of Common Stock	8.5	6.4	12.3
Repurchase of Common Stock	(405.2)	(417.9)	(306.0)
Dividends Paid to Stockholders	(182.6)	(174.2)	(159.4)
Other, Net	(34.4)	(28.1)	(22.9)
Net Cash Used by Financing Activities	(418.6)	(568.7)	(328.6)
Net Increase (Decrease) in Cash and Bank Deposits	(12.5)	10.4	8.4
Cash and Bank Deposits at Beginning of Year	112.9	102.5	94.1
Cash and Bank Deposits at End of Year	$ 100.4	$ 112.9	$ 102.5

See notes to consolidated financial statements.

Note 1. Significant Accounting Policies

Basis of Presentation: The accompanying consolidated financial statements of Unum Group and its subsidiaries (the Company) have been prepared in accordance with U.S. generally accepted accounting principles (GAAP). Such accounting principles differ from statutory accounting principles (see Note 15). Intercompany transactions have been eliminated.

Description of Business: We are a leading provider of financial protection benefits in the United States and the United Kingdom. Our products include disability, life, accident, critical illness, dental and vision, and other related services. We market our products primarily through the workplace.

We have three principal operating business segments: Unum US, Unum UK, and Colonial Life. Our other reporting segments are Closed Block and Corporate. See Note 13 for further discussion of our operating segments.

Use of Estimates: The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect amounts reported in the financial statements and accompanying notes. Such estimates and assumptions could change in the future as more information becomes known, which could impact the amounts reported and disclosed herein.

Fixed Maturity Securities: Fixed maturity securities include long-term bonds and redeemable preferred stocks. Our fixed maturity securities are classified as available-for-sale and reported at fair value. Changes in the fair value of available-for-sale fixed maturity securities, except for amounts related to other-than-temporary impairment losses recognized in earnings, are reported as a component of other comprehensive income. These amounts are net of income tax and valuation adjustments to deferred acquisition costs and reserves for future policy and contract benefits which would have been recorded had the related unrealized gain or loss on these securities been realized.

Interest income is recorded as part of net investment income when earned, using an effective yield method giving effect to amortization of premium and accretion of discount. Included within fixed maturity securities are mortgage-backed and asset-backed securities. We recognize investment income on these securities using a constant effective yield based on projected prepayments of the underlying loans and the estimated economic life of the securities. Actual prepayment experience is reviewed periodically, and effective yields are recalculated when differences arise between prepayments originally projected and the actual prepayments received and currently projected. The effective yield is recalculated on a retrospective basis, and the adjustment is reflected in net investment income. For fixed maturity securities on which collection of investment income is uncertain, we discontinue the accrual of investment income and recognize investment income when interest and dividends are received. Payment terms specified for fixed maturity securities may include a prepayment penalty for unscheduled payoff of the investment. Prepayment penalties are recognized as investment income when received.

In determining when a decline in fair value below amortized cost of a fixed maturity security is other than temporary, we evaluate available information, both positive and negative, in reaching our conclusions. In particular, we consider the strength of the issuer's balance sheet, its debt obligations and near-term funding requirements, cash flow and liquidity, the profitability of its core businesses, the availability of marketable assets which could be sold to increase liquidity, its industry fundamentals and regulatory environment, and its access to capital markets. Although all available and applicable factors are considered in our analysis, our expectation of recovering the entire amortized cost basis of the security, whether we intend to sell the security, whether it is more likely than not that we will be required to sell the security before recovery of its amortized cost, and whether the security is current on principal and interest payments are the most critical factors in determining whether impairments are other than temporary. The significance of the decline in value and the length of time during which there has been a significant decline are also important factors, but we generally do not record an impairment loss based solely on these two factors, since often other more relevant factors will impact our evaluation of a security.

If we determine that the decline in value of an investment is other than temporary, the investment is written down to fair value, and an impairment loss is recognized in the current period, either in earnings or in both earnings and other comprehensive income, as applicable. Other-than-temporary impairment losses on fixed maturity securities which we intend to sell or more likely than not will be required to sell before recovery in value are recognized in earnings and equal the entire difference between the security's amortized cost basis and its fair value. For securities which we do not intend to sell and it is not more likely than not that we will be required to sell before recovery in value, other-than-temporary impairment losses recognized in earnings generally represent the difference between the amortized cost of the security and the present value of our best estimate of cash flows expected to be collected, discounted using the effective interest rate implicit in the security at the date of acquisition. For fixed maturity securities for which we have recognized an other-than-temporary impairment loss through earnings, if through subsequent evaluation there is a significant increase in expected cash flows, the difference between the new amortized cost basis and the cash flows expected to be collected is accreted as net investment income over the remaining life of the investment. See Notes 2 and 3.

Mortgage Loans: Mortgage loans are generally held for investment and are carried at amortized cost less an allowance for probable losses. Interest income is accrued on the principal amount of the loan based on the loan's contractual interest rate. Prepayment penalties are recognized as investment income when received. For mortgage loans on which collection of interest income is uncertain, we discontinue the accrual of interest and recognize it in the period when an interest payment is received. We typically do not resume the accrual of interest on mortgage loans on nonaccrual status until there are significant improvements in the underlying financial condition of the borrower. We consider a loan to be delinquent if full payment is not received in accordance with the contractual terms of the loan.

We evaluate each of our mortgage loans individually for impairment and assign an internal credit quality rating based on a comprehensive rating system used to evaluate the credit risk of the loan. Although all available and applicable factors are considered in our analysis, loan-to-value and debt service coverage ratios are the most critical factors in determining impairment. If we determine that it is probable we will be unable to collect all amounts due under the contractual terms of a mortgage loan, we establish an allowance for credit loss. If we expect to foreclose on the property, the amount of the allowance typically equals the excess carrying value of the mortgage loan over the fair value of the underlying collateral. If we expect to retain the mortgage loan until payoff, the allowance equals the excess carrying value of the mortgage loan over the expected future cash flows of the loan. Additions and reductions to our allowance for credit losses on mortgage loans are reported as a component of net realized investment gains and losses. We do not purchase mortgage loans with existing credit impairments. See Note 3.

Policy Loans: Policy loans are presented at unpaid balances directly related to policyholders. Interest income is accrued on the principal amount of the loan based on the loan's contractual interest rate. Included in policy loans are $3,206.1 million and $3,150.1 million of policy loans ceded to reinsurers at December 31, 2016 and 2015, respectively.

Other Long-term Investments: Other long-term investments are comprised primarily of tax credit partnerships and private equity partnerships.

Tax credit partnerships in which we have invested were formed for the purpose of investing in the construction and rehabilitation of low-income housing. Because the partnerships are structured such that there is no return of principal, the primary sources of investment return from our tax credit partnerships are tax credits and tax benefits derived from passive losses on the investments, both of which may exhibit variability over the life of the investment. These partnerships are accounted for using either the proportional or the effective yield method, depending primarily on whether the tax credits are guaranteed through a letter of credit, a tax indemnity agreement, or another similar arrangement. Tax credits received from these partnerships are reported in our consolidated statements of income as either a reduction of premium tax or a reduction of income tax. The amortization of the principal amount invested in these partnerships is reported as a component of either premium tax or income tax.

Our investments in private equity partnerships are passive in nature. The underlying investments held by these partnerships include both equity and debt securities and are accounted for using the equity or cost method, depending on the level of ownership and the degree of our influence over partnership operating and financial policies. For partnerships accounted for under the equity method, our portion of partnership earnings is reported as a component of net investment income in our consolidated statements of income. For those partnerships accounted for under the cost method, we record income received from partnership distributions as either a component of net investment income or net realized investment gain or loss, in accordance with the source of the funds distributed from the partnership. See Notes 2 and 3.

Short-term Investments: Short-term investments are carried at cost. Short-term investments include investments maturing within one year, such as corporate commercial paper and U.S. Treasury bills, bank term deposits, and other cash accounts and cash equivalents earning interest. See Note 2.

Cash and Bank Deposits: Cash and bank deposits include cash on hand and non-interest bearing cash and deposit accounts.

Derivative Financial Instruments: Derivative financial instruments (including certain derivative instruments embedded in other contracts) are recognized as either other long-term investments or other liabilities in our consolidated balance sheets and are reported at fair value. The accounting for a derivative depends on whether it has been designated and qualifies as part of a hedging relationship, and further, on the type of hedging relationship. To qualify for hedge accounting, at the inception of the hedging transaction, we formally document the risk management objective and strategy for undertaking the hedging transaction, as well as the designation of the hedge as either a fair value hedge or a cash flow hedge. Included in this documentation is how the hedging instrument is expected to hedge the designated risk(s) related to specific assets or liabilities on the balance sheet or to specific forecasted transactions as well as a description of the method that will be used to retrospectively and prospectively assess the hedging instrument's effectiveness and the method that will be used to measure ineffectiveness.

A derivative designated as a hedging instrument must be assessed as being highly effective in offsetting the designated risk(s) of the hedged item. Hedge effectiveness is formally assessed at inception and periodically throughout the life of the designated hedging relationship, using qualitative and quantitative methods. Qualitative methods include comparison of critical terms of the derivative to the hedged item. Quantitative methods include regression or other statistical analysis of changes in fair value or cash flows associated with the hedge relationship.

Changes in the fair value of a derivative designated as a fair value hedge, including amounts measured as ineffectiveness, and changes in the fair value of the hedged item attributable to the risk being hedged are recognized in earnings as a component of net realized investment gain or loss during the period of change in fair value. The gain or loss on the termination of a fair value hedge is recognized in earnings as a component of net realized investment gain or loss during the period in which the termination occurs. When interest rate swaps are used in hedge accounting relationships, periodic settlements are recorded in the same income statement line as the related settlements of the hedged items.

To the extent it is effective, changes in the fair value of a derivative designated as a cash flow hedge are reported in other comprehensive income and reclassified into earnings and reported on the same income statement line item as the hedged item and in the same period or periods during which the hedged item affects earnings. The ineffective portion of the hedge, if any, is recognized in earnings as a component of net realized investment gain or loss during the period of change in fair value. The gain or loss on the termination of an effective cash flow hedge is reported in other comprehensive income and reclassified into earnings and reported on the same income statement line item as the hedged item and in the same period or periods during which the hedged item affects earnings.

Gains or losses on the termination of ineffective fair value or cash flow hedges are reported in earnings as a component of net realized investment gain or loss. In the event a hedged item is disposed of or the anticipated transaction being hedged is no longer likely to occur, we will terminate the related derivative and recognize the gain or loss on termination in current earnings as a component of net realized investment gain or loss. In the event a hedged item is disposed of subsequent to the termination of the hedging transaction, we reclassify any remaining gain or loss on the cash flow hedge out of accumulated other comprehensive income into earnings as a component of the same income statement line item wherein we report the gain or loss on disposition of the hedged item.

For a derivative not designated as a hedging instrument, changes in the fair value of the derivative, together with the payment of periodic fees, if applicable, are recognized in earnings as a component of net realized investment gain or loss during the period of change in fair value.

Cash flow activity from the settlement of derivative contracts is reported in the consolidated statements of cash flows as a component of proceeds from sales and maturities of other investments.

In our consolidated balance sheets, we do not offset fair value amounts recognized for derivatives executed with the same counterparty under a master netting agreement and fair value amounts recognized for the right to reclaim cash collateral or the obligation to return cash collateral arising from those master netting agreements. See Notes 2, 3 and 4.

Fair Value Measurement: Certain assets and liabilities are reported at fair value in our consolidated balance sheets and in our notes to our consolidated financial statements. We define fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Therefore, fair value represents an exit price, not an entry price. The exit price objective applies regardless of our intent and/or ability to sell the asset or transfer the liability at the measurement date. Assets or liabilities with readily available actively quoted prices or for which fair value can be measured from actively quoted prices in active markets generally have more pricing observability and less judgment utilized in measuring fair value. When actively quoted prices are not available, fair values are based on quoted prices in markets that are not active, quoted prices for similar but not identical assets or liabilities, or other observable inputs. If observable inputs are not available, unobservable inputs and/or adjustments to observable inputs requiring management judgment are used to determine fair value. We categorize our assets and liabilities measured at estimated fair value into a three-level hierarchy, based on the significance of the inputs. The fair value hierarchy gives the highest priority to inputs which are unadjusted and represent quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). See Note 2.

Realized Investment Gains and Losses: Realized investment gains and losses are reported as a component of revenue in the consolidated statements of income and are based upon specific identification of the investments sold. See Note 3.

Deferred Acquisition Costs: Incremental direct costs associated with the successful acquisition of new or renewal insurance contracts have been deferred. Such costs include commissions, other agency compensation, certain selection and policy issue expenses, and certain field expenses. Acquisition costs that do not vary with the production of new business, such as commissions on group products which are generally level throughout the life of the policy, are excluded from deferral. Deferred acquisition costs are subject to recoverability testing at the time of policy issue and loss recognition testing in subsequent years.

Deferred acquisition costs related to non-interest sensitive policies are amortized in proportion to the premium income we expect to receive over the life of the policies. Deferred acquisition costs related to interest sensitive policies are amortized over the lives of the policies in relation to the present value of estimated gross profits from surrender charges, mortality margins, investment returns, and expense margins. Deviations from projections result in a change to the rate of amortization in the period during which such events occur. Generally, the amortization periods for these policies approximate the estimated lives of the policies.

For certain products, policyholders can elect to modify product benefits, features, rights, or coverages by exchanging a contract for a new contract or by amendment, endorsement, or rider to a contract, or by the election of a feature or coverage within a contract. These transactions are known as internal replacement transactions. Internal replacement transactions wherein the modification does not substantially change the policy are accounted for as continuations of the replaced contracts. Unamortized deferred acquisition costs from the original policy continue to be amortized over the expected life of the new policy, and the costs of replacing the policy are accounted for as policy maintenance costs and expensed as incurred. Internal replacement transactions, principally on group contracts, that result in a policy that is substantially changed are accounted for as an extinguishment of the original policy and the issuance of a new policy. Unamortized deferred acquisition costs on the original policy that was replaced are immediately expensed, and the costs of acquiring the new policy are capitalized and amortized in accordance with our accounting policies for deferred acquisition costs.

Loss recognition is performed on an annual basis, or more frequently if appropriate, using best estimate assumptions as to future experience as of the date of the test. Insurance contracts are grouped for each major product line within a segment when we perform the loss recognition tests. If loss recognition testing indicates that deferred acquisition costs are not recoverable, the deficiency is charged to expense.

Goodwill: Goodwill is the excess of the amount paid to acquire a business over the fair value of the net assets acquired. We review the carrying amount of goodwill for impairment on an annual basis, or more frequently if events or changes in circumstances indicate that the carrying amount might not be recoverable. Goodwill impairment testing compares the fair value of a reporting unit with its carrying amount, including goodwill. The fair values of the reporting units are determined using discounted cash flow models. The critical estimates necessary in determining fair value are projected earnings and the discount rate. We set our discount rate assumption based on an expected risk adjusted cost of capital. If the fair value of the reporting unit to which the goodwill relates is less than the carrying amount of the unamortized goodwill, the impairment charge is determined by calculating the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities. The carrying amount of goodwill is then reduced with a corresponding charge to expense.

Property and Equipment: Property and equipment is reported at cost less accumulated depreciation, which is calculated on the straight-line method over the estimated useful life. The accumulated depreciation for property and equipment was $989.4 million and $902.6 million as of December 31, 2016 and 2015, respectively.

Value of Business Acquired: Value of business acquired represents the present value of future profits recorded in connection with the acquisition of a block of insurance policies. The asset is amortized based upon expected future premium income for non-interest sensitive insurance policies and estimated future gross profits from surrender charges, mortality margins, investment returns, and expense margins for interest sensitive insurance policies. The value of business acquired, which is included in other assets in our consolidated balance sheets, was $31.9 million and $24.0 million at December 31, 2016 and 2015, respectively. The accumulated amortization for value of business acquired was $119.2 million and $133.1 million as of December 31, 2016 and 2015, respectively.

The amortization of value of business acquired, which is included in other expenses in the consolidated statements of income, was $5.1 million, $4.6 million, and $3.5 million for the years ended December 31, 2016, 2015, and 2014, respectively. We periodically review the carrying amount of value of business acquired using the same methods used to evaluate deferred acquisition costs.

Policy and Contract Benefits: Policy and contract benefits represent amounts paid and expected to be paid based on reported losses and estimates of incurred but not reported losses for non-interest sensitive life and accident and health products. For interest sensitive products, benefits are the amounts paid and expected to be paid on insured claims in excess of the policyholders' policy fund balances.

Reserves for Policy and Contract Benefits: Policy reserves represent future policy and contract benefits for claims not yet incurred. Policy reserves for non-interest sensitive life and accident and health products are determined using the net level premium method. The reserves are calculated based upon assumptions as to interest, persistency, morbidity, and mortality that were appropriate at the date of issue. Discount rate assumptions are based on actual and expected net investment returns. Persistency assumptions are based on our actual historical experience adjusted for future expectations. Claim incidence and claim resolution rate assumptions related to morbidity and mortality are based on actual experience or industry standards adjusted as appropriate to reflect our actual experience and future expectations. The assumptions vary by plan, year of issue, and policy duration and include a provision for adverse deviation.

Policy reserves for group single premium annuities are developed on a net single premium method. The reserves are calculated based on assumptions as to interest, mortality, and retirement that were appropriate at the date of issue. Mortality assumptions are based upon industry standards adjusted as appropriate to reflect our actual experience and future expectations. The assumptions vary by year of issue.

Policy reserves for interest sensitive products are principally policyholder account values.

Policy reserves require ongoing loss recognition testing. We perform loss recognition tests on our policy reserves annually, or more frequently if appropriate, using best estimate assumptions as of the date of the test, without a provision for adverse deviation. We group the policy reserves for each major product line within a segment when we perform the loss recognition tests. If the policy reserves determined using these best estimate assumptions are higher than our existing policy reserves net of any deferred acquisition cost balance, the existing policy reserves are increased or deferred acquisition costs are reduced to immediately recognize the deficiency. This becomes the new basis for policy reserves going forward, subject to future loss recognition testing.

Claim reserves represent future policy and contract benefits for claims that have been incurred or are estimated to have been incurred but not yet reported to us. Our claim reserves relate primarily to disability policies and are calculated based on assumptions as to interest and claim resolution rates that are currently appropriate. Claim resolution rate assumptions are based on our actual experience. The interest rate assumptions used for discounting claim reserves are based on projected portfolio yield rates, after consideration for defaults and investment expenses, for the assets supporting the liabilities for the various product lines. Unlike policy reserves for which assumptions are generally established and locked in at the time of policy issuance, claim reserves are subject to revision as current claim experience and projections of future factors affecting claim experience change. Claim reserves do not include a provision for adverse deviation. See Note 6.

Policyholders' Funds: Policyholders' funds represent customer deposits plus interest credited at contract rates. We control interest rate risk by investing in quality assets which have an aggregate duration that closely matches the expected duration of the liabilities.

Income Tax: Deferred taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial statement purposes and the amounts used for income tax purposes. Deferred taxes have been measured using enacted statutory income tax rates and laws that are currently in effect. We record deferred tax assets for tax positions taken in the U.S. and other tax jurisdictions based on our assessment of whether a position is more likely than not to be sustained upon examination based solely on its technical merits. A valuation allowance is established for deferred tax assets when it is more likely than not that an amount will not be realized. See Note 7.

Short-term and Long-term Debt: Debt is generally carried at the unpaid principal balance, net of unamortized discount or premium and deferred debt issuance costs. Short-term debt consists of debt due within the next twelve months, including that portion of debt otherwise classified as long-term. Original issue discount or premium as well as debt issuance costs are recognized as a component of interest expense over the period the debt is expected to be outstanding. The carrying amount of long-term debt that is part of a fair value hedge program includes an adjustment to reflect the effect of the change in fair value attributable to the risk being hedged. Net interest settlements for fair value hedges on our long-term debt are recognized as a component of interest expense. See Note 8.

Treasury Stock and Retirement of Common Stock: Treasury stock is reflected as a reduction of stockholders' equity at cost. When shares are retired, the par value is removed from common stock, and the excess of the repurchase price over par is allocated between additional paid-in capital and retained earnings. See Note 10.

Revenue Recognition: Our non-interest sensitive life and accident and health products are long-duration contracts, and premium income is recognized as revenue when due from policyholders. If the contracts are experience rated, the estimated ultimate premium is recognized as revenue over the period of the contract. The estimated ultimate premium, which is revised to reflect current experience, is based on estimated claim costs, expenses, and profit margins.

For interest sensitive products, the amounts collected from policyholders are considered deposits, and only the deductions during the period for cost of insurance, policy administration, and surrenders are included in revenue. Policyholders' funds represent funds deposited by contract holders and are not included in revenue.

Fees from our administrative-services only and family medical leave products are reported as other income when services are rendered.

Reinsurance: We routinely enter into reinsurance agreements with other insurance companies to spread risk and thereby limit losses from large exposures. For each of our reinsurance agreements, we determine if the agreement provides indemnification against loss or liability relating to insurance risk in accordance with applicable accounting standards. If we determine that a reinsurance agreement does not expose the reinsurer to a reasonable possibility of a significant loss from insurance risk, we record the agreement using the deposit method of accounting.

Reinsurance activity is accounted for on a basis consistent with the terms of the reinsurance contracts and the accounting used for the original policies issued. Premium income and benefits and change in reserves for future benefits are presented in our consolidated statements of income net of reinsurance ceded. Ceded liabilities for policy and contract benefits, future policy and contract benefits, and unearned premiums are reported on a gross basis in our consolidated balance sheets, as are ceded policy loans. Our reinsurance recoverable includes the balances due from reinsurers under the terms of the reinsurance agreements for these ceded balances as well as settlement amounts currently due.

Where applicable, gains or losses on reinsurance transactions are deferred and amortized into earnings based upon expected future premium income for non-interest sensitive insurance policies and estimated future gross profits for interest sensitive insurance policies. The deferred gain on reinsurance included in other liabilities in our consolidated balance sheets at December 31, 2016 and 2015 was $23.8 million and $31.9 million, respectively.

Under ceded reinsurance agreements wherein we are not relieved of our legal liability to our policyholders, if the assuming reinsurer is unable to meet its obligations, we remain contingently liable. We evaluate the financial condition of reinsurers and monitor concentration of credit risk to minimize this exposure. We may also require assets in trust, letters of credit, or other acceptable collateral to support our reinsurance recoverable balances. In the event that reinsurers do not meet their obligations to us under the terms of the reinsurance agreements, certain amounts reported in our reinsurance recoverable could become uncollectible, in which case the reinsurance recoverable balances are stated net of allowances for uncollectible reinsurance. See Note 12.

Premium Tax Expense: Premium tax expense is included in other expenses in the consolidated statements of income. For the years ended December 31, 2016, 2015, and 2014, premium tax expense was $152.5 million, $146.5 million, and $139.2 million, respectively.

Stock-Based Compensation: The cost of stock-based compensation is generally measured based on the grant-date fair value of the award. The Black-Scholes options valuation model is used for estimating the fair value of stock options, and the Monte-Carlo valuation model is used for estimating the fair value of performance share units. Restricted stock units are valued based on the fair value of common stock at the grant date. Stock-based awards are expensed over the requisite service period, or for performance share units over the requisite service period, or remaining service period, if and when it becomes probable that the performance conditions will be satisfied, with an offsetting increase to additional paid-in capital in stockholders' equity. See Note 11.

Earnings Per Share: We compute basic earnings per share by dividing net income by the weighted average number of common shares outstanding for the period. Earnings per share assuming dilution is computed by dividing net income by the weighted average number of shares outstanding for the period plus the shares representing the dilutive effect of stock-based awards. In computing earnings per share assuming dilution, only potential common shares resulting from stock-based awards that are dilutive (those that reduce earnings per share) are included. We use the treasury stock method to account for the effect of outstanding stock options and nonvested stock awards on the computation of earnings per share assuming dilution. See Note 10.

Translation of Foreign Currency: Revenues and expenses of our foreign operations are translated at average exchange rates. Assets and liabilities are translated at the rate of exchange on the balance sheet dates. The translation gain or loss is generally reported in accumulated other comprehensive income, net of deferred tax. We do not provide for deferred taxes to the extent unremitted foreign earnings are deemed permanently invested.

Accounting for Participating Individual Life Insurance: Participating policies issued by one of our subsidiaries prior to its 1986 conversion from a mutual to a stock life insurance company will remain participating as long as the policies remain in-force. A Participation Fund Account (PFA) was established for the benefit of all such individual participating life and annuity policies and contracts. The assets of the PFA provide for the benefit, dividend, and certain expense obligations of the participating individual life insurance policies and annuity contracts. The assets of the PFA were $331.1 million and $338.8 million at December 31, 2016 and 2015, respectively.

Accounting Updates Adopted in 2016:

Accounting Standards Codification (ASC)	Description	Date of Adoption	Effect on Financial Statements
ASC 820 "Fair Value Measurement"	This update eliminated the requirement to categorize within the fair value hierarchy table investments whose fair value is measured at net asset value using the practical expedient. Instead, entities are required to disclose the fair value of these investments so that financial statement users can reconcile amounts reported in the fair value hierarchy table to the amounts reported on the consolidated balance sheets. The guidance is to be applied retrospectively.	January 1, 2016	The adoption of this update modified certain of our annual reporting period disclosures for invested assets held in our employee benefit plans but had no effect on our financial position or results of operations.
ASC 835 "Interest — Imputation of Interest"	This update simplified the presentation of deferred debt issuance costs by requiring these costs to be presented in the balance sheet as a reduction of the carrying amount of the debt liability to which the deferred costs relate, rather than classifying the deferred costs as an asset. This classification is consistent with the treatment of debt discounts. We applied the amendments in the update retrospectively, adjusting all prior periods in our consolidated financial statements and accompanying notes.	January 1, 2016	The adoption of this update resulted in the following reclassification adjustments to our consolidated balance sheets but had no effect on our financial position or results of operations.

	Year Ended December 31, 2015		
(in millions of dollars)	Historical Accounting Method	As Adjusted	Effect of Change
Consolidated Balance Sheets			
Short-term Debt	$ 352.4	$ 352.0	$ (0.4)
Long-term Debt	2,475.1	2,449.4	(25.7)
Other Assets	663.5	637.4	(26.1)

Accounting Updates Adopted in 2015:

ASC	Description	Date of Adoption	Effect on Financial Statements
ASC 860 "Transfers and Servicing"	This update changed the accounting for repurchase-to-maturity transactions and linked repurchase financings to secured borrowing accounting, which is consistent with the accounting for other repurchase agreements. The update also required disclosures for repurchase agreements, securities lending transactions, and repurchase-to-maturity transactions.	January 1, 2015, except for certain disclosures, which were effective April 1, 2015.	The adoption of this update expanded our disclosures, but had no effect on our financial position or results of operations.
ASC 323 "Investments — Equity Method and Joint Ventures"	This update permitted entities to make an accounting policy election to account for investments in qualified affordable housing projects using the proportional amortization method if certain conditions are met. Under the proportional amortization method, an entity amortizes the initial cost of the investment in proportion to the tax credits and other tax benefits received and recognizes the net investment performance in the income statement as a component of income tax expense (benefit). Additional disclosures concerning investments in qualified affordable housing projects were also required.	January 1, 2015	The adoption of this update resulted in the retrospective adjustment of all prior periods in our consolidated financial statements and accompanying notes.

Accounting Updates Outstanding:

ASC	Description	Date of Adoption	Effect on Financial Statements
ASC 944 "Financial Services — Insurance"	This update changes the disclosure requirements for certain insurance contracts. These changes include a requirement to disclose the rollforward of the liability for unpaid claims and claim adjustment expenses in both interim and annual reporting periods for long-duration and short-duration insurance contracts. Additional claims disclosures will also be required for short-duration contracts. The guidance is to be applied retrospectively.	January 1, 2016 for annual reporting period disclosures and January 1, 2017 for interim reporting period disclosures.	The annual reporting period disclosure requirements effective January 1, 2016 are applicable to only to certain of our individual dental products. The amount of reserves for policy and contract benefits held for these products is immaterial, and we therefore did not alter our current disclosures. We will adopt the interim reporting period disclosure requirements effective January 1, 2017. The adoption of this update will have no effect on our financial position or results of operations.
ASC 718 "Compensation — Stock Compensation"	This update changes the accounting and disclosure requirements for certain aspects of share-based payments to employees. The update requires all income tax effects of stock-based compensation awards to be recognized in the income statement when the awards vest or are settled. The update also allows an employer to repurchase more of an employee's shares than it can today for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. Transition guidance for the amendments varies between the retrospective, modified retrospective, and prospective methods depending on the specific requirement of the update. Early adoption is also permitted.	January 1, 2017	The adoption of this update will not have a material effect on our financial position or results of operations. During periods in which the vesting date fair value differs from the grant date fair value of certain stock-based compensation awards, we may experience volatility in the income tax recognized in our results of operations.

Accounting Updates Outstanding: (Continued)

ASC	Description	Date of Adoption	Effect on Financial Statements
ASC 230 "Statement of Cash Flows"	This update provides clarifying guidance intended to reduce the diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The update addresses eight specific cash flow issues that relate to various transactions. The guidance is to be applied retrospectively, with early adoption permitted.	January 1, 2018	The adoption of this update will result in reclassifications to certain cash receipts and payments within our consolidated statements of cash flows but will have no effect on our financial position or results of operations.
ASC 606 "Revenue from Contracts with Customers"	This update supersedes virtually all existing guidance regarding the recognition of revenue from customers. Specifically excluded from the scope of this update are contracts under ASC 944, which includes insurance contracts, although our fee-based service products, which represent less than one percent of 2016 total revenue, are included within the scope. The core principle of this guidance is that revenue recognition should depict the transfer of goods or services to customers in an amount that reflects the consideration to which an entity expects to be entitled in exchange for those goods or services. The guidance is to be applied retrospectively.	January 1, 2018	The adoption of this update will not have a material effect on our financial position or results of operations.
ASC 740 "Income Taxes"	This update eliminates the exception that requires intra-entity asset transfers other than inventory to be deferred until the transferred asset is sold to a third party or otherwise recovered through use. It requires recognition of tax expense from the sale of the asset in the seller's tax jurisdiction when the transfer occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. The guidance is to be applied retrospectively.	January 1, 2018	We have not yet determined the expected impact on our financial position or results of operations.

Accounting Updates Outstanding: (Continued)

ASC	Description	Date of Adoption	Effect on Financial Statements
ASC 825 "Financial Instruments — Overall"	This update changes the accounting and disclosure requirements for certain financial instruments. These changes include a requirement to measure equity investments, other than those that result in consolidation or are accounted for under the equity method, at fair value through net income unless the investment qualifies for certain practicability exceptions. In addition, the update clarifies guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale fixed maturity securities. Changes also include the modification of certain disclosures around the fair value of financial instruments, including the requirement for separate presentation of financial assets and liabilities by measurement category, as well as the elimination of certain disclosures around methods and significant assumptions used to estimate fair value. The guidance is to be applied retrospectively.	January 1, 2018	We have not yet determined the expected impact on our financial position or results of operations.
ASC 842 "Leases"	This update changes the accounting for leases, requiring lessees to report most leases on their balance sheets, regardless of whether the lease is classified as a finance lease or an operating lease. For lessees, the initial lease liability is equal to the present value of lease payments, and a corresponding asset, adjusted for certain items, is also recorded. Expense recognition for lessees will remain similar to current accounting requirements for capital and operating leases. For lessors, the guidance modifies the classification criteria and the accounting for sales-type and direct financing leases. The guidance is to be applied using a modified retrospective approach at the beginning of the earliest comparative period presented.	January 1, 2019	We have not yet determined the expected impact on our financial position or results of operations.

Accounting Updates Outstanding: (Continued)

ASC	Description	Date of Adoption	Effect on Financial Statements
ASC 350 "Intangibles — Goodwill and Other"	This update eliminates the requirement to calculate the implied fair value of goodwill (the second step in the current two-step test) to measure a goodwill impairment charge. Instead, entities should perform the goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the excess of the carrying amount over the fair value, with the loss not to exceed the total amount of goodwill allocated to that reporting unit. The guidance is to be applied prospectively, with early adoption permitted for goodwill impairment tests performed on testing dates after January 1, 2017.	January 1, 2020	The adoption of this update will not have a material effect on our financial position or results of operations.
ASC 326 "Financial Instruments — Credit Losses"	This update amends the guidance on the impairment of financial instruments. The update adds an impairment model known as the current expected credit loss model that is based on expected losses rather than incurred losses and will generally result in earlier recognition of allowances for losses. The current expected credit loss model applies to financial instruments such as mortgage loans, fixed maturity securities classified as held-to-maturity, and certain receivables. The update also modifies the other-than-temporary impairment model used for available-for-sale fixed maturity securities such that credit losses are recognized as an allowance rather than as a reduction in the amortized cost of the security. The reversal of previously recognized credit losses on available-for-sale fixed maturity securities is allowed under specified circumstances. Additional disclosures will also be required, including information used to develop the allowance for losses. The guidance is to be applied to most instruments in scope using a modified retrospective approach at the beginning of the earliest comparative period presented. For available-for-sale fixed maturity securities, the update is applied prospectively. Other-than-temporary impairment losses recognized on available-for-sale fixed maturity securities prior to adoption of the update cannot be reversed.	January 1, 2020	We have not yet determined the expected impact on our financial position or results of operations.

Note 2. Fair Values of Financial Instruments

Presented as follows are the carrying amounts and fair values of financial instruments. The carrying values of financial instruments such as short-term investments, cash and bank deposits, accounts and premiums receivable, accrued investment income, and securities lending agreements approximate fair value due to the short-term nature of the instruments. As such, these financial instruments are not included in the following chart.

	December 31			
	2016		2015	
(in millions of dollars)	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Assets				
Fixed Maturity Securities	$44,217.3	$44,217.3	$43,354.4	$43,354.4
Mortgage Loans	2,038.9	2,122.2	1,883.6	2,013.9
Policy Loans	3,463.2	3,564.2	3,395.4	3,498.0
Other Long-term Investments				
Derivatives	32.7	32.7	49.8	49.8
Equity Securities	1.2	1.2	1.4	1.4
Miscellaneous Long-term Investments	541.9	541.9	474.4	474.4
Liabilities				
Policyholders' Funds				
Deferred Annuity Products	$ 597.4	$ 597.4	$ 608.8	$ 608.8
Supplementary Contracts without Life Contingencies	608.8	608.8	641.1	641.1
Short-term Debt	—	—	352.0	366.2
Long-term Debt	2,999.4	3,175.8	2,449.4	2,645.9
Payables for Collateral on Investments				
Federal Home Loan Bank (FHLB) Funding Agreements	350.0	350.0	350.0	350.0
Other Liabilities				
Derivatives	52.8	52.8	50.2	50.2
Embedded Derivative in Modified Coinsurance Arrangement	46.7	46.7	87.6	87.6
Unfunded Commitments to Investment Partnerships	5.0	5.0	5.0	5.0

The methods and assumptions used to estimate fair values of financial instruments are discussed as follows.

Fair Value Measurements for Financial Instruments Not Carried at Fair Value

Mortgage Loans: Fair values are estimated using discounted cash flow analyses and interest rates currently being offered for similar loans to borrowers with similar credit ratings and maturities. Loans with similar characteristics are aggregated for purposes of the calculations. These financial instruments are assigned a Level 2 within the fair value hierarchy.

Policy Loans: Fair values for policy loans, net of reinsurance ceded, are estimated using discounted cash flow analyses and interest rates currently being offered to policyholders with similar policies. Carrying amounts for ceded policy loans, which equal $3,206.1 million and $3,150.1 million as of December 31, 2016 and 2015, respectively, approximate fair value and are reported on a gross basis in our consolidated balance sheets. A change in interest rates for ceded policy loans will not impact our financial position because the benefits and risks are fully ceded to reinsuring counterparties. These financial instruments are assigned a Level 3 within the fair value hierarchy.

Miscellaneous Long-term Investments: Carrying amounts for tax credit partnerships equal the unamortized balance of our contractual commitments and approximate fair value. Fair values for private equity partnerships are primarily derived from net asset values provided by the general partner in the partnerships' financial statements. Our private equity partnerships represent funds that are primarily invested in railcar leasing, the financial services industry, mezzanine debt, and bank loans. Distributions received from the funds arise from income generated by the underlying investments as well as the liquidation of the underlying investments. As of December 31, 2016, we estimate that the underlying assets of the funds will be liquidated over the next one to eleven years. These financial instruments are assigned a Level 3 within the fair value hierarchy. Our shares of FHLB common stock are carried at cost, which approximates fair value. These financial instruments are considered restricted investments and are assigned a Level 2 within the fair value hierarchy.

Policyholders' Funds: Policyholders' funds are comprised primarily of deferred annuity products and supplementary contracts without life contingencies and represent customer deposits plus interest credited at contract rates. Carrying amounts approximate fair value. These financial instruments are assigned a Level 3 within the fair value hierarchy.

Fair values for insurance contracts other than investment contracts are not required to be disclosed. However, the fair values of liabilities under all insurance contracts are taken into consideration in our overall management of interest rate risk, which seeks to minimize exposure to changing interest rates through the matching of investment maturities with amounts due under insurance contracts.

Short-term Debt: Fair values for short-term debt are determined based on prices from independent pricing services that generally use observable inputs for securities or comparable securities in active markets in their valuation techniques. These financial instruments are assigned a Level 1.

Long-term Debt: Fair values for long-term debt are obtained from independent pricing services or discounted cash flow analyses based on current incremental borrowing rates for similar types of borrowing arrangements. Debt instruments which are valued by pricing services using active trades for which there was current market activity in that specific debt instrument have fair values of $709.8 million and $956.4 million as of December 31, 2016 and 2015, respectively, and are assigned a Level 1 within the fair value hierarchy. Debt instruments which are valued based on prices from pricing services that generally use observable inputs for securities or comparable securities in active markets in their valuation techniques have fair values of $2,466.0 million and $1,689.5 million as of December 31, 2016 and 2015, respectively, and are assigned a Level 2.

FHLB Funding Agreements: Funding agreements with the FHLB represent cash advances used for the purpose of investing in fixed maturity securities. Carrying amounts approximate fair value and are assigned a Level 2 within the fair value hierarchy.

Unfunded Commitments to Investment Partnerships: Unfunded equity commitments represent amounts that we have committed to fund certain investment partnerships. These commitments are legally binding, subject to the partnerships meeting specified conditions. Carrying amounts approximate fair value and are assigned a Level 2 within the fair value hierarchy.

Fair Value Measurements for Financial Instruments Carried at Fair Value

We report fixed maturity securities, derivative financial instruments, and unrestricted equity securities at fair value in our consolidated balance sheets. The degree of judgment utilized in measuring the fair value of financial instruments generally correlates to the level of pricing observability. Financial instruments with readily available active quoted prices or for which fair value can be measured from actively quoted prices in active markets generally have more pricing observability and less judgment utilized in measuring fair value. An active market for a financial instrument is a market in which transactions for an asset or a similar asset occur with sufficient frequency and volume to provide pricing information on an ongoing basis. A quoted price in an active market provides the most reliable evidence of fair value and should be used to measure fair value whenever available. Conversely, financial instruments rarely traded or not quoted have less observability and are measured at fair value using valuation techniques that require more judgment. Pricing observability is generally impacted by a number of factors, including the type of financial instrument, whether the financial instrument is new to the market and not yet established, the characteristics specific to the transaction, and overall market conditions.

Valuation techniques used for assets and liabilities accounted for at fair value are generally categorized into three types. The market approach uses prices and other relevant information from market transactions involving identical or comparable assets or liabilities. The income approach converts future amounts, such as cash flows or earnings, to a single present amount, or a discounted amount. The cost approach is based upon the amount that currently would be required to replace the service capacity of an asset, or the current replacement cost.

We use valuation techniques that are appropriate in the circumstances and for which sufficient data are available that can be obtained without undue cost and effort. In some cases, a single valuation technique will be appropriate (for example, when valuing an asset or liability using quoted prices in an active market for identical assets or liabilities). In other cases, multiple valuation techniques will be appropriate. If we use multiple valuation techniques to measure fair value, we evaluate and weigh the results, as appropriate, considering the reasonableness of the range indicated by those results. A fair value measurement is the point within that range that is most representative of fair value in the circumstances.

The selection of the valuation method(s) to apply considers the definition of an exit price and depends on the nature of the asset or liability being valued. For assets and liabilities accounted for at fair value, we generally use valuation techniques consistent with the market approach, and to a lesser extent, the income approach. We believe the market approach valuation technique provides more observable data than the income approach, considering the type of investments we hold. Our fair value measurements could differ significantly based on the valuation technique and available inputs. When using a pricing service, we obtain the vendor's pricing documentation to ensure we understand their methodologies. We periodically review and approve the selection of our pricing vendors to ensure we are in agreement with their current methodologies. When markets are less active, brokers may rely more on models with inputs based on the information available only to the broker. Our internal investment management professionals, which include portfolio managers and analysts, monitor securities priced by brokers and evaluate their prices for reasonableness based on benchmarking to available primary and secondary market information. In weighing a broker quote as an input to fair value, we place less reliance on quotes that do not reflect the result of market transactions. We also consider the nature of the quote, particularly whether the quote is a binding offer. If prices in an inactive market do not reflect current prices for the same or similar assets, adjustments may be necessary to arrive at fair value. When relevant market data is unavailable, which may be the case during periods of market uncertainty, the income approach can, in suitable circumstances, provide a more appropriate fair value. During 2016, we have applied valuation techniques on a consistent basis to similar assets and liabilities and consistent with those techniques used at year end 2015.

We use observable and unobservable inputs in measuring the fair value of our fixed maturity and equity securities. For securities categorized as Level 1, fair values equal active Trade Reporting and Compliance Engine (TRACE) pricing or unadjusted broker market maker prices. For securities categorized as Level 2 or Level 3, inputs that may be used in valuing each class of securities at any given time period are presented as follows. Actual inputs used to determine fair values will vary for each reporting period depending on the availability of inputs which may, at times, be affected by the lack of market liquidity.

Instrument	Level 2 Observable Inputs	Level 3 Unobservable Inputs
United States Government and Government Agencies and Authorities		
Valuation Techniques	Principally the market approach	Not applicable
Key Inputs	Prices obtained from external pricing services	
States, Municipalities, and Political Subdivisions		
Valuation Techniques	Principally the market approach	Principally the market approach
Key Inputs	Prices obtained from external pricing services	Analysis of similar bonds, adjusted for comparability
	Relevant reports issued by analysts and rating agencies	Non-binding broker quotes
	Audited financial statements	Security and issuer level spreads
Foreign Governments		
Valuation Techniques	Principally the market approach	Principally the market approach
Key Inputs	Prices obtained from external pricing services	Analysis of similar bonds, adjusted for comparability
	Non-binding broker quotes	Non-binding broker quotes
	Call provisions	Security and issuer level spreads
Public Utilities		
Valuation Techniques	Principally the market and income approaches	Principally the market and income approaches
Key Inputs	TRACE pricing	Change in benchmark reference
	Prices obtained from external pricing services	Analysis of similar bonds, adjusted for comparability
	Non-binding broker quotes	Discount for size — illiquidity
	Benchmark yields	Non-binding broker quotes
	Transactional data for new issuances and secondary trades	Lack of marketability
	Security cash flows and structures	Security and issuer level spreads
	Recent issuance/supply	Volatility of credit
	Security and issuer level spreads	
	Security creditor ratings/maturity/capital structure/optionality	
	Public covenants	

Instrument	Level 2 Observable Inputs	Level 3 Unobservable Inputs
	Comparative bond analysis	
	Relevant reports issued by analysts and rating agencies	
	Audited financial statements	
Mortgage/Asset-Backed Securities		
Valuation Techniques	Principally the market and income approaches	Principally the market approach
Key Inputs	Prices obtained from external pricing services	Analysis of similar bonds, adjusted for comparability
	Non-binding broker quotes	Non-binding broker quotes
	Security cash flows and structures	Security and issuer level spreads
	Underlying collateral	
	Prepayment speeds/loan performance/ delinquencies	
	Relevant reports issued by analysts and rating agencies	
	Audited financial statements	
All Other Corporate Bonds		
Valuation Techniques	Principally the market and income approaches	Principally the market and income approaches
Key Inputs	TRACE pricing	Change in benchmark reference
	Prices obtained from external pricing services	Analysis of similar bonds, adjusted for comparability
	Non-binding broker quotes	Discount for size — illiquidity
	Benchmark yields	Non-binding broker quotes
	Transactional data for new issuances and secondary trades	Lack of marketability
	Security cash flows and structures	Security and issuer level spreads
	Recent issuance/supply	Volatility of credit
	Security and issuer level spreads	
	Security creditor ratings/maturity/capital structure/optionality	
	Public covenants	
	Comparative bond analysis	

Instrument	Level 2 Observable Inputs	Level 3 Unobservable Inputs
	Relevant reports issued by analysts and rating agencies	
	Audited financial statements	
Redeemable Preferred Stocks		
Valuation Techniques	Principally the market approach	Principally the market approach
Key Inputs	Non-binding broker quotes	Non-binding broker quotes
	Benchmark yields	
	Comparative bond analysis	
	Call provisions	
	Relevant reports issued by analysts and rating agencies	
	Audited financial statements	
Equity Securities		
Valuation Techniques	Principally the market approach	Principally the market and income approaches
Key Inputs	Prices obtained from external pricing services	Financial statement analysis
	Non-binding broker quotes	Non-binding broker quotes

The management of our investment portfolio includes establishing pricing policy and reviewing the reasonableness of sources and inputs used in developing pricing. We review all prices obtained to ensure they are consistent with a variety of observable market inputs and to verify the validity of a security's price. In the event we receive a vendor's market price that does not appear reasonable based on our market analysis, we may challenge the price and request further information about the assumptions and methodologies used by the vendor to price the security. We may change the vendor price based on a better data source such as an actual trade. We also review all price changes from the prior month which fall outside a predetermined corridor. The overall valuation process for determining fair values may include adjustments to valuations obtained from our pricing sources when they do not represent a valid exit price. These adjustments may be made when, in our judgment and considering our knowledge of the financial conditions and industry in which the issuer operates, certain features of the financial instrument require that an adjustment be made to the value originally obtained from our pricing sources. These features may include the complexity of the financial instrument, the market in which the financial instrument is traded, counterparty credit risk, credit structure, concentration, or liquidity. Additionally, an adjustment to the price derived from a model typically reflects our judgment of the inputs that other participants in the market for the financial instrument being measured at fair value would consider in pricing that same financial instrument. In the event an asset is sold, we test the validity of the fair value determined by our valuation techniques by comparing the selling price to the fair value determined for the asset in the immediately preceding month end reporting period.

The parameters and inputs used to validate a price on a security may be adjusted for assumptions about risk and current market conditions on a quarter to quarter basis, as certain features may be more significant drivers of valuation at the time of pricing. Changes to inputs in valuations are not changes to valuation methodologies; rather, the inputs are modified to reflect direct or indirect impacts on asset classes from changes in market conditions.

Fair values for derivatives other than embedded derivatives in modified coinsurance arrangements are based on market quotes or pricing models and represent the net amount of cash we would have paid or received if the contracts had been settled or closed as of the last day of the period. We analyze credit default swap spreads relative to the average credit spread embedded within the LIBOR-setting syndicate in determining the effect of credit risk on our derivatives' fair values. If net counterparty credit risk for a derivative asset is determined to be material and is not adequately reflected in the LIBOR-based fair value obtained from our pricing sources, we adjust the valuations obtained from our pricing sources. For purposes of valuing net counterparty risk, we measure the fair value of a group of financial assets and financial liabilities on the basis of the price that would be received to sell a net long position or transfer a net short position for a particular risk exposure in an orderly transaction between market participants at the measurement date under current market conditions. In regard to our own credit risk component, we adjust the valuation of derivative liabilities wherein the counterparty is exposed to our credit risk when the LIBOR-based valuation of our derivatives obtained from pricing sources does not effectively include an adequate credit component for our own credit risk.

Fair values for our embedded derivative in a modified coinsurance arrangement are estimated using internal pricing models and represent the hypothetical value of the duration mismatch of assets and liabilities, interest rate risk, and third party credit risk embedded in the modified coinsurance arrangement.

Certain of our investments do not have readily determinable market prices and/or observable inputs or may at times be affected by the lack of market liquidity. For these securities, we use internally prepared valuations combining matrix pricing with vendor purchased software programs, including valuations based on estimates of future profitability, to estimate the fair value. Additionally, we may obtain prices from independent third-party brokers to aid in establishing valuations for certain of these securities. Key assumptions used by us to determine fair value for these securities include risk-free interest rates, risk premiums, performance of underlying collateral (if any), and other factors involving significant assumptions which may or may not reflect those of an active market.

At December 31, 2016, approximately 9.2 percent of our fixed maturity securities were valued using active trades from TRACE pricing or broker market maker prices for which there was current market activity in that specific security (comparable to receiving one binding quote). The prices obtained were not adjusted, and the assets were classified as Level 1, the highest category of the three-level fair value hierarchy classification wherein inputs are unadjusted and represent quoted prices in active markets for identical assets or liabilities.

The remaining 90.8 percent of our fixed maturity securities were valued based on non-binding quotes or other observable and unobservable inputs, as discussed below.

- Approximately 76.3 percent of our fixed maturity securities were valued based on prices from pricing services that generally use observable inputs such as prices for securities or comparable securities in active markets in their valuation techniques. These assets were classified as Level 2. Level 2 assets or liabilities are those valued using inputs (other than prices included in Level 1) that are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

- Approximately 3.2 percent of our fixed maturity securities were valued based on one or more non-binding broker quotes, if validated by observable market data, or on TRACE prices for identical or similar assets absent current market activity. When only one price is available, it is used if observable inputs and analysis confirms that it is appropriate. These assets, for which we were able to validate the price using other observable market data, were classified as Level 2.

- Approximately 11.3 percent of our fixed maturity securities were valued based on prices of comparable securities, matrix pricing, market models, and/or internal models or were valued based on non-binding quotes with no other observable market data. These assets were classified as either Level 2 or Level 3, with the categorization dependent on whether there was other observable market data. Level 3 is the lowest category of the fair value hierarchy and reflects the judgment of management regarding what market participants would use in pricing assets or liabilities at the measurement date. Financial assets and liabilities categorized as Level 3 are generally those that are valued using unobservable inputs to extrapolate an estimated fair value.

We consider transactions in inactive or disorderly markets to be less representative of fair value. We use all available observable inputs when measuring fair value, but when significant other unobservable inputs and adjustments are necessary, we classify these assets or liabilities as Level 3.

Fair value measurements by input level for financial instruments carried at fair value are as follows:

	December 31, 2016			
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets				
Fixed Maturity Securities				
United States Government and Government Agencies and Authorities	$ 454.2	$ 928.2	$ —	$ 1,382.4
States, Municipalities, and Political Subdivisions	—	2,068.5	89.5	2,158.0
Foreign Governments	—	914.7	—	914.7
Public Utilities	108.5	7,648.9	265.3	8,022.7
Mortgage/Asset-Backed Securities	—	2,230.4	—	2,230.4
All Other Corporate Bonds	3,507.1	24,500.4	1,459.7	29,467.2
Redeemable Preferred Stocks	—	18.7	23.2	41.9
Total Fixed Maturity Securities	4,069.8	38,309.8	1,837.7	44,217.3
Other Long-term Investments				
Derivatives				
Foreign Exchange Contracts	—	32.7	—	32.7
Equity Securities	—	—	1.2	1.2
Liabilities				
Other Liabilities				
Derivatives				
Interest Rate Swaps	$ —	$ 7.6	$ —	$ 7.6
Foreign Exchange Contracts	—	44.8	—	44.8
Credit Default Swaps	—	0.4	—	0.4
Embedded Derivative in Modified Coinsurance Arrangement	—	—	46.7	46.7
Total Derivatives	—	52.8	46.7	99.5

(in millions of dollars)	December 31, 2015 Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets				
Fixed Maturity Securities				
United States Government and				
Government Agencies and Authorities	$ 97.3	$ 1,367.9	$ —	$ 1,465.2
States, Municipalities, and Political Subdivisions	—	1,994.9	122.2	2,117.1
Foreign Governments	—	998.7	52.9	1,051.6
Public Utilities	59.1	7,687.2	274.1	8,020.4
Mortgage/Asset-Backed Securities	—	2,481.5	—	2,481.5
All Other Corporate Bonds	2,770.4	23,992.8	1,408.2	28,171.4
Redeemable Preferred Stocks	—	23.4	23.8	47.2
Total Fixed Maturity Securities	2,926.8	38,546.4	1,881.2	43,354.4
Other Long-term Investments				
Derivatives				
Interest Rate Swaps	—	2.4	—	2.4
Foreign Exchange Contracts	—	47.4	—	47.4
Total Derivatives	—	49.8	—	49.8
Equity Securities	—	—	1.4	1.4
Liabilities				
Other Liabilities				
Derivatives				
Interest Rate Swaps	$ —	$ 12.3	$ —	$ 12.3
Foreign Exchange Contracts	—	37.6	—	37.6
Credit Default Swaps	—	0.3	—	0.3
Embedded Derivative in				
Modified Coinsurance Arrangement	—	—	87.6	87.6
Total Derivatives	—	50.2	87.6	137.8

Transfers of assets between Level 1 and Level 2 are as follows:

	Year Ended December 31			
	2016		2015	
	Transfers into			
(in millions of dollars)	Level 1 from Level 2	Level 2 from Level 1	Level 1 from Level 2	Level 2 from Level 1
Fixed Maturity Securities				
United States Government and Government Agencies and Authorities	$ 200.0	$ —	$ —	$ 195.3
Public Utilities	65.9	59.1	7.3	85.1
All Other Corporate Bonds	1,889.0	1,860.3	1,369.2	1,556.7
Total Fixed Maturity Securities	$2,154.9	$1,919.4	$1,376.5	$1,837.1

Transfers between Level 1 and Level 2 occurred due to the change in availability of either a TRACE or broker market maker price. Depending on current market conditions, the availability of these Level 1 prices can vary from period to period. For fair value measurements of financial instruments that were transferred either into or out of Level 1 or 2, we reflect the transfers using the fair value at the beginning of the period.

Changes in assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) are as follows:

	Year Ended December 31, 2016							
		Total Realized and Unrealized Investment Gains (Losses) Included in						
(in millions of dollars)	Beginning of Year	Earnings	Other Comprehensive Income or Loss	Purchases	Sales	Level 3 Transfers Into	Level 3 Transfers Out of	End of Year
Fixed Maturity Securities								
States, Municipalities, and Political Subdivisions	$ 122.2	$ —	$ 1.9	$ —	$ (0.5)	$ —	$ (34.1)	$ 89.5
Foreign Governments	52.9	—	—	—	—	—	(52.9)	—
Public Utilities	274.1	—	(0.8)	—	(3.7)	157.6	(161.9)	265.3
All Other Corporate Bonds	1,408.2	1.4	6.9	115.9	(111.2)	792.8	(754.3)	1,459.7
Redeemable Preferred Stocks	23.8	—	(0.6)	—	—	—	—	23.2
Total Fixed Maturity Securities	1,881.2	1.4	7.4	115.9	(115.4)	950.4	(1,003.2)	1,837.7
Equity Securities	1.4	—	0.1	—	(0.3)	—	—	1.2
Embedded Derivative in Modified Coinsurance Arrangement	(87.6)	40.9	—	—	—	—	—	(46.7)

(in millions of dollars)	Year Ended December 31, 2015							
	Beginning of Year	Total Realized and Unrealized Investment Gains (Losses) Included in Earnings	Total Realized and Unrealized Investment Gains (Losses) Included in Other Comprehensive Income or Loss	Purchases	Sales	Level 3 Transfers Into	Level 3 Transfers Out of	End of Year
Fixed Maturity Securities								
States, Municipalities, and Political Subdivisions	$ 140.1	$ (0.1)	$ (5.3)	$ 12.0	$ (16.5)	$ —	$ (8.0)	$ 122.2
Foreign Governments	69.3	—	(1.4)	—	(15.0)	—	—	52.9
Public Utilities	315.0	—	(6.9)	40.0	(2.4)	118.5	(190.1)	274.1
All Other Corporate Bonds	1,425.3	(7.0)	(113.2)	55.3	(220.8)	810.2	(541.6)	1,408.2
Redeemable Preferred Stocks	24.9	—	(1.1)	—	—	—	—	23.8
Total Fixed Maturity Securities	1,974.6	(7.1)	(127.9)	107.3	(254.7)	928.7	(739.7)	1,881.2
Equity Securities	1.4	—	—	—	—	—	—	1.4
Embedded Derivative in Modified Coinsurance Arrangement	(49.9)	(37.7)	—	—	—	—	—	(87.6)

Realized and unrealized investment gains and losses presented in the preceding tables represent gains and losses only for the time during which the applicable financial instruments were classified as Level 3. The transfers between levels resulted primarily from a change in observability of three inputs used to determine fair values of the securities transferred: (1) transactional data for new issuance and secondary trades, (2) broker/dealer quotes and pricing, primarily related to changes in the level of activity in the market and whether the market was considered orderly, and (3) comparable bond metrics from which to perform an analysis. For fair value measurements of financial instruments that were transferred either into or out of Level 3, we reflect the transfers using the fair value at the beginning of the period. We believe this allows for greater transparency, as all changes in fair value that arise during the reporting period of the transfer are disclosed as a component of our Level 3 reconciliation. Gains (losses) which are included in earnings and are attributable to the change in fair value of assets or liabilities valued using significant unobservable inputs and still held at each year end were $40.9 million and $(37.7) million for the years ended December 31, 2016 and 2015, respectively. These amounts relate entirely to the change in fair value of an embedded derivative in a modified coinsurance arrangement and are reported as a component of realized investment gains and losses.

The table below provides quantitative information regarding the significant unobservable inputs used in Level 3 fair value measurements derived from internal models. Certain securities classified as Level 3 are excluded from the table below due to limitations in our ability to obtain the underlying inputs used by external pricing sources.

	December 31, 2016		
(in millions of dollars)	Fair Value	Unobservable Input	Range/Weighted Average
Fixed Maturity Securities			
All Other Corporate Bonds — Private	$310.4	Comparability Adjustment	(b) 0.50%–0.50%/0.50%
		Discount for Size	(c) 0.50%–0.50%/0.50%
		Lack of Marketability	(d) 0.20%–0.25%/0.23%
		Volatility of Credit	(e) 0.20%–6.04%/0.70%
		Market Convention	(f) Priced at Par
Equity Securities — Private	1.1	Market Convention	(f) Priced at Cost or Owner's Equity
Embedded Derivative in Modified Coinsurance Arrangement	(46.7)	Projected Liability Cash Flows	(g) Actuarial Assumptions

	December 31, 2015		
(in millions of dollars)	Fair Value	Unobservable Input	Range/Weighted Average
Fixed Maturity Securities			
States, Municipalities, and Political Subdivisions — Private	$ 73.3	Change in Benchmark Reference	(a) 0.50%–1.00%/0.70%
States, Municipalities, and Political Subdivisions — Public	12.0	Market Convention	(f) Priced at Par
All Other Corporate Bonds — Private	151.0	Comparability Adjustment	(b) 0.50%–0.50%/0.50%
		Discount for Size	(c) 0.50%–0.50%/0.50%
		Lack of Marketability	(d) 1.00%–2.00%/1.75%
		Volatility of Credit	(e) 0.25%–5.56%/0.94%
		Market Convention	(f) Priced at Par
All Other Corporate Bonds — Public	36.2	Lack of Marketability	(d) 1.00%–1.00%/1.00%
Equity Securities — Private	1.1	Market Convention	(f) Priced at Cost or Owner's Equity
Embedded Derivative in Modified Coinsurance Arrangement	(87.6)	Projected Liability Cash Flows	(g) Actuarial Assumptions

(a) Represents basis point adjustments for changes in benchmark spreads associated with various ratings categories
(b) Represents basis point adjustments for changes in benchmark spreads associated with various industry sectors
(c) Represents basis point adjustments based on issue/issuer size relative to the benchmark
(d) Represents basis point adjustments to apply a discount due to the illiquidity of an investment
(e) Represents basis point adjustments for credit-specific factors
(f) Represents a decision to price based on par value, cost, or owner's equity when limited data is available
(g) Represents various actuarial assumptions required to derive the liability cash flows including incidence, termination, and lapse rates

Isolated increases in unobservable inputs other than market convention will result in a lower fair value measurement, whereas isolated decreases will result in a higher fair value measurement. The unobservable input for market convention is not sensitive to input movements. The projected liability cash flows used in the fair value measurement of our Level 3 embedded derivative are based on expected claim payments. If claim payments increase, the projected liability cash flows will increase, resulting in a decrease in the fair value of the embedded derivative. Decreases in projected liability cash flows will result in an increase in the fair value of the embedded derivative.

Note 3. Investments

Fixed Maturity Securities

At December 31, 2016 and 2015, all fixed maturity securities were classified as available-for-sale. The amortized cost and fair values of securities by security type are shown as follows:

	December 31, 2016			
(in millions of dollars)	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
United States Government and Government Agencies and Authorities	$ 1,202.8	$ 183.1	$ 3.5	$ 1,382.4
States, Municipalities, and Political Subdivisions	1,868.0	294.8	4.8	2,158.0
Foreign Governments	714.8	199.9	—	914.7
Public Utilities	6,916.1	1,123.5	16.9	8,022.7
Mortgage/Asset-Backed Securities	2,104.9	134.7	9.2	2,230.4
All Other Corporate Bonds	26,707.1	2,944.0	183.9	29,467.2
Redeemable Preferred Stocks	39.0	3.2	0.3	41.9
Total Fixed Maturity Securities	$39,552.7	$4,883.2	$218.6	$44,217.3

	December 31, 2015			
(in millions of dollars)	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
United States Government and Government Agencies and Authorities	$ 1,265.8	$ 207.3	$ 7.9	$ 1,465.2
States, Municipalities, and Political Subdivisions	1,828.3	293.4	4.6	2,117.1
Foreign Governments	897.2	154.4	—	1,051.6
Public Utilities	6,979.3	1,057.4	16.3	8,020.4
Mortgage/Asset-Backed Securities	2,318.6	167.6	4.7	2,481.5
All Other Corporate Bonds	26,325.5	2,454.1	608.2	28,171.4
Redeemable Preferred Stocks	44.0	3.8	0.6	47.2
Total Fixed Maturity Securities	$39,658.7	$4,338.0	$642.3	$43,354.4

The following charts indicate the length of time our fixed maturity securities have been in a gross unrealized loss position.

	December 31, 2016			
	Less Than 12 Months		12 Months or Greater	
(in millions of dollars)	Fair Value	Gross Unrealized Loss	Fair Value	Gross Unrealized Loss
United States Government and Government Agencies and Authorities	$ 132.8	$ 3.5	$ —	$ —
States, Municipalities, and Political Subdivisions	132.2	4.8	—	—
Public Utilities	260.2	15.3	15.6	1.6
Mortgage/Asset-Backed Securities	513.2	9.1	0.8	0.1
All Other Corporate Bonds	3,621.0	122.1	774.7	61.8
Redeemable Preferred Stocks	7.9	0.1	10.8	0.2
Total Fixed Maturity Securities	$4,667.3	$154.9	$801.9	$63.7

	December 31, 2015			
	Less Than 12 Months		12 Months or Greater	
(in millions of dollars)	Fair Value	Gross Unrealized Loss	Fair Value	Gross Unrealized Loss
United States Government and Government Agencies and Authorities	$ 213.5	$ 7.9	$ —	$ —
States, Municipalities, and Political Subdivisions	112.3	4.3	3.3	0.3
Public Utilities	408.4	14.4	10.3	1.9
Mortgage/Asset-Backed Securities	504.3	4.6	9.0	0.1
All Other Corporate Bonds	6,155.0	464.2	554.7	144.0
Redeemable Preferred Stocks	10.4	0.6	—	—
Total Fixed Maturity Securities	$7,403.9	$496.0	$577.3	$146.3

The following is a distribution of the maturity dates for fixed maturity securities. The maturity dates have not been adjusted for possible calls or prepayments.

	December 31, 2016				
	Total Amortized Cost	Unrealized Gain Position		Unrealized Loss Position	
(in millions of dollars)		Gross Gain	Fair Value	Gross Loss	Fair Value
1 year or less	$ 1,338.8	$ 28.6	$ 1,355.6	$ —	$ 11.8
Over 1 year through 5 years	6,231.0	553.5	6,605.6	8.2	170.7
Over 5 years through 10 years	10,991.6	843.8	9,336.2	82.8	2,416.4
Over 10 years	18,886.4	3,322.6	19,734.3	118.4	2,356.3
	37,447.8	4,748.5	37,031.7	209.4	4,955.2
Mortgage/Asset-Backed Securities	2,104.9	134.7	1,716.4	9.2	514.0
Total Fixed Maturity Securities	$39,552.7	$4,883.2	$38,748.1	$218.6	$5,469.2

	December 31, 2015				
	Total Amortized Cost	Unrealized Gain Position		Unrealized Loss Position	
(in millions of dollars)		Gross Gain	Fair Value	Gross Loss	Fair Value
1 year or less	$ 1,112.2	$ 20.6	$ 1,098.8	$ 0.2	$ 33.8
Over 1 year through 5 years	6,514.0	554.4	6,649.5	49.8	369.1
Over 5 years through 10 years	10,519.3	746.3	7,124.4	320.5	3,820.7
Over 10 years	19,194.6	2,849.1	18,532.3	267.1	3,244.3
	37,340.1	4,170.4	33,405.0	637.6	7,467.9
Mortgage/Asset-Backed Securities	2,318.6	167.6	1,968.2	4.7	513.3
Total Fixed Maturity Securities	$39,658.7	$4,338.0	$35,373.2	$642.3	$7,981.2

At December 31, 2016, the fair value of investment-grade fixed maturity securities was $40,819.3 million, with a gross unrealized gain of $4,764.5 million and a gross unrealized loss of $151.8 million. The gross unrealized loss on investment-grade fixed maturity securities was 69.4 percent of the total gross unrealized loss on fixed maturity securities. Unrealized losses on investment-grade fixed maturity securities principally relate to changes in interest rates or changes in market or sector credit spreads which occurred subsequent to the acquisition of the securities.

At December 31, 2016, the fair value of below-investment-grade fixed maturity securities was $3,398.0 million, with a gross unrealized gain of $118.7 million and a gross unrealized loss of $66.8 million. The gross unrealized loss on below-investment-grade fixed maturity securities was 30.6 percent of the total gross unrealized loss on fixed maturity securities. Generally, below-investment-grade fixed maturity securities are more likely to develop credit concerns than investment-grade securities. At December 31, 2016, the unrealized losses in our below-investment-grade fixed maturity securities were generally due to credit spreads in certain industries or sectors and, to a lesser extent, credit concerns related to specific securities. For each specific security in an unrealized loss position, we believe that there are positive factors which mitigate credit concerns and that the securities for which we have not recorded an other-than-temporary impairment will recover in value.

As of December 31, 2016, we held 332 individual investment-grade fixed maturity securities and 69 individual below-investment-grade fixed maturity securities that were in an unrealized loss position, of which 16 investment-grade fixed maturity securities and 37 below-investment-grade fixed maturity securities had been in an unrealized loss position continuously for over one year. Of the 332 individual investment-grade securities in an unrealized loss position, 132 are held in the portfolio acquired through our 2016 purchase of H&J Capital, L.L.C., parent of Starmount Life Insurance Company and AlwaysCare Benefits (which collectively we refer to as Starmount). The fair value of the Starmount portfolio was $38.8 million and had a net unrealized loss of $1.5 million at December 31, 2016. See Note 13.

In determining when a decline in fair value below amortized cost of a fixed maturity security is other than temporary, we evaluate the following factors:

- Whether we expect to recover the entire amortized cost basis of the security
- Whether we intend to sell the security or will be required to sell the security before the recovery of its amortized cost basis
- Whether the security is current as to principal and interest payments
- The significance of the decline in value
- The time period during which there has been a significant decline in value
- Current and future business prospects and trends of earnings
- The valuation of the security's underlying collateral
- Relevant industry conditions and trends relative to their historical cycles
- Market conditions
- Rating agency and governmental actions
- Bid and offering prices and the level of trading activity
- Adverse changes in estimated cash flows for securitized investments
- Changes in fair value subsequent to the balance sheet date
- Any other key measures for the related security

While determining other-than-temporary impairments is a judgmental area, we utilize a formal, well-defined, and disciplined process to monitor and evaluate our fixed income investment portfolio, supported by issuer specific research and documentation as of the end of each period. The process results in a thorough evaluation of problem investments and the recording of losses on a timely basis for investments determined to have an other-than-temporary impairment.

We held no fixed maturity securities as of December 31, 2016 and 2015, for which a portion of an other-than-temporary impairment was recognized in accumulated other comprehensive income.

At December 31, 2016, we had commitments of $30.0 million to fund private placement fixed maturity securities, the amount of which may or may not be funded.

Variable Interest Entities

We invest in variable interests issued by variable interest entities. These investments include tax credit partnerships, private equity partnerships, and special purpose entities. For those variable interests that are not consolidated in our financial statements, we are not the primary beneficiary because we have neither the power to direct the activities that are most significant to economic performance nor the responsibility to absorb a majority of the expected losses. The determination of whether we are the primary beneficiary is performed at the time of our initial investment and at the date of each subsequent reporting period.

As of December 31, 2016, the carrying amount of our variable interest entity investments that are not consolidated in our financial statements was $509.3 million, comprised of $165.2 million of tax credit partnerships and $344.1 million of private equity partnerships. These variable interest entity investments are reported as other long-term investments in our consolidated balance sheets.

The Company invests in tax credit partnerships primarily for the receipt of income tax credits and tax benefits derived from passive losses on the investments. Amounts recognized in the consolidated statements of income are as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Income Tax Credits	$ 41.8	$ 41.8	$ 41.8
Amortization, Net of Tax	(23.2)	(23.3)	(23.2)
Income Tax Benefit	$ 18.6	$ 18.5	$ 18.6

Contractually, we are a limited partner in these tax credit partnerships, and our maximum exposure to loss is limited to the carrying value of our investment, which includes $4.6 million of unfunded unconditional commitments at December 31, 2016. At December 31, 2016, we also have unfunded unconditional commitments of $0.4 million to fund certain private equity partnerships as well as commitments of $251.9 million, the amount of which may or may not be funded.

We are the sole beneficiary of a special purpose entity which is consolidated in our financial statements. This entity is a securitized asset trust containing a highly rated bond for principal protection and a private equity partnership investment which we contributed into the trust at the time it was established. There are no restrictions on the assets held in this trust, and the trust is free to dispose of the assets at any time. The fair values of the bond and partnership were $151.9 million and $1.0 million, respectively, as of December 31, 2016 and $148.0 million and $0.9 million, respectively, as of December 31, 2015. The bond is reported as a component of fixed maturity securities, and the partnership is reported as a component of other long-term investments in our consolidated balance sheets. At December 31, 2016, we had no commitments to fund the underlying partnership, nor did we fund any amounts to the partnership during the years ended December 31, 2016, 2015, and 2014.

Mortgage Loans

Our mortgage loan portfolio is well diversified by both geographic region and property type to reduce risk of concentration. All of our mortgage loans are collateralized by commercial real estate. When issuing a new loan, our general policy is not to exceed a loan-to-value ratio, or the ratio of the loan balance to the estimated fair value of the underlying collateral, of 75 percent. We update the loan-to-value ratios at least every three years for each loan, and properties undergo a general inspection at least every two years. Our general policy for newly issued loans is to have a debt service coverage ratio greater than 1.25 times on a normalized 25 year amortization period. We update our debt service coverage ratios annually.

Mortgage loans by property type and geographic region are presented below.

	December 31			
	2016		2015	
(in millions of dollars)	Carrying Amount	Percent of Total	Carrying Amount	Percent of Total
Property Type				
Apartment	$ 288.4	14.1%	$ 130.6	6.9%
Industrial	573.6	28.1	574.1	30.5
Office	700.1	34.4	764.7	40.6
Retail	455.4	22.4	392.3	20.8
Other	21.4	1.0	21.9	1.2
Total	$2,038.9	100.0%	$1,883.6	100.0%
Region				
New England	$ 72.7	3.6%	$ 97.6	5.2%
Mid-Atlantic	125.3	6.1	128.8	6.9
East North Central	230.1	11.3	186.4	9.9
West North Central	172.0	8.4	162.6	8.6
South Atlantic	438.3	21.5	409.3	21.7
East South Central	91.6	4.5	79.1	4.2
West South Central	268.7	13.2	237.6	12.6
Mountain	214.1	10.5	196.5	10.4
Pacific	426.1	20.9	385.7	20.5
Total	$2,038.9	100.0%	$1,883.6	100.0%

We evaluate each of our mortgage loans individually for impairment and assign an internal credit quality rating based on a comprehensive rating system used to evaluate the credit risk of the loan. The factors we use to derive our internal credit ratings may include the following:

- Loan-to-value ratio
- Debt service coverage ratio based on current operating income
- Property location, including regional economics, trends and demographics
- Age, condition, and construction quality of property
- Current and historical occupancy of property
- Lease terms relative to market
- Tenant size and financial strength
- Borrower's financial strength
- Borrower's equity in transaction
- Additional collateral, if any

Although all available and applicable factors are considered in our analysis, loan-to-value and debt service coverage ratios are the most critical factors in determining whether we will initially issue the loan and also in assigning values and determining impairment. We assign an overall rating to each loan using an internal rating scale of Aa (highest quality) to B (lowest quality). We review and adjust, as needed, our internal credit quality ratings on an annual basis. This review process is performed more frequently for mortgage loans deemed to have a higher risk of delinquency.

Mortgage loans, sorted by the applicable credit quality indicators, are as follows:

	December 31	
(in millions of dollars)	2016	2015
Internal Rating		
Aa	$ 0.7	$ 1.1
A	488.2	586.6
Baa	1,506.6	1,285.8
Ba	43.4	10.1
Total	$2,038.9	$1,883.6
Loan-to-Value Ratio		
<= 65%	$ 917.9	$ 937.2
> 65% <= 75%	1,011.5	842.5
> 75% <= 85%	50.8	88.4
> 85%	58.7	15.5
Total	$2,038.9	$1,883.6

A summary of our troubled debt restructurings is as follows:

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Foreclosure			
Carrying Amount	$5.4	$—	$18.1
Number of Loans	1	—	1

We had no realized losses on loan foreclosures for the years ended December 31, 2016, 2015, and 2014 other than any initial impairment loss recognized prior to foreclosure. During 2016, we foreclosed on a mortgage loan with a carrying value of $5.4 million. We did not recognize a loss at foreclosure as the value of the underlying property exceeded the carrying value of the loan. During 2014, we modified the terms of a mortgage loan with a carrying value of $18.1 million, recognized a $3.0 million realized loss on the troubled debt restructuring, and foreclosed on the property in a subsequent quarter of 2014.

At December 31, 2016 and 2015, we held no mortgage loans that were greater than 90 days past due regarding principal and/or interest payments.

There have been no changes to our accounting policies or methodology from the prior period regarding estimating the allowance for credit losses on our mortgage loans. The activity in the allowance for credit losses is as follows:

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Balance at Beginning of Year	$—	$ 1.5	$ 1.5
Provision	—	0.5	3.0
Charge-offs, Net of Recoveries	—	(2.0)	(3.0)
Balance at End of Year	$—	$ —	$ 1.5

At December 31, 2014, we held one impaired mortgage loan with an unpaid principal balance of $14.6 million, a related allowance for credit losses of $1.5 million, and a carrying value of $13.1 million. During 2015, we increased the allowance for credit losses for the impaired loan by $0.5 million and recognized a corresponding investment loss. The loan was repaid in a subsequent quarter of 2015, with an additional de minimis loss recognized at repayment.

Our average investment in impaired mortgage loans was $2.2 million, $8.6 million, and $26.7 million for the years ended December 31, 2016, 2015, and 2014, respectively. Interest income recognized on mortgage loans subsequent to impairment was $0.6 million and $1.0 million, for the years ended December 31, 2015 and 2014, respectively. We did not recognize any interest income during 2016 on mortgage loans subsequent to impairment.

At December 31, 2016, we had commitments of $32.1 million to fund certain commercial mortgage loans, the amount of which may or may not be funded.

Transfers of Financial Assets

To manage our cash position more efficiently, we may enter into repurchase agreements with unaffiliated financial institutions. We generally use repurchase agreements as a means to finance the purchase of invested assets or for short-term general business purposes until projected cash flows become available from our operations or existing investments. Our repurchase agreements are typically outstanding for less than 30 days. We post collateral through our repurchase agreement transactions whereby the counterparty commits to purchase securities with the agreement to resell them to us at a later, specified date. The fair value of collateral posted is generally 102 percent of the cash received.

Our investment policy also permits us to lend fixed maturity securities to unaffiliated financial institutions in short-term securities lending agreements. These agreements increase our investment income with minimal risk. Our securities lending policy requires that a minimum of 102 percent of the fair value of the securities loaned be maintained as collateral. We may receive cash and/or securities as collateral under these agreements. Cash received as collateral is typically reinvested in short-term investments. If securities are received as collateral, we are not permitted to sell or re-post them.

As of December 31, 2016, the carrying amount of fixed maturity securities loaned to third parties under our securities lending program was $178.5 million, for which we received collateral in the form of cash and securities of $29.9 million and $155.3 million, respectively. As of December 31, 2015, the carrying amount of fixed maturity securities loaned to third parties under our securities lending program was $181.6 million, for which we received collateral in the form of cash and securities of $29.0 million and $159.3 million, respectively. We had no outstanding repurchase agreements at December 31, 2016 or 2015.

The remaining contractual maturities of our securities lending agreements disaggregated by class of collateral pledged are as follows:

	December 31	
	2016	2015
(in millions of dollars)	Overnight and Continuous	
United States Government and Government Agencies and Authorities	$ 0.1	$ 1.2
Public Utilities	0.1	4.0
All Other Corporate Bonds	29.7	23.8
Total Borrowings	29.9	29.0
Gross Amount of Recognized Liability for Securities Lending Transactions	29.9	29.0
Amounts Related to Agreements Not Included in Offsetting Disclosure Contained Herein	$ —	$ —

Certain of our U.S. insurance subsidiaries are members of regional FHLBs. Membership, which requires that we purchase a minimum amount of FHLB common stock on which we receive dividends, provides access to low-cost funding. As of December 31, 2016 and 2015, we owned $31.6 million and $30.9 million of FHLB common stock, respectively. Advances from the regional FHLBs for the purpose of purchasing fixed maturity securities totaled $350.0 million as of December 31, 2016 and 2015. The carrying values of fixed maturity securities and commercial mortgage loans posted as collateral to the regional FHLBs were $323.7 million and $288.5 million, respectively as of December 31, 2016, and $317.2 million and $96.0 million, respectively as of December 31, 2015. Additional common stock purchases may be required, based on the amount of funds we borrow from the FHLBs.

Offsetting of Financial Instruments

We enter into master netting agreements with each of our derivatives counterparties. These agreements provide for conditional rights of set-off upon the occurrence of an early termination event. An early termination event is considered a default, and it allows the non-defaulting party to offset its contracts in a loss position against any gain positions or payments due to the defaulting party. Under our agreements, default type events are defined as failure to pay or deliver as contractually agreed, misrepresentation, bankruptcy, or merger without assumption. See Note 4 for further discussion of collateral related to our derivative contracts.

We have securities lending agreements with unaffiliated financial institutions that post collateral to us in return for the use of our fixed maturity securities. A right of set-off exists that allows us to keep and apply collateral received in the event of default by the counterparty. Default within a securities lending agreement would typically occur if the counterparty failed to return the securities borrowed from us as contractually agreed. In addition, if we default by not returning collateral received, the counterparty has a right of set-off against our securities or any other amounts due to us.

Shown below are our financial instruments that either meet the accounting requirements that allow them to be offset in our balance sheets or that are subject to an enforceable master netting arrangement or similar agreement. Our accounting policy is to not offset these financial instruments in our balance sheets. Net amounts disclosed below have been reduced by the amount of collateral pledged to or received from our counterparties.

	December 31, 2016					
	Gross Amount of Recognized Financial	Gross Amount Offset in	Net Amount Presented in	Gross Amount Not Offset in Balance Sheet		
(in millions of dollars)	Instruments	Balance Sheet	Balance Sheet	Financial Instruments	Cash Collateral	Net Amount
Financial Assets:						
Derivatives	$ 32.7	$—	$ 32.7	$ (7.3)	$(25.4)	$ —
Securities Lending	178.5	—	178.5	(148.6)	(29.9)	—
Total	$211.2	$—	$211.2	$(155.9)	$(55.3)	$ —
Financial Liabilities:						
Derivatives	$ 52.8	$—	$ 52.8	$ (37.6)	$ —	$15.2
Securities Lending	29.9	—	29.9	(29.9)	—	—
Total	$ 82.7	$—	$ 82.7	$ (67.5)	$ —	$15.2

	December 31, 2015					
	Gross Amount of Recognized Financial	Gross Amount Offset in	Net Amount Presented in	Gross Amount Not Offset in Balance Sheet		
(in millions of dollars)	Instruments	Balance Sheet	Balance Sheet	Financial Instruments	Cash Collateral	Net Amount
Financial Assets:						
Derivatives	$ 49.8	$—	$ 49.8	$ (12.8)	$(36.4)	$ 0.6
Securities Lending	181.6	—	181.6	(152.6)	(29.0)	—
Total	$231.4	$—	$231.4	$(165.4)	$(65.4)	$ 0.6
Financial Liabilities:						
Derivatives	$ 50.2	$—	$ 50.2	$ (35.6)	$ —	$14.6
Securities Lending	29.0	—	29.0	(29.0)	—	—
Total	$ 79.2	$—	$ 79.2	$ (64.6)	$ —	$14.6

Net Investment Income

Net investment income reported in our consolidated statements of income is as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Fixed Maturity Securities	$2,293.9	$2,327.1	$2,344.4
Derivatives	49.8	44.2	40.4
Mortgage Loans	114.0	114.0	109.8
Policy Loans	17.3	16.7	16.3
Other Long-term Investments	22.6	21.6	23.0
Short-term Investments	7.5	3.4	2.4
Gross Investment Income	2,505.1	2,527.0	2,536.3
Less Investment Expenses	31.9	31.2	29.0
Less Investment Income on Participation Fund Account Assets	14.2	14.6	15.1
Net Investment Income	$2,459.0	$2,481.2	$2,492.2

Realized Investment Gain and Loss

Realized investment gains and losses are as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Fixed Maturity Securities			
Gross Gains on Sales	$ 34.3	$ 23.8	$ 9.3
Gross Losses on Sales	(17.2)	(25.6)	(7.5)
Other-Than-Temporary Impairment Loss	(30.5)	(32.4)	(13.5)
Mortgage Loans and Other Invested Assets			
Gross Gains on Sales	5.5	16.0	21.2
Gross Losses on Sales	(0.7)	(0.1)	(0.8)
Impairment Loss	(5.7)	(5.9)	(3.4)
Embedded Derivative in Modified Coinsurance Arrangement	40.9	(37.7)	3.3
All Other Derivatives	(1.5)	35.7	11.0
Foreign Currency Transactions	(0.9)	(17.6)	(3.5)
Net Realized Investment Gain (Loss)	$ 24.2	$(43.8)	$ 16.1

Note 4. Derivative Financial Instruments

Purpose of Derivatives

We are exposed to certain risks relating to our ongoing business operations. The primary risks managed by using derivative instruments are interest rate risk, risk related to matching duration for our assets and liabilities, foreign currency risk, and credit risk. Historically, we have utilized current and forward interest rate swaps, current and forward currency swaps, forward treasury locks, currency forward contracts, forward contracts on specific fixed income securities, and credit default swaps. Transactions hedging interest rate risk are primarily associated with our individual and group long-term care and individual and group disability products. All other product portfolios are periodically reviewed to determine if hedging strategies would be appropriate for risk management purposes. We do not use derivative financial instruments for speculative purposes.

Derivatives designated as cash flow hedges and used to reduce our exposure to interest rate and duration risk are as follows:

- *Interest rate swaps* are used to hedge interest rate risks and to improve the matching of assets and liabilities. An interest rate swap is an agreement in which we agree with other parties to exchange, at specified intervals, the difference between fixed rate and variable rate interest amounts. We use interest rate swaps to hedge the anticipated purchase of fixed maturity securities thereby protecting us from the potential adverse impact of declining interest rates on the associated policy reserves. We also use interest rate swaps to hedge the potential adverse impact of rising interest rates in anticipation of issuing fixed rate long-term debt.
- *Forward treasury locks* are used to minimize interest rate risk associated with the anticipated purchase or disposal of fixed maturity securities. A forward treasury lock is a derivative contract without an initial investment where we and the counterparty agree to purchase or sell a specific U.S. Treasury bond at a future date at a pre-determined price.

Derivatives designated as fair value hedges and used to reduce our exposure to interest rate and duration risk are as follows:

- *Interest rate swaps* are used to effectively convert certain of our fixed rate securities into floating rate securities which are used to fund our floating rate long-term debt. Under these swap agreements, we receive a variable rate of interest and pay a fixed rate of interest. Additionally, we use interest rate swaps to effectively convert certain fixed rate, long-term debt into floating rate long-term debt. Under these swap agreements, we receive a fixed rate of interest and pay a variable rate of interest.

Derivatives designated as cash flow hedges and used to reduce our exposure to foreign currency risk are as follows:

- *Foreign currency interest rate swaps* have historically been used to hedge the currency risk of certain foreign currency-denominated fixed maturity securities owned for portfolio diversification and to hedge the currency risk associated with certain of the principal and interest payments of the U.S. dollar-denominated debt issued by one of our U.K. subsidiaries. For hedges of fixed maturity securities, we agree to pay, at specified intervals, fixed rate foreign currency-denominated principal and interest payments in exchange for fixed rate payments in the functional currency of the operating segment. For hedges of debt issued, we paid, at specified intervals, fixed rate foreign currency-denominated principal and interest payments to the counterparty in exchange for fixed rate U.S. dollar-denominated principal and interest payments.

Derivatives not designated as hedging instruments and used to reduce our exposure to foreign currency risk, credit losses on securities owned, and interest rate risk are as follows:

- *Foreign currency interest rate swaps* previously designated as hedges were used to hedge the currency risk of certain foreign currency-denominated fixed maturity securities owned for portfolio diversification. We agree to pay, at specified intervals, fixed rate foreign currency-denominated principal and interest payments in exchange for fixed rate payments in the functional currency of the operating segment. We hold offsetting swaps wherein we agree to pay fixed rate principal and interest payments in the functional currency of the operating segment in exchange for fixed rate foreign currency-denominated payments.
- *Credit default swaps* are used as economic hedges against credit risk but do not qualify for hedge accounting. A credit default swap is an agreement in which we agree with another party to pay, at specified intervals, a fixed-rate fee in exchange for insurance against a credit event on a specific investment. If a defined credit event occurs, our counterparty may either pay us a net cash settlement, or we may surrender the specific investment to them in exchange for cash equal to the full notional amount of the swap. Credit events typically include events such as bankruptcy, failure to pay, or certain types of debt restructuring.
- *Interest rate swap* is used to effectively convert certain of our floating rate, long-term debt into fixed rate long-term debt. Under this swap agreement, we receive a variable rate of interest and pay a fixed rate of interest.

Derivative Risks

The basic types of risks associated with derivatives are market risk (that the value of the derivative will be adversely impacted by changes in the market, primarily the change in interest and exchange rates) and credit risk (that the counterparty will not perform according to the terms of the contract). The market risk of the derivatives should generally offset the market risk associated with the hedged financial instrument or liability. To help limit the credit exposure of the derivatives, we enter into master netting agreements with our counterparties whereby contracts in a gain position can be offset against contracts in a loss position. We also typically enter into bilateral, cross-collateralization agreements with our counterparties to help limit the credit exposure of the derivatives. These agreements require the counterparty in a loss position to submit acceptable collateral with the other counterparty in the event the net loss position meets or exceeds an agreed upon amount. Our current credit exposure on derivatives, which is limited to the value of those contracts in a net gain position, including accrued interest receivable less collateral held, was $0.8 million at December 31, 2016. We held cash collateral from our counterparties of $26.1 million and $36.4 million at December 31, 2016 and 2015, respectively. We post either fixed maturity securities or cash as collateral to our counterparties. The carrying value of fixed maturity securities posted as collateral to our counterparties was $35.2 million and $27.3 million at December 31, 2016 and 2015, respectively. We had no cash posted as collateral to our counterparties at December 31, 2016 and 2015. See Note 3 for further discussion of our master netting agreements.

The majority of our derivative instruments contain provisions that require us to maintain specified issuer credit ratings and financial strength ratings. Should our ratings fall below these specified levels, we would be in violation of the provisions, and our derivatives counterparties could terminate our contracts and request immediate payment. The aggregate fair value of all derivative instruments with credit risk-related contingent features that were in a liability position was $52.8 million and $50.2 million at December 31, 2016 and 2015, respectively.

Derivative Transactions

The table below summarizes, by notional amounts, the activity for each category of derivatives. The notional amounts represent the basis upon which our counterparty pay and receive amounts are calculated.

	Swaps					
(in millions of dollars)	Receive Variable/Pay Fixed	Receive Fixed/Pay Fixed	Receive Fixed/Pay Variable	Credit Default	Forwards	Total
Balance at December 31, 2013	$150.0	$630.4	$600.0	$97.0	$ —	$1,477.4
Additions	—	250.1	—	—	68.0	318.1
Terminations	—	40.1	—	—	68.0	108.1
Balance at December 31, 2014	150.0	840.4	600.0	97.0	—	1,687.4
Additions	—	—	—	2.0	94.0	96.0
Terminations	—	190.1	—	29.0	94.0	313.1
Balance at December 31, 2015	150.0	650.3	600.0	70.0	—	1,470.3
Additions	3.5	—	—	—	30.0	33.5
Terminations	48.0	33.8	350.0	—	20.0	451.8
Balance at December 31, 2016	$105.5	$616.5	$250.0	$70.0	$10.0	$1,052.0

Cash Flow Hedges

As of December 31, 2016 and 2015, we had $394.1 million and $427.9 million, respectively, notional amount of receive fixed, pay fixed, open current and forward foreign currency interest rate swaps to hedge fixed income foreign currency-denominated securities.

During the fourth quarter of 2015, the remaining principal balance of the U.S. dollar-denominated debt issued by one of our U.K. subsidiaries matured, at which time we terminated the related foreign currency swaps with a notional amount of $150.0 million and reclassified the cash flow hedge gain of $8.2 million from accumulated other comprehensive income to realized investment gain in our consolidated statements of income. We also reclassified the remaining deferred cash flow hedge gain of $27.7 million from previously terminated derivatives associated with the hedge of this debt from accumulated other comprehensive income to realized investment gain. During 2014, we redeemed a portion of this debt and reclassified $13.1 million, the applicable portion of the deferred gain on cash flow hedges from the previously terminated derivatives associated with the hedge of this debt, from accumulated other comprehensive income to realized investment gain in our consolidated statements of income. See Note 8.

During 2014, we novated certain of our foreign currency interest rate swaps with a notional amount of $97.0 million and a fair value of $(29.5) million to a new counterparty. At the time of novation, these derivatives were effective hedges, and we therefore deferred the unrealized loss into other comprehensive income and will recognize the loss in earnings during the periods in which the hedged items affect earnings. In conjunction with the novation, these derivatives were de-designated as hedges, and subsequent changes in their fair value will be reported in earnings as a component of net realized investment gain or loss. To establish a new effective hedging relationship with the fixed income foreign currency denominated securities previously hedged, we entered into $124.7 million notional amount of foreign currency interest rate swaps during 2014 whereby we receive fixed rate functional currency principal and interest in exchange for fixed rate payments in foreign currency.

For the years ended December 31, 2016, 2015, and 2014 there was no material ineffectiveness related to our cash flow hedges, and no component of the derivative instruments' gain or loss was excluded from the assessment of hedge effectiveness.

As of December 31, 2016, we expect to amortize approximately $58.0 million of net deferred gains on derivative instruments during the next twelve months. This amount will be reclassified from accumulated other comprehensive income into earnings and reported on the same income statement line item as the hedged item. The income statement line items that will be affected by this amortization are net investment income and interest and debt expense. Additional amounts that may be reclassified from accumulated other comprehensive income into earnings to offset the earnings impact of foreign currency translation of hedged items are not estimable.

As of December 31, 2016, we are hedging the variability of future cash flows associated with forecasted transactions through the year 2038.

Fair Value Hedges

As of December 31, 2016 and 2015, we had $102.0 million and $150.0 million, respectively, notional amount of receive variable, pay fixed interest rate swaps to hedge the changes in fair value of certain fixed rate securities held. These swaps effectively convert the associated fixed rate securities into floating rate securities, which are used to fund our floating rate long-term debt. The change in fair value of the hedged fixed maturity securities attributable to the hedged benchmark interest rate resulted in a loss of $5.9 million, $5.3 million, and $5.3 million for the years ended December 31, 2016, 2015, and 2014, respectively, with an offsetting gain on the related interest rate swaps. During 2016, we terminated $24.0 million notional amount of receive variable, pay fixed interest rate swaps in connection with the sale of the hedged securities and recorded a loss on the swap terminations of $1.2 million in our consolidated statements of income as a component of net realized investment gains and losses.

As of December 31, 2016 and 2015, we had $250.0 million and $600.0 million, respectively, notional amount of receive fixed, pay variable interest rate swaps to hedge the changes in the fair value of certain fixed rate long-term debt. These swaps effectively convert the associated fixed rate long-term debt into floating rate debt and provide for a better matching of interest rates with our short-term investments, which have frequent interest rate resets similar to a floating rate security. The change in fair value of the hedged debt attributable to the hedged benchmark interest rate resulted in a gain (loss) of $2.8 million, $0.1 million, and $(5.5) million for the years ended December 31, 2016, 2015, and 2014, respectively, with an offsetting gain or loss on the related interest rate swaps. During 2016, $350.0 million notional amount of receive fixed, pay variable interest rate swaps matured in conjunction with the maturity of the $350.0 million hedged fixed rate debt. See Note 8.

For the years ended December 31, 2016, 2015, and 2014, there was no material ineffectiveness related to our fair value hedges, and no component of the derivative instruments' gain or loss was excluded from the assessment of hedge effectiveness. There were no instances wherein we discontinued fair value hedge accounting due to a hedged firm commitment no longer qualifying as a fair value hedge.

Derivatives not Designated as Hedging Instruments

As of December 31, 2016 and 2015, we held $222.4 million notional amount of receive fixed, pay fixed, foreign currency interest rate swaps. During 2014, we entered into $125.4 million notional amount of foreign currency interest rate swaps in conjunction with the previously discussed transaction wherein we de-designated foreign currency interest rate swaps with a notional amount of $97.0 million. These derivatives were not designated as hedges, and as such, changes in fair value related to these derivatives will be reported in earnings as a component of net realized investment gain or loss. We expect the changes in fair value of these derivatives to materially offset the changes in fair value related to the de-designated derivatives.

As of December 31, 2016 and 2015, we held $70.0 million notional amount of single name credit default swaps. We entered into these swaps in order to mitigate the credit risk associated with specific securities owned.

As of December 31, 2016, we held $3.5 million notional amount of a receive variable, pay fixed interest rate swap acquired through our purchase of Starmount during 2016. This swap effectively converts Starmount's floating rate long-term debt of $3.5 million into fixed rate debt. See Note 13.

We have an embedded derivative in a modified coinsurance arrangement for which we include in our realized investment gains and losses a calculation intended to estimate the value of the option of our reinsurance counterparty to cancel the reinsurance contract with us. However, neither party can unilaterally terminate the reinsurance agreement except in extreme circumstances resulting from regulatory supervision, delinquency proceedings, or other direct regulatory action. Cash settlements or collateral related to this embedded derivative are not required at any time during the reinsurance contract or at termination of the reinsurance contract. There are no credit-related counterparty triggers, and any accumulated embedded derivative gain or loss reduces to zero over time as the reinsured business winds down.

Locations and Amounts of Derivative Financial Instruments

The following tables summarize the location and fair values of derivative financial instruments, as reported in our consolidated balance sheets.

	December 31, 2016			
	Asset Derivatives		Liability Derivatives	
(in millions of dollars)	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Designated as Hedging Instruments				
Interest Rate Swaps and Forwards	Other L-T Investments	$ —	Other Liabilities	$ 6.9
Foreign Exchange Contracts	Other L-T Investments	32.7	Other Liabilities	13.4
Total		$32.7		$20.3
Not Designated as Hedging Instruments				
Credit Default Swaps			Other Liabilities	$ 0.4
Interest Rate Swaps			Other Liabilities	0.7
Foreign Exchange Contracts			Other Liabilities	31.4
Embedded Derivative in Modified Coinsurance Arrangement			Other Liabilities	46.7
Total				$79.2

	December 31, 2015			
	Asset Derivatives		Liability Derivatives	
(in millions of dollars)	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Designated as Hedging Instruments				
Interest Rate Swaps	Other L-T Investments	$ 2.4	Other Liabilities	$ 12.3
Foreign Exchange Contracts	Other L-T Investments	47.4	Other Liabilities	6.0
Total		$49.8		$ 18.3
Not Designated as Hedging Instruments				
Credit Default Swaps			Other Liabilities	$ 0.3
Foreign Exchange Contracts			Other Liabilities	31.6
Embedded Derivative in Modified Coinsurance Arrangement			Other Liabilities	87.6
Total				$119.5

The following table summarizes the location of gains and losses on the effective portion of derivative financial instruments designated as cash flow hedging instruments, as reported in our consolidated statements of income and consolidated statements of comprehensive income.

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Gain (Loss) Recognized in Other Comprehensive Income (Loss) on Derivatives			
Interest Rate Swaps and Forwards	$ (0.1)	$ (0.7)	$ (0.1)
Foreign Exchange Contracts	(22.2)	68.1	16.2
Total	$(22.3)	$67.4	$16.1
Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income			
Net Investment Income			
Interest Rate Swaps and Forwards	$ 54.5	$50.2	$47.8
Foreign Exchange Contracts	(1.1)	(1.6)	(4.2)
Net Realized Investment Gain (Loss)			
Interest Rate Swaps	3.2	0.5	4.3
Foreign Exchange Contracts	(1.4)	36.1	6.9
Interest and Debt Expense			
Interest Rate Swaps	(1.9)	(1.8)	(1.8)
Total	$ 53.3	$83.4	$53.0

The following table summarizes the location of gains and losses on our derivatives not designated as hedging instruments, as reported in our consolidated statements of income.

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Net Realized Investment Gain (Loss)			
Credit Default Swaps	$ (0.9)	$ 0.1	$(0.3)
Interest Rate Swaps	0.4	—	—
Foreign Exchange Contracts	0.2	(0.3)	(1.8)
Embedded Derivative in Modified Coinsurance Arrangement	40.9	(37.7)	3.3
Total	$40.6	$(37.9)	$ 1.2

Note 5. Accumulated Other Comprehensive Income (Loss)

(in millions of dollars)	Net Unrealized Gain on Securities	Net Gain on Cash Flow Hedges	Foreign Currency Translation Adjustment	Unrecognized Pension and Postretirement Benefit Costs	Total
Balance at December 31, 2013	$ 135.7	$396.3	$ (47.1)	$(229.9)	$ 255.0
Other Comprehensive Income (Loss) Before Reclassifications	154.3	31.1	(66.3)	(216.1)	(97.0)
Amounts Reclassified from Accumulated Other Comprehensive Income or Loss	0.3	(36.4)	—	44.5	8.4
Net Other Comprehensive Income (Loss)	154.6	(5.3)	(66.3)	(171.6)	(88.6)
Balance at December 31, 2014	290.3	391.0	(113.4)	(401.5)	166.4
Other Comprehensive Income (Loss) Before Reclassifications	(114.7)	43.3	(60.2)	1.3	(130.3)
Amounts Reclassified from Accumulated Other Comprehensive Income or Loss	28.7	(56.3)	—	7.6	(20.0)
Net Other Comprehensive Income (Loss)	(86.0)	(13.0)	(60.2)	8.9	(150.3)
Balance at December 31, 2015	204.3	378.0	(173.6)	(392.6)	16.1
Other Comprehensive Income (Loss) Before Reclassifications	226.5	(15.8)	(180.4)	(82.8)	(52.5)
Amounts Reclassified from Accumulated Other Comprehensive Income or Loss	9.8	(34.7)	—	10.3	(14.6)
Net Other Comprehensive Income (Loss)	236.3	(50.5)	(180.4)	(72.5)	(67.1)
Balance at December 31, 2016	$ 440.6	$327.5	$(354.0)	$(465.1)	$ (51.0)

The net unrealized gain on securities consists of the following components:

	December 31				Change for the Year Ended December 31		
(in millions of dollars)	2016	2015	2014	2013	2016	2015	2014
Fixed Maturity Securities	$ 4,664.6	$ 3,695.7	$ 6,261.5	$ 4,054.8	$ 968.9	$(2,565.8)	$ 2,206.7
Other Investments	(22.7)	(33.7)	13.9	55.5	11.0	(47.6)	(41.6)
Deferred Acquisition Costs	(38.9)	(29.4)	(50.8)	(41.6)	(9.5)	21.4	(9.2)
Reserves for Future Policy and Contract Benefits	(4,253.2)	(3,578.4)	(6,150.3)	(4,108.5)	(674.8)	2,571.9	(2,041.8)
Reinsurance Recoverable	321.3	263.2	365.0	263.8	58.1	(101.8)	101.2
Income Tax	(230.5)	(113.1)	(149.0)	(88.3)	(117.4)	35.9	(60.7)
Total	$ 440.6	$ 204.3	$ 290.3	$ 135.7	$ 236.3	$ (86.0)	$ 154.6

Amounts reclassified from accumulated other comprehensive income (loss) were recognized in our consolidated statements of income as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Net Unrealized Gain on Securities			
Net Realized Investment Gain (Loss)			
Gain (Loss) on Sales of Securities and Other Invested Assets	$ 15.3	$(12.2)	$ 12.6
Other-Than-Temporary Impairment Loss	(30.5)	(32.4)	(13.5)
	(15.2)	(44.6)	(0.9)
Income Tax Benefit	(5.4)	(15.9)	(0.6)
Total	$ (9.8)	$(28.7)	$ (0.3)
Net Gain on Cash Flow Hedges			
Net Investment Income			
Gain on Interest Rate Swaps and Forwards	$ 54.5	$ 50.2	$ 47.8
Loss on Foreign Exchange Contracts	(1.1)	(1.6)	(4.2)
Net Realized Investment Gain (Loss)			
Gain on Interest Rate Swaps	3.2	0.5	4.3
Gain (Loss) on Foreign Exchange Contracts	(1.4)	36.1	6.9
Interest and Debt Expense			
Loss on Interest Rate Swaps	(1.9)	(1.8)	(1.8)
	53.3	83.4	53.0
Income Tax Expense	18.6	27.1	16.6
Total	$ 34.7	$ 56.3	$ 36.4
Unrecognized Pension and Postretirement Benefit Costs			
Other Expenses			
Amortization of Net Actuarial Loss	$(16.3)	$(11.9)	$ (5.6)
Amortization of Prior Service Credit	0.5	0.3	1.7
Settlement Loss	—	—	(64.4)
	(15.8)	(11.6)	(68.3)
Income Tax Benefit	(5.5)	(4.0)	(23.8)
Total	$(10.3)	$ (7.6)	$(44.5)

Note 6. Liability for Unpaid Claims and Claim Adjustment Expenses

Changes in the liability for unpaid claims and claim adjustment expenses are as follows:

(in millions of dollars)	2016	2015	2014
Balance at January 1	$23,796.1	$24,194.0	$24,535.6
Less Reinsurance Recoverable	2,064.6	2,066.9	2,072.8
Net Balance at January 1	21,731.5	22,127.1	22,462.8
Incurred Related to			
Current Year	5,243.0	5,058.1	4,851.5
Prior Years			
Interest	1,136.7	1,177.6	1,214.7
All Other Incurred	(198.3)	(111.6)	(13.5)
Foreign Currency	(340.2)	(119.5)	(138.7)
Total Incurred	5,841.2	6,004.6	5,914.0
Paid Related to			
Current Year	(2,035.4)	(1,853.7)	(1,702.3)
Prior Years	(4,451.4)	(4,546.5)	(4,547.4)
Total Paid	(6,486.8)	(6,400.2)	(6,249.7)
Net Balance at December 31	21,085.9	21,731.5	22,127.1
Plus Reinsurance Recoverable	2,163.6	2,064.6	2,066.9
Balance at December 31	$23,249.5	$23,796.1	$24,194.0

The majority of the net balances are related to disability claims with long-tail payouts on which interest earned on assets backing liabilities is an integral part of pricing and reserving. Interest accrued on prior year reserves has been calculated on the opening reserve balance less one-half year's cash payments at our average reserve discount rate used during 2016, 2015, and 2014.

"Incurred Related to Prior Years — All Other Incurred" for 2014 shown in the preceding chart includes the reserve adjustment as discussed in the following paragraph, which impacts the comparability of 2014 to the other years presented. Excluding that adjustment, the variability exhibited year over year is caused primarily by the level of claim resolutions in the period relative to the long-term expectations reflected in the reserves. Our claim resolution rate assumption used in determining reserves is our expectation of the resolution rate we will experience over the life of the block of business and will vary from actual experience in any one period, both favorably and unfavorably.

2014 Long-term Care Reserve Increase

Policy reserves for our long-term care block of business are determined using the gross premium valuation method and, prior to 2014, were valued based on assumptions established as of December 31, 2011, the date of the initial loss recognition. Gross premium valuation assumptions do not change after the date of loss recognition unless reserves are again determined to be deficient. We undertake a review of policy reserve adequacy annually during the fourth quarter of each year, or more frequently if appropriate, using best estimate assumptions as of the date of the review.

Included in our 2014 review was an analysis of our reserve assumptions, including those for the discount rate, mortality and morbidity rates, persistency, and premium rate increases. Our analysis of reserve discount rate assumptions considered the continued historic low interest rate environment, future market expectations, and our view of future portfolio yields. The assumptions we established in 2011 were set at a level that we estimated would be sustainable in a low interest rate environment for three to five years, with improvements in market yields beginning after the third year. Since that time, however, interest rates had continued to hover near historic lows, and credit spreads had tightened. Our assumption update for mortality incorporated the last three years of Company-specific experience and emerging trends as well as industry data, where available and appropriate, and reflected improvements in life expectancies beyond what was initially anticipated in 2011. Our morbidity assumptions were updated to reflect trends from our own emerging Company experience in claim incidence and terminations, as well as trends based on available and appropriate industry data and studies. Our premium rate increase assumptions were updated to reflect progress-to-date and our on-going rate increase strategy.

Based on our analysis at that time, we lowered the discount rate assumption to reflect the low interest rate environment and our revised expectation of future investment portfolio yield rates. Our revised assumptions anticipated the low interest rate environment persisting for the next three to five years, with a return to more historical averages over the following five year period. We updated our mortality assumptions to reflect emerging experience due to an increase in life expectancies which increases the ultimate number of people who will utilize long-term care benefits and also lengthens the amount of time a claimant may receive long-term care benefits. We changed our morbidity assumptions to reflect emerging industry experience as well as our own Company experience, and we updated our projection of future premium rate increase approvals. Using our revised best estimate assumptions, as of December 31, 2014, we determined that our policy and claim reserves should be increased $698.2 million to reflect our current estimate of future benefit obligations. Of this amount, $85.8 million was related to claim reserves, which can be attributed to prior year incurred claims, thereby impacting the results shown in the preceding chart.

Reconciliation

A reconciliation of policy and contract benefits and reserves for future policy and contract benefits as reported in our consolidated balance sheets to the liability for unpaid claims and claim adjustment expenses is as follows:

	December 31		
(in millions of dollars)	2016	2015	2014
Policy and Contract Benefits	$ 1,507.9	$ 1,484.6	$ 1,529.3
Reserves for Future Policy and Contract Benefits	44,245.9	43,540.6	45,929.4
Total	45,753.8	45,025.2	47,458.7
Less:			
Life Reserves for Future Policy and Contract Benefits	8,078.2	7,946.3	7,850.9
Accident and Health Active Life Reserves	10,172.9	9,704.4	9,263.5
Adjustment Related to Unrealized Investment Gains and Losses	4,253.2	3,578.4	6,150.3
Liability for Unpaid Claims and Claim Adjustment Expenses	$23,249.5	$23,796.1	$24,194.0

The adjustment related to unrealized investment gains and losses reflects the changes that would be necessary to policyholder liabilities if the unrealized investment gains and losses related to the corresponding available-for-sale securities had been realized. Changes in this adjustment are reported as a component of other comprehensive income or loss.

Note 7. Income Tax

Total income tax expense (benefit) is allocated as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Net Income	$ 416.3	$ 371.2	$ 139.9
Stockholders' Equity — Additional Paid-in Capital			
Stock-Based Compensation	(0.3)	(3.6)	(3.0)
Stockholders' Equity — Accumulated Other Comprehensive Income			
Change in Net Unrealized Gain on Securities Before Adjustment	318.0	(892.5)	725.8
Change in Adjustment to Deferred Acquisition Costs and Reserves for Future Policy and Contract Benefits, Net of Reinsurance	(200.6)	856.6	(665.1)
Change in Net Gain on Cash Flow Hedges	(25.4)	(4.3)	(2.0)
Change in Foreign Currency Translation Adjustment	—	(0.1)	—
Change in Unrecognized Pension and Postretirement Benefit Costs	(34.2)	3.2	(92.4)
Total	$ 473.8	$ 330.5	$ 103.2

A reconciliation of the income tax provision at the U.S. federal statutory rate to the income tax rate as reported in our consolidated statements of income is as follows:

	Year Ended December 31		
	2016	2015	2014
Statutory Income Tax	35.0%	35.0%	35.0%
Foreign Rate Differential, Inclusive of Foreign Rate Changes	(2.2)	(2.5)	(4.0)
Tax Credits	(1.6)	(1.4)	(4.5)
Other Items, Net	(0.3)	(1.1)	(0.7)
Effective Tax	30.9%	30.0%	25.8%

In 2014, our U.S. earnings included a long-term care reserve charge that resulted in a larger proportion of our 2014 earnings derived from our foreign operations and taxed at the lower rate, therefore reducing our overall effective tax rate.

Our net deferred tax liability consists of the following:

	December 31	
(in millions of dollars)	2016	2015
Deferred Tax Liability		
Deferred Acquisition Costs	$ 174.9	$ 140.4
Fixed Assets	80.7	87.1
Invested Assets	1,427.6	1,128.4
Other	63.2	55.4
Gross Deferred Tax Liability	1,746.4	1,411.3
Deferred Tax Asset		
Reserves	1,308.5	1,060.5
Employee Benefits	307.4	246.0
Other	17.4	14.3
Gross Deferred Tax Asset	1,633.3	1,320.8
Less: Valuation Allowance	17.2	1.3
Net Deferred Tax Asset	1,616.1	1,319.5
Net Deferred Tax Liability	$ 130.3	$ 91.8

Our consolidated statements of income include amounts subject to both domestic and foreign taxation. The income and related tax expense (benefit) are as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Income Before Tax			
Domestic	$1,215.8	$1,057.8	$391.7
Foreign	131.9	180.5	150.3
Total	$1,347.7	$1,238.3	$542.0
Current Tax Expense (Benefit)			
Federal	$ 414.8	$ 280.5	$160.6
State and Local	0.3	—	—
Foreign	(29.4)	61.6	(25.1)
Total	385.7	342.1	135.5
Deferred Tax Expense (Benefit)			
Federal	(14.6)	56.9	(50.5)
State and Local	(2.1)	—	—
Foreign	47.3	(27.8)	54.9
Total	30.6	29.1	4.4
Total	$ 416.3	$ 371.2	$139.9

The U.K. government enacted income tax rate reductions during 2016 and 2015. During 2016, the rate effective April 2020 was reduced to 17 percent. During 2015, the rate was reduced from 20 percent to 19 percent effective April 2017, and to 18 percent effective April 2020. Although the rate reductions in each instance became or will become effective during a subsequent year, we are required to adjust deferred tax assets and liabilities through income on the date of enactment of a rate change. As a result, we recorded income tax benefits of $4.5 million and $6.5 million for the tax rate reductions enacted during 2016 and 2015, respectively.

We have not provided U.S. deferred taxes on the cumulative earnings of our non-U.S. subsidiaries. We consider these unremitted earnings to be permanently invested as they relate to ongoing operations of our non-U.S. subsidiaries. We do not intend to repatriate these earnings to fund our U.S. operations as we expect that future domestic cash flow generation will be sufficient to meet future domestic cash needs. As of December 31, 2016, we had not recorded a deferred tax liability on approximately $1 billion of the excess of the U.S. GAAP carrying value over the tax basis of investments in non-U.S. subsidiaries that is considered permanent in duration. This amount becomes taxable upon repatriation of assets from a foreign subsidiary or a sale or liquidation of foreign subsidiaries. Should we sell the stock in our non-U.S. subsidiaries for an amount equal to the U.S. GAAP carrying value, we would recognize tax expense of approximately $200 million, assuming our ability to fully utilize foreign tax credits.

Our consolidated statements of income include the following changes in unrecognized tax benefits:

	December 31		
(in millions of dollars)	2016	2015	2014
Balance at Beginning of Year	$0.8	$ 19.8	$ 18.4
Additions for Tax Positions Related to Prior Years	0.7	—	1.7
Additions for Tax Positions Related to Current Year	—	—	0.3
Settlements with Tax Authorities	—	(19.0)	(0.6)
Balance at End of Year	1.5	0.8	19.8
Less Tax Attributable to Temporary Items Included Above	—	—	(10.4)
Total Unrecognized Tax Benefits That if Recognized Would Affect the Effective Tax Rate	$1.5	$ 0.8	$ 9.4

Included in the balance at December 31, 2014 was $10.4 million of unrecognized tax benefits for tax positions for which the ultimate deductibility was highly certain but for which there was uncertainty about the timing of such deductibility. Other than potential interest and penalties, the disallowance of the shorter deductibility period would not have affected our results of operations but would have accelerated the payment of cash to the taxing authority.

We recognize interest expense and penalties, if applicable, related to unrecognized tax benefits in tax expense net of federal income tax. We recognized a de minimis amount of interest expense related to unrecognized tax benefits during 2016. We recognized an increase (reduction) in interest expense related to unrecognized tax benefits of $(1.0) million and $0.2 million during 2015 and 2014, respectively. We held a de minimis liability in our consolidated balance sheets for accrued interest and penalties related to unrecognized tax benefits at December 31, 2016 and 2015. At December 31, 2014, we held a liability of $1.0 million. There are no positions for which it is reasonably possible that unrecognized tax benefits could materially increase or decrease within the next 12 months.

We file federal and state income tax returns in the United States and in foreign jurisdictions. During 2015, we settled our Internal Revenue Service (IRS) audit for 2009 and 2010 and resolved a claim for refund we filed related to tax credits for years 2003 through 2012. As a result, we recognized a tax benefit of $6.8 million in our consolidated statements of income and paid an immaterial amount of additional tax.

Tax years subsequent to 2012 remain subject to examination by the IRS, and tax years subsequent to 2014 remain subject to examination in major foreign jurisdictions. We believe sufficient provision has been made for all potential adjustments for years that are not closed by the statute of limitations in all major tax jurisdictions and that any such adjustments would not have a material adverse effect on our financial position, liquidity, or results of operations.

We file state income tax returns in nearly every state in the United States. Tax years subsequent to 2011 remain subject to examination depending on the statute of limitation established by the various states, which is generally three to four years. Tax years subsequent to 2009 remain subject to examination in California.

As of the date of the acquisition of Starmount, we recorded a net operating loss carryforward of $2.5 million and an alternative minimum tax credit carryforward of $0.6 million. During 2016, we recognized a net operating loss benefit of $1.2 million. The alternative minimum tax credit carryforward does not expire, and the remaining net operating loss carryforward of $1.3 million will expire between 2023 and 2035; however, we expect to utilize both within the next two tax years. We have net operating loss carryforwards for state and local income tax of approximately $160 million which will expire between 2017 and 2036.

We record valuation allowances to reduce deferred tax assets to the amount that is more likely than not to be realized. Our valuation allowance was $17.2 million and $1.3 million at December 31, 2016 and 2015, respectively. During 2016, we recorded a cumulative deferred tax asset for future state income tax benefits of $18.7 million, net of federal tax benefit, and recorded a corresponding valuation allowance of $16.3 million to reduce the deferred tax asset to the amount that is more likely than not to be realized, $1.5 million of which was recorded in other comprehensive income. During 2015, we recorded a valuation allowance of $1.3 million related to unrealized tax losses on buildings which we own and occupy in the U.K.

Total income taxes paid net of refunds during 2016, 2015, and 2014 were $384.3 million, $189.1 million, and $155.7 million, respectively.

Note 8. Debt

Debt consists of the following:

(in millions of dollars)	Interest Rates	Maturities	December 31 2016	2015
Long-term Debt				
Outstanding Principal				
Senior Secured Notes issued 2007	Variable	2037	$ 260.0	$ 324.0
Senior Secured Notes acquired 2016	Variable	2038	3.5	—
Senior Notes issued 1998	7.000%	2018	200.0	200.0
Senior Notes issued 1998	6.750–7.250%	2028	365.8	365.8
Senior Notes issued 2002	7.375%	2032	39.5	39.5
Senior Notes issued 2010	5.625%	2020	400.0	400.0
Senior Notes issued 2012 and 2016	5.750%	2042	500.0	250.0
Senior Notes issued 2014	4.000%	2024	350.0	350.0
Senior Notes issued 2015	3.875%	2025	275.0	275.0
Senior Notes issued 2016	3.000%	2021	350.0	—
Medium-term Notes issued 1990–1996	7.000–7.190%	2023-2028	50.8	50.8
Junior Subordinated Debt Securities issued 1998	7.405%	2038	226.5	226.5
Fair Value Hedges Adjustment			(3.1)	(2.7)
Less:				
Unamortized Net Premium (Discount)			9.8	(3.8)
Unamortized Debt Issuance Costs			(28.4)	(25.7)
Total Long-term Debt			2,999.4	2,449.4
Short-term Debt				
Outstanding Principal				
Senior Notes issued 2009	7.125%	2016	—	350.0
Fair Value Hedges Adjustment			—	2.4
Less Unamortized Debt Issuance Costs			—	(0.4)
Total Short-term Debt			—	352.0
Total Debt			$2,999.4	$2,801.4

Collateralized debt is comprised of our senior secured notes and ranks highest in priority, followed by unsecured notes, which consist of senior notes and medium-term notes, followed by junior subordinated debt securities. The senior notes due 2018 and medium-term notes are non-callable and the junior subordinated debt securities are callable under limited, specified circumstances. The remaining debt is callable and may be redeemed, in whole or in part, at any time.

The aggregate contractual principal maturities are $200.0 million in 2018, $400.0 million in 2020, $350.0 million in 2021, and $2,071.1 million thereafter.

Senior Secured Notes

In 2007, Northwind Holdings, LLC (Northwind Holdings), a wholly-owned subsidiary of Unum Group, issued $800.0 million of insured, senior secured notes (the Northwind notes) in a private offering. The Northwind notes bear interest at a floating rate equal to the three-month LIBOR plus 0.78%.

Northwind Holdings' ability to meet its obligations to pay principal, interest, and other amounts due on the Northwind notes will be dependent principally on its receipt of dividends from Northwind Reinsurance Company (Northwind Re), the sole subsidiary of Northwind Holdings. Northwind Re reinsured the risks attributable to specified individual disability insurance policies issued by or reinsured by Provident Life and Accident Insurance Company, Unum Life Insurance Company of America, and The Paul Revere Life Insurance Company (collectively, the ceding insurers) pursuant to separate reinsurance agreements between Northwind Re and each of the ceding insurers. The ability of Northwind Re to pay dividends to Northwind Holdings will depend on its satisfaction of applicable regulatory requirements and the performance of the reinsured policies.

Recourse for the payment of principal, interest and other amounts due on the Northwind notes is limited to the collateral for the Northwind notes and the other assets, if any, of Northwind Holdings. The collateral consists of a first priority, perfected security interest in (a) the debt service coverage account (DSCA) that Northwind Holdings is required to maintain in accordance with the indenture pursuant to which the Northwind notes were issued (the Northwind indenture), (b) the capital stock of Northwind Re and the dividends and distributions on such capital stock, and (c) Northwind Holdings' rights under the transaction documents related to the Northwind notes to which Northwind Holdings is a party. At December 31, 2016, the amount in the DSCA was $27.6 million. None of Unum Group, the ceding insurers, Northwind Re, or any other affiliate of Northwind Holdings is an obligor or guarantor with respect to the Northwind notes.

Northwind Holdings is required to repay a portion of the outstanding principal under the Northwind notes at par on the quarterly scheduled payment dates under the Northwind notes in an amount equal to the lesser of (i) a targeted amortization amount as defined in the Northwind indenture and (ii) the amount of the remaining available funds in the DSCA minus an amount equal to the minimum balance that is required to be maintained in the DSCA under the Northwind indenture, provided that Northwind Holdings has sufficient funds available to pay its other expenses, including interest payments on the Northwind notes, and to maintain the minimum balance in the DSCA as required under the Northwind indenture. During 2016, 2015, and 2014, Northwind Holdings made principal payments of $64.0 million, $74.4 million, and $41.6 million, respectively, on the Northwind notes.

In conjunction with the purchase of Starmount in 2016, we acquired $3.5 million of senior secured floating rate notes due 2038. The notes, issued by Starmount Life Insurance Company, are secured by Starmount's home office building and are guaranteed by H&J Capital L.L.C, parent company of Starmount Life Insurance Company and a wholly-owned subsidiary of Unum Group. Upon issuance, Starmount entered into a receive variable, pay fixed interest rate swap which effectively converted the notes into fixed rate debt. See Notes 4 and 13.

Unsecured Notes

In September 2016, our $350.0 million 7.125% senior unsecured notes matured.

In May 2016, we issued a total of $600.0 million aggregate principal amount of senior notes: (i) $350.0 million aggregate principal amount of senior notes due in 2021 with an annual coupon rate of 3.00%, and (ii) $250.0 million aggregate principal amount of senior notes due in 2042 with an annual coupon rate of 5.75%, pursuant to a reopening of the $250.0 million aggregate principal amount outstanding of our 5.75% senior notes due 2042 issued in 2012. Both issuances are callable at or above par and rank equally in the right of payment with all of our other unsecured and unsubordinated debt.

In 2014, we purchased and retired $145.0 million principal of our 6.85% notes, including a make-whole amount of $13.2 million, for a total cost of $158.2 million. In conjunction with this retirement, we reclassified $13.1 million of the deferred gain on previously terminated derivatives associated with the hedge of this debt from accumulated other comprehensive income to realized investment gain in our consolidated statements of income. The remaining $151.9 million balance of these notes matured in November 2015.

Fair Value Hedges

As of December 31, 2016 and 2015, we had $250.0 million and $600.0 million, respectively, notional amount interest rate swaps which effectively convert certain of our unsecured senior notes into floating rate debt. Under these agreements, we receive fixed rates of interest and pay variable rates of interest, based off of three-month LIBOR. See Note 4 for further information on our interest rate swaps.

Junior Subordinated Debt Securities

In 1998, Provident Financing Trust I (the trust), a 100 percent-owned finance subsidiary of Unum Group, issued $300.0 million of 7.405% capital securities in a public offering. These capital securities are fully and unconditionally guaranteed by Unum Group, have a liquidation value of $1,000 per capital security, and have a mandatory redemption feature under certain circumstances. Unum Group issued 7.405% junior subordinated deferrable interest debentures to the trust in connection with the capital securities offering. The debentures mature in 2038. The sole assets of the trust are the junior subordinated debt securities.

Interest Paid

Interest paid on long-term and short-term debt and related securities during 2016, 2015, and 2014 was $153.6 million, $146.9 million, and $145.9 million, respectively.

Credit Facility

In March 2016, we amended the terms of our five-year, $400.0 million unsecured revolving credit facility, which was previously set to expire in 2018, to extend through March 2021. Under the terms of the agreement, we may request that the credit facility be increased up to $600.0 million. Borrowings under the credit facility are for general corporate uses and are subject to financial covenants, negative covenants, and events of default that are customary. The credit facility provides for borrowing at an interest rate based either on the prime rate or LIBOR. In addition, the credit facility provides for the issuance of letters of credit subject to certain terms and limitations. At December 31, 2016 and 2015, letters of credit totaling $2.1 million had been issued from the credit facility, but there were no borrowed amounts outstanding.

Note 9. Employee Benefit Plans

Defined Benefit Pension and Other Postretirement Benefit (OPEB) Plans

We sponsor several defined benefit pension and OPEB plans for our employees, including non-qualified pension plans. The U.S. qualified and non-qualified defined benefit pension plans comprise the majority of our total benefit obligation and benefit cost. We maintain a separate defined benefit plan for eligible employees in our U.K. operation. The U.S. defined benefit pension plans were closed to new entrants on December 31, 2013, the OPEB plan was closed to new entrants on December 31, 2012, and the U.K. plan was closed to new entrants on December 31, 2002.

Amendments to Pension Plan

In 2015, we amended our U.S. qualified defined benefit pension plan to increase the eligibility limit from $10,000 to $100,000 for a participant who terminates from the plan after December 31, 2015 and elects to receive a lump-sum settlement of his or her entire accrued pension benefit. As a result of this plan amendment, we recognized a decrease in the net pension liability of $7.5 million, with a corresponding prior service credit included in accumulated other comprehensive income.

In 2014, we amended our U.S. qualified defined benefit pension plan to allow a limited-time offer of benefit payouts to eligible former employees with a vested right to a pension benefit. The offer provided eligible former employees, regardless of age, with an option to elect to receive a lump-sum settlement of his or her entire accrued pension benefit in December 2014 or to elect receipt of monthly pension benefits commencing in January 2015. For those who elected to receive lump-sum settlements, we made payments totaling $214.5 million from plan assets in December 2014. We recognized a before-tax settlement loss of $64.4 million in earnings during 2014, with a corresponding reduction in the unrecognized actuarial loss included in accumulated other comprehensive income that pertained to the settled benefit obligation.

Amendment to OPEB Plan

Effective August 1, 2016, we amended the retiree medical benefits portion of our OPEB plan to transition a majority of participants to a private exchange for their health insurance coverage. Prior to the plan amendment, participants paid a subsidized premium for their health insurance coverage, but if they elect to continue participation in the plan they will now purchase coverage on a private exchange and will subsequently be reimbursed through a Health Reimbursement Account (HRA) for an amount equivalent to the subsidy that was previously provided. Participants who continued in the plan received a one-time subsidy to minimize the initial out-of-pocket cost of purchasing health insurance. The amendment did not materially change the benefit obligation of the plan.

Amortization Period of Actuarial Gain or Loss and Prior Service Cost or Credit

Because all participants in the U.S. and U.K. pension plans are considered inactive, we amortize the net actuarial loss and prior service credit for these plans over the average remaining life expectancy of the plans. As of December 31, 2016, the estimate of the average remaining life expectancy of the plans was approximately 25 years for the U.S. plan and 33 years for U.K. plan.

The following table provides the changes in the benefit obligation and fair value of plan assets and the funded status of the plans.

	Pension Benefits					
	U.S. Plans		U.K. Plan		OPEB	
(in millions of dollars)	2016	2015	2016	2015	2016	2015
Change in Benefit Obligation						
Benefit Obligation at Beginning of Year	$1,808.2	$1,892.6	$203.8	$226.9	$160.4	$173.9
Service Cost	7.0	3.8	—	—	—	—
Interest Cost	85.2	82.2	7.0	7.9	7.2	7.2
Plan Participant Contributions	—	—	—	—	4.0	4.6
Actuarial (Gain) Loss	123.6	(103.6)	55.0	(14.7)	(4.4)	(9.1)
Benefits and Expenses Paid	(68.7)	(59.3)	(4.5)	(4.6)	(15.6)	(16.2)
Plan Amendment	—	(7.5)	—	—	(3.7)	—
Change in Foreign Exchange Rates	—	—	(38.3)	(11.7)	—	—
Benefit Obligation at End of Year	$1,955.3	$1,808.2	$223.0	$203.8	$147.9	$160.4
Accumulated Benefit Obligation at December 31	$1,955.3	$1,808.2	$213.4	$194.8	N/A	N/A
Change in Fair Value of Plan Assets						
Fair Value of Plan Assets at Beginning of Year	$1,403.3	$1,473.7	$231.5	$246.3	$ 11.2	$ 11.3
Actual Return on Plan Assets	112.3	(17.5)	42.5	2.9	0.1	0.3
Employer Contributions	7.2	6.4	—	—	11.1	11.2
Plan Participant Contributions	—	—	—	—	4.0	4.6
Benefits and Expenses Paid	(68.7)	(59.3)	(4.5)	(4.6)	(15.6)	(16.2)
Change in Foreign Exchange Rates	—	—	(41.1)	(13.1)	—	—
Fair Value of Plan Assets at End of Year	$1,454.1	$1,403.3	$228.4	$231.5	$ 10.8	$ 11.2
Underfunded (Overfunded) Status	$ 501.2	$ 404.9	$ (5.4)	$ (27.7)	$137.1	$149.2

The amounts recognized in our consolidated balance sheets for our pension and OPEB plans at December 31, 2016 and 2015 are as follows.

	Pension Benefits					
	U.S. Plans		U.K. Plan		OPEB	
(in millions of dollars)	2016	2015	2016	2015	2016	2015
Current Liability	$ 7.0	$ 5.9	$ —	$ —	$ 13.1	$ 13.0
Noncurrent Liability	494.2	399.0	—	—	124.0	136.2
Noncurrent Asset	—	—	(5.4)	(27.7)	—	—
Underfunded (Overfunded) Status	$ 501.2	$ 404.9	$ (5.4)	$(27.7)	$137.1	$149.2
Unrecognized Pension and Postretirement Benefit Costs						
Net Actuarial Gain (Loss)	$(702.1)	$(604.2)	$(44.0)	$(28.1)	$ 10.1	$ 6.2
Prior Service Credit	7.2	7.5	—	—	3.9	0.4
	(694.9)	(596.7)	(44.0)	(28.1)	14.0	6.6
Income Tax	243.6	208.8	10.9	8.9	5.3	7.9
Total Included in Accumulated Other Comprehensive Income (Loss)	$(451.3)	$(387.9)	$(33.1)	$(19.2)	$ 19.3	$ 14.5

The following table provides the changes recognized in other comprehensive income for the years ended December 31, 2016 and 2015.

	Pension Benefits					
	U.S. Plans		U.K. Plan		OPEB	
(in millions of dollars)	2016	2015	2016	2015	2016	2015
Accumulated Other Comprehensive Income (Loss) at Beginning of Year	$(387.9)	$(385.5)	$(19.2)	$(25.0)	$14.5	$ 9.0
Net Actuarial Gain (Loss)						
Amortization	16.2	11.6	0.1	0.3	—	—
All Other Changes	(114.1)	(22.8)	(16.0)	7.0	3.9	8.8
Prior Service Credit (Cost)						
Amortization	(0.3)	—	—	—	(0.2)	(0.3)
Plan Amendment	—	7.5	—	—	3.7	—
Change in Income Tax	34.8	1.3	2.0	(1.5)	(2.6)	(3.0)
Accumulated Other Comprehensive Income (Loss) at End of Year	$(451.3)	$(387.9)	$(33.1)	$(19.2)	$19.3	$14.5

Plan Assets

The objective of our U.S. pension and OPEB plans is to maximize long-term return, within acceptable risk levels, in a manner that is consistent with the fiduciary standards of the Employee Retirement Income Security Act (ERISA), while maintaining sufficient liquidity to pay current benefits and expenses.

Our U.S. qualified defined benefit pension plan assets include a diversified blend of domestic, international, global, and emerging market equity securities, fixed income securities, opportunistic credit securities, real estate investments, alternative investments, and cash equivalents. Equity securities are comprised of funds and individual securities that are designed to track the respective indices specified below. International and global equity funds may allocate a certain percentage of assets to forward currency contracts. Fixed income securities include U.S. government and agency asset-backed securities, corporate investment-grade bonds, private placement securities, and bonds issued by states or other municipalities. Opportunistic credits consist of investments in funds that hold varied fixed income investments purchased at depressed values with the intention to later sell those investments for a gain. Real estate investments consist primarily of funds that hold commercial real estate investments. Alternative investments, which include private equity direct investments, private equity funds of funds, and hedge funds of funds, utilize proprietary strategies that are intended to have a low correlation to the U.S. stock market. Prohibited investments include, but are not limited to, unlisted securities, futures contracts, options, short sales, and investments in securities issued by Unum Group or its affiliates. The invested asset classes, asset types, and benchmark indices for our U.S. qualified defined benefit pension plan is as follows. We target approximately 33 percent to equity securities, 40 percent to fixed income securities, and 27 percent to opportunistic credits, alternative, and real estate investments.

Asset Class	Asset Type	Benchmark Indices
Equity Securities	Collective fund; Individual holdings	Standard & Poor's 500; Russell 2000 Value and Growth; MSCI Europe Australasia Far East Small Cap; MSCI Emerging Markets; MSCI World and World Minimum Volatility; FTSE RAFI All-World Low Volatility
Fixed Income	Individual holdings	Bloomberg Barclays Long Government/Corporate Index
Opportunistic Credits	Collective fund	Custom Index
Real Estate	Collective fund	National Council of Real Estate Investment Fund Open-end Diversified Core Equity Index
Alternative Investments (Hedge and Private Equity)	Fund of funds; Direct investments	Hedge Fund Research Institute Fund of Funds; Russell 2000

Assets for our U.K. pension plan are primarily invested in a pooled diversified growth fund. This fund invests in assets such as global equities, hedge funds, commodities, below-investment-grade fixed income securities, and currencies. The objectives of the fund are to generate capital appreciation over the course of a complete economic and market cycle and to deliver equity-like returns in the medium-to-long term while maintaining approximately two thirds of the volatility of equity markets. Performance of this fund is measured against the U.K. inflation rate plus four percent. The remaining assets in the U.K. plan are invested in leveraged interest rate and inflation swap and gilt funds of varying durations designed to broadly match the interest rate and inflation sensitivities of the plan's liabilities. The current target allocation for the assets is 65 percent diversified growth assets and 35 percent interest rate and inflation swap funds. There are no categories of investments that are specifically prohibited by the U.K. plan, but there are general guidelines that ensure prudent investment action is taken. Such guidelines include the prevention of the plan from using derivatives for speculative purposes and limiting the concentration of risk in any one type of investment.

Assets for the OPEB plan are invested in life insurance contracts issued by one of our insurance subsidiaries. The assets support life insurance benefits payable to certain former retirees covered under the OPEB plan. The terms of these contracts are consistent in all material respects with those the subsidiary offers to unaffiliated parties that are similarly situated. There are no categories of investments specifically prohibited by the OPEB plan.

We believe our investment portfolios are well diversified by asset class and sector, with no undue risk concentrations in any one category.

The categorization of fair value measurements by input level for the invested assets in our U.S. pension plans is shown below. The carrying values of investment-related receivables and payables approximate fair value due to the short-term nature of the securities and are not included in the following chart. Investments valued using net asset value (NAV) as a practical expedient are not required to be categorized by input level, but these investments are included as follows to reconcile to total invested assets. Prior year amounts have been reclassified to conform to current year presentation.

	December 31, 2016				
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV as a Practical Expedient	Total
Invested Assets					
Equity Securities:					
U.S. Large Cap	$ —	$ —	$—	$ 85.5	$ 85.5
U.S. Small Cap	50.2	—	—	—	50.2
Global	—	—	—	259.7	259.7
International	—	—	—	26.3	26.3
Emerging Markets	—	—	—	49.6	49.6
Fixed Income Securities:					
U.S. Government and Agencies	227.8	11.1	—	—	238.9
Corporate	—	303.6	—	—	303.6
State and Municipal Securities	—	2.0	—	—	2.0
Opportunistic Credits	—	—	—	181.8	181.8
Real Estate	—	—	—	88.9	88.9
Alternative Investments:					
Private Equity Direct Investments	—	—	—	37.4	37.4
Private Equity Funds of Funds	—	—	—	32.0	32.0
Hedge Funds of Funds	—	—	—	72.1	72.1
Cash Equivalents	21.2	—	—	—	21.2
Total Invested Assets	$299.2	$316.7	$—	$833.3	$1,449.2

(in millions of dollars)	December 31, 2015 Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV as a Practical Expedient	Total
Invested Assets					
Equity Securities:					
U.S. Large Cap	$ —	$ —	$—	$176.2	$ 176.2
U.S. Mid Cap	—	—	—	55.0	55.0
U.S. Small Cap	56.9	—	—	—	56.9
International	63.7	—	—	62.9	126.6
Emerging Markets	—	—	—	35.5	35.5
Fixed Income Securities:					
U.S. Government and Agencies	231.5	12.8	—	—	244.3
Corporate	—	291.4	—	—	291.4
State and Municipal Securities	—	2.1	—	—	2.1
Opportunistic Credits	—	—	—	163.5	163.5
Real Estate	—	—	—	83.5	83.5
Alternative Investments:					
Private Equity Direct Investments	—	—	—	30.4	30.4
Private Equity Funds of Funds	—	—	—	35.3	35.3
Hedge Funds of Funds	—	—	—	70.9	70.9
Cash Equivalents	28.0	—	—	—	28.0
Total Invested Assets	$380.1	$306.3	$—	$713.2	$1,399.6

Level 1 investments consist of individual holdings and funds that are valued based on unadjusted quoted prices from active markets for identical securities. Level 2 investments consist of individual holdings that are valued using observable inputs through market corroborated pricing.

Certain equity, opportunistic credit, and real estate investments are valued based on the NAV of the underlying holdings. We made no adjustments to the NAV for 2016 or 2015. These investments have no unfunded commitments and no specific redemption restrictions.

Alternative investments are valued based on NAV in a period ranging from one month to one quarter in arrears. We evaluate the need for adjustments to the NAV based on market conditions and discussions with fund managers in the period subsequent to the valuation date and prior to issuance of the financial statements. We made no adjustments to the NAV for 2016 or 2015. The private equity direct investments and private equity funds of funds generally cannot be redeemed by investors, and distributions are received following the maturity of the underlying assets. It is estimated that these underlying assets will mature between five and eight years from the date of initial investment. Redemptions on the hedge funds of funds can be made on either a quarterly or bi-annual basis, depending on the fund, with prior notice of at least 90 calendar days.

The categorization of fair value measurements by input level for the invested assets in our U.K. pension plan is shown below. Investments valued using NAV as a practical expedient are not required to be categorized by input level, but these investments are included as follows to reconcile to total invested assets. Prior year amounts have been reclassified to conform to current year presentation.

	December 31, 2016				
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV as a Practical Expedient	Total
Plan Assets					
Diversified Growth Assets	$ —	$—	$—	$140.1	$140.1
Fixed Interest and Index-linked Securities	79.9	—	—	7.5	87.4
Cash Equivalents	0.9	—	—	—	0.9
Total Plan Assets	$80.8	$—	$—	$147.6	$228.4

	December 31, 2015				
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV as a Practical Expedient	Total
Plan Assets					
Diversified Growth Assets	$ —	$—	$—	$156.3	$156.3
Fixed Interest and Index-linked Securities	62.2	—	—	5.3	67.5
Cash Equivalents	7.7	—	—	—	7.7
Total Plan Assets	$69.9	$—	$—	$161.6	$231.5

Level 1 fixed interest and index-linked securities consist of individual funds that are valued based on unadjusted quoted prices from active markets for identical securities. Diversified growth assets and certain fixed interest and index-linked securities are valued based on the NAV of the underlying holdings. We made no adjustments to the NAV for 2016 or 2015. These investments have no unfunded commitments and no specific redemption restrictions.

The categorization of fair value measurements by input level for the assets in our OPEB plan is as follows:

	December 31, 2016			
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets				
Life Insurance Contracts	$—	$—	$10.8	$10.8

	December 31, 2015			
(in millions of dollars)	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets				
Life Insurance Contracts	$—	$—	$11.2	$11.2

The fair value is represented by the actuarial present value of future cash flows of the contracts.

Changes in our OPEB plan assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during the years ended December 31, 2016 and 2015 are as follows:

	Year Ended December 31, 2016				
(in millions of dollars)	Beginning of Year	Actual Return on Plan Assets	Contributions	Net Benefits and Expenses Paid	End of Year
Life Insurance Contracts	$11.2	$0.1	$15.1	$(15.6)	$10.8

	Year Ended December 31, 2015				
(in millions of dollars)	Beginning of Year	Actual Return on Plan Assets	Contributions	Net Benefits and Expenses Paid	End of Year
Life Insurance Contracts	$11.3	$0.3	$15.8	$(16.2)	$11.2

For the years ended December 31, 2016 and 2015, the actual return on plan assets relates solely to investments still held at the reporting date. There were no transfers into or out of Level 3 during 2016 or 2015.

Measurement Assumptions

We use a December 31 measurement date for each of our plans. The weighted average assumptions used in the measurement of our benefit obligations as of December 31 and our net periodic benefit costs for the years ended December 31 are as follows:

	Pension Benefits					
	U.S. Plans		U.K. Plan		OPEB	
	2016	2015	2016	2015	2016	2015
Benefit Obligations						
Discount Rate	4.40%	4.80%	2.70%	3.80%	4.20%	4.70%
Rate of Compensation Increase	N/A	N/A	3.80%	3.60%	N/A	N/A
Net Periodic Benefit Cost						
Discount Rate	4.80%	4.40%	3.80%	3.60%	4.70%	4.30%
Expected Return on Plan Assets	7.50%	7.50%	4.90%	5.20%	5.75%	5.75%
Rate of Compensation Increase	N/A	N/A	3.60%	3.60%	N/A	N/A

We set the discount rate assumption annually for each of our retirement-related benefit plans at the measurement date to reflect the yield on a portfolio of high quality fixed income corporate debt instruments matched against the projected cash flows for future benefits.

Our long-term rate of return on plan assets assumption is selected from a range of probable return outcomes generated by statistical analysis of the asset portfolio. Our expectations for the future investment returns of the asset categories are based on a combination of historical market performance, evaluations of investment forecasts obtained from external consultants and economists, and current market yields. The methodology underlying the return assumption includes the various elements of the expected return for each asset class such as long-term rates of return, volatility of returns, and the correlation of returns between various asset classes. The expected return for the total portfolio is calculated based on the plan's strategic asset allocation. Investment risk is measured and monitored on an ongoing basis through annual liability measurements, periodic asset/liability studies, and quarterly investment portfolio reviews. Risk tolerance is established through consideration of plan liabilities, plan funded status, and corporate financial condition.

Our mortality rate assumption reflects our best estimate, as of the measurement date, of the life expectancies of plan participants in order to determine the expected length of time for benefit payments. We derive our assumptions from industry mortality tables.

The expected return assumption for the life insurance reserve for our OPEB plan at December 31, 2016 and 2015 is 5.75 percent, which is based on full investment in fixed income securities with an average book yield of 4.99 percent and 5.24 percent in 2016 and 2015, respectively.

The rate of compensation increase assumption for our U.K. pension plan is generally based on periodic studies of compensation trends.

At December 31, 2016 and 2015, the annual rates of increase in the per capita cost of covered postretirement health care benefits assumed for the next calendar year are 7.00 percent and 7.50 percent, respectively, for benefits payable to both retirees prior to Medicare eligibility as well as Medicare eligible retirees. The rates are assumed to change gradually to 5.00 percent by 2021 for measurement at December 31, 2016 and remain at that level thereafter. The annual rates of increase in the per capita cost of covered postretirement health benefits do not apply to retirees whose postretirement health care benefits are provided through an exchange.

Net Periodic Benefit Cost

The following table provides the components of the net periodic benefit cost for the years ended December 31.

	Pension Benefits								
	U.S. Plans			U.K. Plan			OPEB		
(in millions of dollars)	2016	2015	2014	2016	2015	2014	2016	2015	2014
Service Cost	$ 7.0	$ 3.8	$ 3.7	$ —	$ —	$ 2.3	$ —	$ —	$ 0.3
Interest Cost	85.2	82.2	89.9	7.0	7.9	9.1	7.2	7.2	7.9
Expected Return on Plan Assets	(102.8)	(108.9)	(117.8)	(10.0)	(12.4)	(13.7)	(0.6)	(0.7)	(0.7)
Amortization of:									
Net Actuarial Loss	16.2	11.6	5.2	0.1	0.3	0.4	—	—	—
Prior Service Credit	(0.3)	—	—	—	—	—	(0.2)	(0.3)	(1.7)
Plan Amendment	—	—	—	—	—	—	0.9	—	—
Settlement	—	—	64.4	—	—	—	—	—	—
Total Net Periodic Benefit Cost	$ 5.3	$ (11.3)	$ 45.4	$ (2.9)	$ (4.2)	$ (1.9)	$ 7.3	$ 6.2	$ 5.8

A one percent increase or decrease in the assumed health care cost trend rate at December 31, 2016 would have increased (decreased) the service cost and interest cost by $0.2 million and $(0.2) million, respectively, and the postretirement benefit obligation by $0.9 million and $(0.8) million, respectively.

The unrecognized net actuarial loss and the prior service credit included in accumulated other comprehensive income and expected to be amortized and included in net periodic pension cost during 2017 is $20.2 million and $0.7 million before tax, respectively.

Benefit Payments

The following table provides expected benefit payments, which reflect expected future service, as appropriate.

(in millions of dollars)	Pension Benefits		OPEB		
Year	U.S. Plans	U.K. Plan	Gross	Subsidy Payments	Net
2017	$ 71.8	$ 4.5	$13.6	$0.3	$13.3
2018	74.4	4.8	13.2	0.2	13.0
2019	76.9	4.8	12.8	0.2	12.6
2020	80.6	5.1	12.3	0.2	12.1
2021	84.3	5.4	11.9	0.2	11.7
2022–2026	476.9	32.5	50.9	0.7	50.2

Funding Policy

The funding policy for our U.S. qualified defined benefit plan is to contribute annually an amount at least equal to the minimum annual contribution required under ERISA and other applicable laws, but generally not greater than the maximum amount that can be deducted for federal income tax purposes. We had no regulatory contribution requirements for our U.S. qualified defined benefit plan in 2016 and made no voluntary contributions during 2016. We do not expect to make any contributions in 2017. The funding policy for our U.S. non-qualified defined benefit pension plan is to contribute the amount of the benefit payments made during the year. Our expected return on plan assets and discount rate will not affect the cash contributions we are required to make to our U.S. pension and OPEB plans because such contributions are determined under the minimum funding requirements as set forth in ERISA.

We made no contributions to our U.K. plan during 2016, nor do we expect to make any contributions in 2017, either voluntary or those required to meet the minimum funding requirements under U.K. legislation.

Our OPEB plan represents a non-vested, non-guaranteed obligation, and current regulations do not require specific funding levels for these benefits, which are comprised of retiree life, medical, and dental benefits. It is our practice to use general assets to pay medical and dental claims as they come due in lieu of utilizing plan assets for the medical and dental benefit portions of our OPEB plan.

Defined Contribution Plans

We offer a 401(k) plan to all eligible U.S. employees under which a portion of employee contributions is matched. We match dollar-for-dollar up to 5.0 percent of base salary and any recognized sales and performance-based incentive compensation for employee contributions into the plan. We also make an additional non-elective contribution of 4.5 percent of earnings for all eligible employees and a separate transition contribution for eligible employees who met certain age and years of service criteria as of December 31, 2013. The 401(k) plan remains in compliance with ERISA guidelines and continues to qualify for a "safe harbor" from annual discrimination testing.

We also offer a defined contribution plan to all eligible U.K. employees under which a portion of employee contributions is matched. Effective July 1, 2014, we increased benefits under the defined contribution plan wherein we match two pounds for every one pound on the first 1.0 percent of employee contributions into the plan and match additional employee contributions pound-for-pound up to 5.0 percent of base salary. We previously matched pound-for-pound up to 5.0 percent of base salary for employee contributions into the defined contribution plan and made an additional non-elective contribution of 5.0 percent of base salary. Also effective July 1, 2014, we increased the non-elective contribution to 6.0 percent of base salary for all eligible employees, and a separate transition contribution was made for all eligible employees through March 31, 2016.

During the years ended December 31, 2016, 2015, and 2014, we recognized costs of $72.2 million, $71.5 million, and $76.0 million, respectively, for our U.S. defined contribution plan and $4.9 million, $5.7 million, and $5.0 million, respectively, for our U.K. defined contribution plan.

Note 10. Stockholders' Equity and Earnings Per Common Share

Earnings Per Common Share

Net income per common share is determined as follows:

(in millions of dollars, except share data)	Year Ended December 31 2016	2015	2014
Numerator			
Net Income	$931.4	$867.1	$402.1
Denominator (000s)			
Weighted Average Common Shares — Basic	235,445.7	246,986.7	255,525.9
Dilution for Assumed Exercises of Stock Options and Nonvested Stock Awards	533.5	868.0	1,126.9
Weighted Average Common Shares — Assuming Dilution	235,979.2	247,854.7	256,652.8
Net Income Per Common Share			
Basic	$ 3.96	$ 3.51	$ 1.57
Assuming Dilution	$ 3.95	$ 3.50	$ 1.57

We use the treasury stock method to account for the effect of outstanding stock options, nonvested restricted stock units, and nonvested performance share units on the computation of diluted earnings per share. Under this method, these potential common shares will each have a dilutive effect, as individually measured, when the average market price of Unum Group common stock during the period exceeds the exercise price of the stock options and the grant price of the nonvested restricted stock units and the nonvested performance share units. The outstanding stock options have exercise prices ranging from $11.37 to $26.29; the nonvested restricted stock units have grant prices ranging from $27.85 to $36.36; and the nonvested performance share units have grant prices ranging from $27.85 to $34.08. See Note 11.

In computing earnings per share assuming dilution, only potential common shares that are dilutive (those that reduce earnings per share) are included. Potential common shares not included in the computation of diluted earnings per share because the impact would be antidilutive, based on then current market prices, approximated 0.4 million, 0.3 million, and 0.1 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Common Stock

Our board of directors has authorized the repurchase of Unum Group's common stock under the following repurchase programs:

	Share Repurchase Program Authorized During		
(in millions of dollars)	May 2016	May 2015	December 2013
Authorized Repurchase Amount	$750.0	$750.0	$750.0
Remaining Repurchase Amount at Year End 2016	$495.7	$ —	$ —

The May 2016 share repurchase program has an expiration date of November 26, 2017.

Common stock repurchases, which are accounted for using the cost method and classified as treasury stock until otherwise retired, were as follows:

	Year Ended December 31		
(in millions)	2016	2015	2014
Shares Repurchased	11.9	12.3	8.7
Cost of Shares Repurchased [1]	$403.3	$426.7	$300.6

(1) Includes commissions of $0.2 million, $0.3 million, and $0.1 million for the years ended December 31, 2016, 2015, and 2014, respectively.

During 2014, we retired 60.0 million shares of our treasury stock with an average total cost of $1,451.7 million.

Preferred Stock

Unum Group has 25.0 million shares of preferred stock authorized with a par value of $0.10 per share. No preferred stock has been issued to date.

Note 11. Stock-Based Compensation

Description of Stock Plans

Under the Stock Incentive Plan of 2012 (the 2012 Plan), up to 20 million shares of common stock are available for awards to our employees, officers, consultants, and directors. Awards may be in the form of stock options, stock appreciation rights, restricted stock, restricted stock units, performance share units, and other stock-based awards. Each full-value award, defined as any award other than a stock option or stock appreciation right, is counted as 1.76 shares. The exercise price for stock options issued cannot be less than the fair value of the underlying common stock as of the grant date. Stock options generally have a term of eight years after the date of grant and fully vest after three years. At December 31, 2016, approximately 14.2 million shares were available for future grants under the 2012 Plan.

Under the Stock Incentive Plan of 2007 (the 2007 Plan), which was terminated in May 2012 for purposes of any further grants, up to 35 million shares of common stock were available for awards to our employees, officers, consultants, and directors. Awards could be in the form of stock options, stock appreciation rights, restricted stock, restricted stock units, performance share units, and other stock-based awards. Each full-value award, defined as any award other than a stock option or stock appreciation right, is counted as 2.7 shares. Awards granted before the termination of the 2007 Plan remain outstanding in accordance with the plan's terms. Stock options generally have a term of eight years after the date of grant and fully vest after three years.

We issue new shares of common stock for all of our stock plan vestings and exercises.

Performance Share Units (PSUs)

Activity for PSUs classified as equity is as follows:

	Shares (000s)	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	383	$35.05
Granted	219	28.41
Vested	(167)	34.79
Forfeited	(6)	32.54
Outstanding at December 31, 2016	429	31.80

During 2016, 2015, and 2014, we issued PSUs with a weighted average grant date fair value per share of $28.41, $35.13, and $34.72, respectively. Vesting for the PSUs occurs at the end of a three-year period and is contingent upon our achievement of prospective company performance goals and our total shareholder return relative to a board-approved peer group during the three-year period. Actual performance, including modification for relative total shareholder return, may result in the ultimate award of 40 to 180 percent of the initial number of PSUs issued, with the potential for no award if company performance goals are not achieved during the three-year period. Forfeitable dividend equivalents on PSUs are accrued in the form of additional PSUs.

PSU shares in the preceding table represent aggregate initial target awards and accrued dividend equivalents and do not reflect potential increases or decreases resulting from the performance factor determined after the end of the performance periods. At December 31, 2016, the three-year performance period for the 2014 PSU grant was completed, but the performance factor had not yet been applied. Vested amounts in the preceding table represent vested PSUs for which the 2014 through 2016 performance factor will be applied during the first quarter of 2017, with distribution of the stock thereafter.

At December 31, 2016, we had approximately $7.4 million of unrecognized compensation cost related to PSUs that will be recognized over a weighted average period of 1.5 years. The estimated compensation expense is adjusted for actual performance experience and is recognized ratably during the service period, or remaining service period, if and when it becomes probable that the performance conditions will be satisfied. Compensation cost for PSUs subject to accelerated vesting at the date of retirement eligibility is recognized over the implicit service period.

The fair value of PSUs is estimated on the date of initial grant using the Monte-Carlo simulation model. Key assumptions used to value PSUs granted during the years shown are as follows:

	Year Ended December 31		
	2016	2015	2014
Expected Volatility (based on our and our peer group historical daily stock prices)	22%	22%	31%
Expected Life (equals the performance period)	3.0 years	3.0 years	3.0 years
Risk Free Interest Rate (based on U.S. Treasury yields at the date of grant)	0.88%	0.91%	0.65%

Restricted Stock Units (RSUs)

Activity for RSUs classified as equity is as follows:

	Shares (000s)	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	866	$32.40
Granted	632	28.80
Vested	(587)	31.22
Forfeited	(33)	30.64
Outstanding at December 31, 2016	878	30.66

During 2016, 2015, and 2014, we issued RSUs with a weighted average grant date fair value per share of $28.80, $34.08, and $33.77, respectively. RSUs vest over a one to three-year service period, beginning at the date of grant, and the compensation cost is recognized ratably during the vesting period. Forfeitable dividend equivalents on RSUs are accrued in the form of additional RSUs. Compensation cost for RSUs subject to accelerated vesting at the date of retirement eligibility is recognized over the implicit service period.

The total fair value of shares vested during 2016, 2015, and 2014 was $18.3 million, $21.4 million, and $19.8 million, respectively. At December 31, 2016, we had $13.0 million of unrecognized compensation cost related to RSUs that will be recognized over a weighted average period of 0.9 years.

Cash-Settled Awards

There were no outstanding cash-settled awards at December 31, 2016 and 2015. All cash-settled awards were fully vested at December 31, 2015. Fully vested awards not distributed in 2015 were paid in 2016.

The amount paid per unit awarded was equal to the price per share of Unum Group's common stock at settlement of the award, and as such, we measured the value of the award each reporting period based on the current stock price. The effects of changes in the stock price during the service period were recognized as compensation cost over the service period. Changes in the amount of the liability due to stock price changes after the service period were recognized as compensation cost during the period in which the changes occurred. At December 31, 2016, we had no unrecognized compensation cost related to cash-settled awards.

	Year Ended December 31		
(in millions of dollars, except per unit data)	2016	2015	2014
Weighted Average Grant Date Fair Value per Unit Granted	$ —	$33.92	$33.85
Total Fair Value of Units Vested	$ —	$ 4.9	$ 2.1
Total Fair Value of Units Paid	$2.4	$ 2.5	$ 2.9

Stock Options

Stock option activity is summarized as follows:

	Shares (000s)	Weighted Average Exercise Price	Remaining Contractual Term (in years)	Intrinsic Value (in millions)
Outstanding at December 31, 2015	759	$23.02		
Exercised	(242)	21.01		
Outstanding at December 31, 2016	517	23.97	2.7	$10.3
Exercisable at December 31, 2016	517	$23.97	2.7	$10.3

All outstanding stock options at December 31, 2016 have vested. Stock options vest over a one to three-year service period, beginning at the date of grant, and the compensation cost is recognized ratably during the vesting period. Compensation cost for stock options subject to accelerated vesting at the date of retirement eligibility is recognized over the implicit service period. At December 31, 2016, we had no unrecognized compensation cost related to stock options.

The intrinsic value of options exercised and fair value of options vested are as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Total Intrinsic Value of Options Exercised	$3.4	$5.6	$4.0
Total Fair Value of Options Vested	$0.1	$1.1	$2.4

There were no stock options granted in the years 2014 through 2016.

Expense

Compensation expense for the stock plans, as reported in our consolidated statements of income, is as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Performance Share Units	$ 6.6	$ 4.5	$ 2.5
Restricted Stock Units and Cash-Settled Awards	14.9	18.6	19.0
Stock Options	—	0.2	0.6
Other	0.4	0.5	0.5
Total Compensation Expense, Before Income Tax	$21.9	$23.8	$22.6
Total Compensation Expense, Net of Income Tax	$14.4	$15.7	$14.9

Cash received under all share-based payment arrangements for the years ended December 31, 2016, 2015, and 2014 was $8.5 million, $6.4 million, and $12.3 million, respectively.

Note 12. Reinsurance

Thirteen major companies account for approximately 91 percent of our reinsurance recoverable at December 31, 2016, and all are rated A or better by A.M. Best Company (AM Best) or are fully securitized by letters of credit or investment-grade fixed maturity securities held in trust. Approximately eight percent of our reinsurance recoverable relates to business reinsured either with companies rated A- or better by AM Best, with overseas entities with equivalent ratings or backed by letters of credit or trust agreements, or through reinsurance arrangements wherein we retain the assets in our general account. The remaining one percent of our reinsurance recoverable is held by companies either rated below A- by AM Best or not rated.

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Direct Premium Income	$8,385.0	$8,151.9	$7,899.3
Reinsurance Assumed	236.3	202.8	189.8
Reinsurance Ceded	(263.6)	(272.3)	(291.9)
Net Premium Income	$8,357.7	$8,082.4	$7,797.2
Ceded Benefits and Change in Reserves for Future Benefits	$ 648.3	$ 662.7	$ 662.7

Effective October 1, 2016, we entered into a reinsurance agreement under which we ceded 30 percent of the risk for certain blocks of Unum US individual disability policies, as well as some related claims development risk for a limited period of time. The agreement is on a non-proportional modified coinsurance basis with a provision for experience refunds.

Note 13. Segment Information

We have three principal operating business segments: Unum US, Unum UK, and Colonial Life. Our other segments are Closed Block and Corporate.

The Unum US segment includes group long-term and short-term disability insurance, group life and accidental death and dismemberment products, and supplemental and voluntary lines of business. The supplemental and voluntary lines of business are comprised of individual disability, voluntary benefits, and dental and vision products. These products are marketed through our field sales personnel who work in conjunction with independent brokers and consultants.

The Unum UK segment includes insurance for group long-term disability, group life, and supplemental lines of business, which include dental, individual disability, and critical illness products. Unum UK's products are sold primarily in the United Kingdom through field sales personnel and independent brokers and consultants.

The Colonial Life segment includes insurance for accident, sickness, and disability products, life products, and cancer and critical illness products marketed to employees, on both a group and an individual basis, at the workplace through an independent contractor agency sales force and brokers.

The Closed Block segment consists of individual disability, group and individual long-term care, and other insurance products no longer actively marketed. The individual disability line of business in this segment generally consists of policies we sold prior to the mid-1990s and entirely discontinued selling in 2004, other than update features contractually allowable on existing policies. We discontinued offering individual long-term care in 2009 and group long-term care in 2012. Other insurance products include group pension, individual life and corporate-owned life insurance, reinsurance pools and management operations, and other miscellaneous product lines.

The Corporate segment includes investment income on corporate assets not specifically allocated to a line of business, interest expense on corporate debt other than non-recourse debt, and certain other corporate income and expense not allocated to a line of business.

Acquisitions of Business

In August 2016, we acquired 100 percent of the shares and voting interests in H&J Capital, L.L.C., parent of Starmount Life Insurance Company and AlwaysCare Benefits (Starmount), for a total cash purchase price of $140.3 million plus contingent cash consideration of $10.0 million to be paid in two increments of $5.0 million each, at 18 and 24 months from the date of acquisition upon satisfaction of certain conditions. Starmount Life Insurance Company is an independent provider of dental and vision insurance in the U.S. workplace, and AlwaysCare Benefits is a nationally licensed, third-party administrator. The acquisition of Starmount will broaden our employee benefit offerings in the U.S. Starmount's dental and vision products and new dental and vision products to be marketed by Unum US are reported in our Unum US segment within our supplemental and voluntary product lines. Colonial Life dental and vision products are expected to be introduced in 2018 and will be reported in our Colonial Life segment.

Starmount's revenues totaled $129.9 million in 2015. Total assets were valued at $93.1 million as of the acquisition date and were primarily comprised of bonds, cash, accounts receivable, and intangible assets attributable to the value of business acquired and the value of existing state licenses. Total liabilities were valued at $55.7 million as of the acquisition date and were primarily comprised of outstanding claim liabilities and reserves for future claims. The total purchase price exceeded the fair value of the identifiable net assets by $111.2 million and has been identified as goodwill, primarily attributable to the value of adding dental and vision to our current employee benefit offerings. Goodwill was allocated to the reporting units expected to benefit from the acquisition. Approximately 75 percent was allocated to our Unum US supplemental and voluntary product lines and approximately 25 percent to Colonial Life. The goodwill is not deductible for income tax purposes except upon disposition of the acquired entity. This acquisition, the results of which are included in our consolidated financial statements for the period subsequent to the date of acquisition, did not have a material impact on revenue or operating results for 2016.

In September 2015, we acquired 100 percent of the common shares and voting interests in National Dental Plan Limited and associated companies (National Dental) for a total cash purchase price of £35.9 million or $54.3 million. National Dental, a provider of dental insurance in the U.K. workplace, is reported in our Unum UK segment as part of our supplemental product line. The acquisition of National Dental extends our market reach, broadening our employee benefit offerings in the U.K. National Dental's revenues totaled £14.7 million, or $24.2 million, in 2014. Total assets were £18.6 million, or $28.1 million as of the acquisition date, and were primarily comprised of short-term investments, accounts receivable, and intangible assets attributable to benefits derived from National Dental's customer relationships and dental provider network. Total liabilities were £5.0 million, or $7.5 million as of the acquisition date, and were primarily comprised of outstanding claims liabilities, unearned premiums, and a deferred tax liability. The purchase price exceeded the fair value of the identifiable net assets by £22.3 million, or $33.7 million, and has been identified as goodwill, primarily attributable to the value of adding dental to our current employee benefit offerings. The goodwill is not deductible for income tax purposes except upon disposition of the acquired entity. This acquisition, the results of which are included in our consolidated financial statements for the period subsequent to the date of acquisition, did not have a material impact on revenue or operating results for 2015.

Segment information is as follows:

(in millions of dollars)	Year Ended December 31 2016	2015	2014
Premium Income			
Unum US			
Group Disability			
Group Long-term Disability	$1,726.6	$1,644.7	$1,553.5
Group Short-term Disability	626.1	607.4	558.1
Group Life and Accidental Death & Dismemberment			
Group Life	1,410.0	1,347.4	1,262.3
Accidental Death & Dismemberment	140.3	131.7	125.9
Supplemental and Voluntary			
Individual Disability	480.3	478.9	466.1
Voluntary Benefits	796.5	749.9	693.8
Dental and Vision	61.1	—	—
	5,240.9	4,960.0	4,659.7
Unum UK			
Group Long-term Disability	355.2	397.4	418.9
Group Life	105.7	121.5	133.2
Supplemental	68.4	57.3	55.1
	529.3	576.2	607.2
Colonial Life			
Accident, Sickness, and Disability	830.0	789.0	759.8
Life	273.8	252.4	231.8
Cancer and Critical Illness	313.3	297.2	282.1
	1,417.1	1,338.6	1,273.7
Closed Block			
Individual Disability	521.9	572.4	624.8
Long-term Care	643.9	633.5	630.9
All Other	4.6	1.7	0.9
	1,170.4	1,207.6	1,256.6
Total Premium Income	$8,357.7	$8,082.4	$7,797.2

(in millions of dollars)	Unum US	Unum UK	Colonial Life	Closed Block	Corporate	Total
Year Ended December 31, 2016						
Premium Income	$5,240.9	$529.3	$1,417.1	$1,170.4	$ —	$ 8,357.7
Net Investment Income	828.7	118.1	141.5	1,352.2	18.5	2,459.0
Other Income	113.3	0.2	1.2	86.0	4.9	205.6
Operating Revenue	$6,182.9	$647.6	$1,559.8	$2,608.6	$ 23.4	$11,022.3
Operating Income (Loss)	$ 914.2	$128.6	$ 314.2	$ 129.5	$(146.7)	$ 1,339.8
Interest and Debt Expense	$ —	$ —	$ —	$ 6.9	$ 159.1	$ 166.0
Depreciation and Amortization	$ 353.0	$ 16.4	$ 222.9	$ 6.9	$ 1.0	$ 600.2
Year Ended December 31, 2015						
Premium Income	$ 4,960.0	$ 576.2	$ 1,338.6	$ 1,207.6	$ —	$ 8,082.4
Net Investment Income	865.3	124.9	145.4	1,320.0	25.6	2,481.2
Other Income	119.2	—	0.1	89.3	2.9	211.5
Operating Revenue	$ 5,944.5	$ 701.1	$ 1,484.1	$ 2,616.9	$ 28.5	$ 10,775.1
Operating Income (Loss)	$ 850.0	$ 140.6	$ 309.1	$ 119.1	$ (124.8)	$ 1,294.0
Interest and Debt Expense	$ —	$ —	$ —	$ 6.6	$ 146.2	$ 152.8
Depreciation and Amortization	$ 347.0	$ 18.0	$ 214.6	$ 6.6	$ 0.9	$ 587.1
Year Ended December 31, 2014						
Premium Income	$ 4,659.7	$ 607.2	$ 1,273.7	$ 1,256.6	$ —	$ 7,797.2
Net Investment Income	878.9	151.0	145.5	1,281.5	35.3	2,492.2
Other Income	122.1	—	0.1	91.8	5.0	219.0
Operating Revenue	$ 5,660.7	$ 758.2	$ 1,419.3	$ 2,629.9	$ 40.3	$ 10,508.4
Operating Income (Loss)	$ 844.9	$ 147.8	$ 299.0	$ 120.0	$ (104.4)	$ 1,307.3
Interest and Debt Expense Excluding Costs Related to Early Retirement of Debt	$ —	$ —	$ —	$ 7.3	$ 147.0	$ 154.3
Depreciation and Amortization	$ 314.2	$ 19.2	$ 194.1	$ 5.9	$ 1.0	$ 534.4

(in millions of dollars)	Unum US	Unum UK	Colonial Life	Total
Deferred Acquisition Costs				
Year Ended December 31, 2016				
Beginning of Year	$1,136.4	$ 27.1	$ 845.0	$2,008.5
Capitalization	314.1	8.2	270.1	592.4
Amortization	(275.2)	(9.7)	(208.1)	(493.0)
Adjustment Related to Unrealized Investment Gains and Losses	1.2	—	(10.7)	(9.5)
Foreign Currency	—	(4.2)	—	(4.2)
End of Year	$1,176.5	$ 21.4	$ 896.3	$2,094.2
Year Ended December 31, 2015				
Beginning of Year	$ 1,096.5	$ 30.4	$ 774.4	$ 1,901.3
Capitalization	307.3	9.6	252.8	569.7
Amortization	(272.3)	(11.3)	(198.7)	(482.3)
Adjustment Related to Unrealized Investment Gains and Losses	4.9	—	16.5	21.4
Foreign Currency	—	(1.6)	—	(1.6)
End of Year	$ 1,136.4	$ 27.1	$ 845.0	$ 2,008.5
Year Ended December 31, 2014				
Beginning of Year	$ 1,051.5	$ 34.3	$ 743.4	$ 1,829.2
Capitalization	292.7	10.5	220.8	524.0
Amortization	(248.1)	(12.5)	(180.2)	(440.8)
Adjustment Related to Unrealized Investment Gains and Losses	0.4	—	(9.6)	(9.2)
Foreign Currency	—	(1.9)	—	(1.9)
End of Year	$ 1,096.5	$ 30.4	$ 774.4	$ 1,901.3

	December 31	
(in millions of dollars)	2016	2015
Assets		
Unum US	$18,036.6	$18,242.4
Unum UK	3,101.4	3,432.4
Colonial Life	3,923.2	3,776.8
Closed Block	33,734.3	33,000.9
Corporate	3,146.0	2,111.1
Total Assets	$61,941.5	$60,563.6

Revenue is primarily derived from sources in the United States and the United Kingdom. There are no material revenues or assets attributable to foreign operations other than those reported in our Unum UK segment.

We report goodwill in our Unum US, Unum UK, and Colonial Life segments, which are the segments expected to benefit from the originating business combinations. At December 31, 2016 and 2015, goodwill was $335.1 million and $230.9 million, respectively, with $271.1 million and $187.6 million, respectively, attributable to Unum US, $36.3 million and $43.3 million, respectively, attributable to Unum UK, and $27.7 million in 2016 attributable to Colonial Life. Changes in the goodwill balances for our Unum US and Colonial Life segments are attributable to the acquisition of Starmount, while changes in our Unum UK segment result from fluctuation in foreign currency exchange rates.

Stockholders' equity is allocated to the operating segments on the basis of an internal allocation formula that reflects the volume and risk components of each operating segment's business and aligns allocated equity with our target capital levels for regulatory and rating agency purposes. We modify this formula periodically to recognize changes in the views of capital requirements.

We measure and analyze our segment performance on the basis of "operating revenue" and "operating income" or "operating loss", which differ from total revenue and income before income tax as presented in our consolidated statements of income due to the exclusion of net realized investment gains and losses and non-operating retirement-related gains or losses as specified in the reconciliations below. We believe operating revenue and operating income or loss are better performance measures and better indicators of the revenue and profitability and underlying trends in our business. These performance measures are in accordance with GAAP guidance for segment reporting, but they should not be viewed as a substitute for total revenue, income before income tax, or net income.

Realized investment gains or losses depend on market conditions and do not necessarily relate to decisions regarding the underlying business of our segments. Our investment focus is on investment income to support our insurance liabilities as opposed to the generation of realized investment gains or losses. Although we may experience realized investment gains or losses which will affect future earnings levels, a long-term focus is necessary to maintain profitability over the life of the business since our underlying business is long-term in nature, and we need to earn the interest rates assumed in calculating our liabilities.

The amortization of prior period actuarial gains or losses, a component of the net periodic benefit cost for our pensions and other postretirement benefit plans, is driven by market performance as well as plan amendments and is not indicative of the operational results of our businesses. We believe that excluding the amortization of prior period gains or losses, as well as the 2014 settlement loss resulting from our pension plan amendment, from operating income or loss provides investors with additional information for comparison and analysis of our operating results. Although we manage our non-operating retirement-related gains or losses separately from the operational performance of our business, these gains or losses impact the overall profitability of our company and have historically increased or decreased over time, depending on plan amendments and market conditions and the resulting impact on the actuarial gains or losses in our pensions and other postretirement benefit plans.

We believe that excluding the 2014 costs related to the early retirement of debt is appropriate because in conjunction with the debt redemption, we recognized in realized investment gains and losses a deferred gain from previously terminated derivatives which were associated with the hedge of this debt. The amount recognized as a realized investment gain, which basically offsets the cost of the debt redemption, is also excluded from our non-GAAP financial measures since we analyze our performance excluding amounts reported as realized investment gains or losses. We believe it provides investors with a more realistic view of our overall profitability if we are consistent in excluding both the cost of the debt retirement as well as the gain on the hedge of the debt.

We may at other times exclude certain other items from our discussion of financial ratios and metrics in order to enhance the understanding and comparability of our operational performance and the underlying fundamentals, but this exclusion is not an indication that similar items may not recur and does not replace net income or net loss as a measure of our overall profitability.

A reconciliation of total revenue to "operating revenue" and income before income tax to "operating income" is as follows:

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Total Revenue	$11,046.5	$10,731.3	$10,524.5
Excluding:			
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1
Operating Revenue	$11,022.3	$10,775.1	$10,508.4
Income Before Income Tax	$ 1,347.7	$ 1,238.3	$ 542.0
Excluding:			
Net Realized Investment Gain (Loss)	24.2	(43.8)	16.1
Non-operating Retirement-related Loss	(16.3)	(11.9)	(70.0)
Costs Related to Early Retirement of Debt for Corporate	—	—	(13.2)
Long-term Care Reserve Increase for Closed Block	—	—	(698.2)
Operating Income	$ 1,339.8	$ 1,294.0	$ 1,307.3

Note 14. Commitments and Contingent Liabilities

Commitments

We have noncancelable lease obligations on certain office space and equipment. As of December 31, 2016, the aggregate net minimum lease payments were $189.6 million payable as follows: $50.8 million in 2017, $25.8 million in 2018, $22.5 million in 2019, $18.0 million in 2020, $13.9 million in 2021, and $58.6 million thereafter. Rental expense for the years ended December 31, 2016, 2015, and 2014 was $51.4 million, $42.5 million, and $44.2 million, respectively.

At December 31, 2016, we had unfunded commitments of $314.0 million for certain of our investments, the amount of which may or may not be funded.

Contingent Liabilities

We are a defendant in a number of litigation matters. In some of these matters, no specified amount is sought. In others, very large or indeterminate amounts, including punitive and treble damages, are asserted. There is a wide variation of pleading practice permitted in the United States courts with respect to requests for monetary damages, including some courts in which no specified amount is required and others which allow the plaintiff to state only that the amount sought is sufficient to invoke the jurisdiction of that court. Further, some jurisdictions permit plaintiffs to allege damages well in excess of reasonably possible verdicts. Based on our extensive experience and that of others in the industry with respect to litigating or resolving claims through settlement over an extended period of time, we believe that the monetary damages asserted in a lawsuit or claim bear little relation to the merits of the case, or the likely disposition value. Therefore, the specific monetary relief sought is not stated.

Unless indicated otherwise in the descriptions below, reserves have not been established for litigation and contingencies. An estimated loss is accrued when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated.

Claims Handling Matters

We and our insurance subsidiaries, in the ordinary course of our business, are engaged in claim litigation where disputes arise as a result of a denial or termination of benefits. Most typically these lawsuits are filed on behalf of a single claimant or policyholder, and in some of these individual actions punitive damages are sought, such as claims alleging bad faith in the handling of insurance claims. For our general claim litigation, we maintain reserves based on experience to satisfy judgments and settlements in the normal course. We expect that the ultimate liability, if any, with respect to general claim litigation, after consideration of the reserves maintained, will not be material to our consolidated financial condition. Nevertheless, given the inherent unpredictability of litigation, it is possible that an adverse outcome in certain claim litigation involving punitive damages could, from time to time, have a material adverse effect on our consolidated results of operations in a period, depending on the results of operations for the particular period.

From time to time class action allegations are pursued where the claimant or policyholder purports to represent a larger number of individuals who are similarly situated. Since each insurance claim is evaluated based on its own merits, there is rarely a single act or series of actions which can properly be addressed by a class action. Nevertheless, we monitor these cases closely and defend ourselves appropriately where these allegations are made.

Miscellaneous Matters

Beginning in 2011, a number of state regulators began requiring insurers to cross-check specified insurance policies with the Social Security Administration's Death Master File to identify potential matches. If a potential match was identified, insurers were requested to determine if benefits were due, locate beneficiaries, and make payments where appropriate. We initiated this process where requested, and in 2012 we began implementing this process in all states on a forward-looking basis. In addition to implementing this on a forward-looking basis, in 2013 we began an initiative to search for potential claims from previous years. During 2013, we completed our assessment of benefits which we estimate will be paid under this initiative, and as such, established additional reserves for payment of these benefits. Similar to other insurers, we are undergoing an examination by a third party acting on behalf of a number of state treasurers concerning our compliance with the unclaimed property laws of the participating states. We are cooperating fully with this examination, as well as with a Delaware Market Conduct examination involving the same issue. The legal and regulatory environment around unclaimed death benefits continues to evolve. It is possible that the current examination and/or similar investigations by other state jurisdictions may result in additional payments to beneficiaries, the payment of abandoned funds under state law, and/or administrative penalties, the total of which may be in excess of the reserves established.

In December 2012, State of West Virginia ex rel. John D. Perdue v. Provident Life and Accident Insurance Company and State of West Virginia ex rel. John D. Perdue v. Colonial Life & Accident Insurance Company were filed in the Circuit Court of Putnam County, West Virginia. These two separate complaints alleged violations of the West Virginia Uniform Unclaimed Property Act by failing to identify and report all unclaimed insurance policy proceeds due to be escheated to West Virginia. The complaints sought to examine company records and assess penalties and costs in an undetermined amount. In December 2013, the court dismissed both complaints, holding that the West Virginia Uniform Unclaimed Property Act does not require insurance companies to periodically search the Social Security Administrations' Death Master File or escheat unclaimed life insurance benefits until a claim has been submitted. In January 2014, the plaintiff appealed the dismissal of both complaints. In June 2015, the appellate court reinstated the case, holding that the West Virginia Uniform Unclaimed Property Act requires insurers to make reasonable efforts to determine whether their insureds are still living. The case was remanded to the trial court where we answered the complaints. In December 2016, we filed a motion to dismiss as a result of legislation enacted after the appellate court's decision in 2015. A hearing on that motion is scheduled for March 2017.

In May 2013, a purported class action complaint was filed in the Superior Court of California, County of Los Angeles. The plaintiff sought to represent a class of California insureds who were issued long-term care policies containing an inflation protection feature. The plaintiff alleged we incorrectly administered the inflation protection feature, resulting in an underpayment of benefits. The complaint made allegations against us for breach of contract, bad faith, fraud, violation of Business and Professions Code 17200, and injunctive relief. We removed the case to the United States District Court for the Central District of California, and plaintiff filed an amended complaint on behalf of a nationwide class of insureds who were issued long-term care policies containing an inflation protection feature. After we answered the complaint, the court permitted the plaintiff to file another amended complaint entitled Michael Don, Executor of The Estate of Ruben Don, Leroy Little, by and through his Guardian ad Litem Tamara Pelham, and Carolyn Little v. Unum Group, and Unum Life Insurance Company of America containing similar allegations. In April 2015, we again answered the complaint. The plaintiffs filed a motion seeking certification of five subclasses, and we filed our opposition. In February 2016, the plaintiffs filed a motion for preliminary approval of settlement for a class of certain insureds issued long-term care policies containing an inflation protection feature as well as certain insureds who requested copies of their long-term care policies. In July 2016, the court issued a final order approving the settlement and dismissing the case. We adjusted our previously accrued estimated loss contingency as a result of the final settlement, the amount of which was immaterial to our consolidated financial position and results of operations.

In 2009, a Pennsylvania-based insurance company and its affiliates were ordered into rehabilitation, and the Pennsylvania Insurance Commissioner, who was appointed as the Rehabilitator, filed petitions for liquidation with the Commonwealth Court of Pennsylvania. Under Pennsylvania law, payment of covered claims and other related insurance obligations are provided, within prescribed limits, by state guaranty associations. These guaranty associations assess fees to meet these obligations on insurance companies that sell insurance within the state, which are generally based on a company's pro rata portion of average premiums written or received for several years prior to the insolvency. Under Pennsylvania statutes, an insurer is declared insolvent only after it is placed under an order of liquidation by a court of competent jurisdiction with a finding for insolvency. We expect the formal order of liquidation to be issued during the first quarter of 2017, and as such, we would then be subject to an assessment by those guaranty associations that are responsible for policyholder claims. In the period during which the formal order of liquidation is issued, we expect to accrue an estimated loss contingency in the range of $12 million to $15 million. This amount is net of expected recoverable premium tax offsets and net of income tax. We do not believe our exposure to potential assessment is material to our consolidated financial position, cash flows, or results of operations.

Summary

Various lawsuits against us, in addition to those discussed above, have arisen in the normal course of business. Further, state insurance regulatory authorities and other federal and state authorities regularly make inquiries and conduct investigations concerning our compliance with applicable insurance and other laws and regulations.

Given the complexity and scope of our litigation and regulatory matters, it is not possible to predict the ultimate outcome of all pending investigations or legal proceedings or provide reasonable estimates of potential losses, except if noted in connection with specific matters. It is possible that our results of operations or cash flows in a particular period could be materially affected by an ultimate unfavorable outcome of pending litigation or regulatory matters depending, in part, on our results of operations or cash flows for the particular period. We believe, however, that the ultimate outcome of all pending litigation and regulatory matters, after consideration of applicable reserves and rights to indemnification, should not have a material adverse effect on our financial position.

Note 15. Statutory Financial Information

Statutory Net Income, Capital and Surplus, and Dividends

Statutory net income for U.S. life insurance companies is reported in conformity with statutory accounting principles prescribed by the National Association of Insurance Commissioners (NAIC) and adopted by applicable domiciliary state laws. The commissioners of the states of domicile have the right to permit other specific practices that may deviate from prescribed practices. Our traditional U.S. life insurance subsidiaries have no prescribed or permitted statutory accounting practices that differ materially from statutory accounting principles prescribed by the NAIC.

Certain of our traditional U.S. life insurance subsidiaries cede blocks of business to Northwind Re and Fairwind Insurance Company (Fairwind), both of which are affiliated captive reinsurance subsidiaries (captive reinsurers) domiciled in the United States, with Unum Group as the ultimate parent. These captive reinsurers were established for the limited purpose of reinsuring risks attributable to specified policies issued or reinsured by our life insurance subsidiaries. During 2015, Tailwind Reinsurance Company (Tailwind Re), also an affiliated captive reinsurance subsidiary domiciled in the United States, merged with one of our traditional U.S. life insurance subsidiaries, with the traditional U.S. life insurance subsidiary remaining as the surviving company. Following the merger, the majority of the block of business previously ceded to Tailwind Re was ceded to an unaffiliated reinsurer. These two transactions did not materially impact the statutory results of operations, capital adequacy, or ability of our insurance subsidiaries to pay dividends to Unum Group.

Fairwind, which is domiciled in the State of Vermont, is required to follow GAAP in accordance with Vermont reporting requirements for pure captive insurance companies, unless the commissioner permits the use of some other basis of accounting. Fairwind has permission from Vermont to follow accounting practices that are generally consistent with current NAIC statutory accounting principles for its insurance reserves and invested assets supporting reserves. All other assets and liabilities are accounted for in accordance with GAAP, as prescribed by Vermont, which allows for the full recognition of deferred tax assets which are more likely than not to be realized. Statutory accounting principles have a stricter limitation for the recognition of deferred tax assets. The impact of following the prescribed and permitted practices of Vermont rather than statutory accounting principles prescribed by the NAIC resulted in higher capital and surplus for Fairwind of approximately $213 million and $208 million as of December 31, 2016 and 2015, respectively. Northwind Re has no material state prescribed accounting practices that differ from statutory accounting principles prescribed by the NAIC.

The operating results and capital and surplus of our traditional U.S. life insurance subsidiaries and our captive reinsurers, prepared in accordance with prescribed or permitted accounting practices of the NAIC or states of domicile, are presented separately below.

	Year Ended December 31		
(in millions of dollars)	2016	2015	2014
Combined Net Income (Loss)			
Traditional U.S. Life Insurance Subsidiaries	$855.1	$653.7	$ 628.9
Captive Reinsurers	$ 48.4	$ (56.3)	$ (129.3)
Combined Net Gain (Loss) from Operations			
Traditional U.S. Life Insurance Subsidiaries	$884.6	$689.2	$ 623.9
Captive Reinsurers	$ 50.6	$ (54.3)	$ (130.2)

	December 31	
(in millions of dollars)	2016	2015
Combined Capital and Surplus		
Traditional U.S. Life Insurance Subsidiaries	$3,626.9	$3,470.3
Captive Reinsurers	$1,726.7	$1,672.3

As derived from the most recent annual statutory basis financial statements filed with insurance regulators, the statutory net income and statutory capital and surplus of our United Kingdom insurance subsidiary, Unum Limited, were £60.6 million and £441.5 million, respectively.

Risk-based capital (RBC) standards for U.S. life insurance companies are prescribed by the NAIC. The domiciliary states of our U.S. insurance subsidiaries have all adopted a version of the RBC model formula of the NAIC, which prescribes a system for assessing the adequacy of statutory capital and surplus for all life and health insurers. The basis of the system is a risk-based formula that applies prescribed factors to the various risk elements in a life and health insurer's business to report a minimum capital requirement proportional to the amount of risk assumed by the insurer. The life and health RBC formula is designed to measure annually (i) the risk of loss from asset defaults and asset value fluctuations, (ii) the risk of loss from adverse mortality and morbidity experience, (iii) the risk of loss from mismatching of asset and liability cash flow due to changing interest rates, and (iv) business risks. The formula is used as an early warning tool to identify companies that are potentially inadequately capitalized. State insurance laws grant insurance regulators the authority to require various actions by, or take various actions against, insurers whose total adjusted capital does not meet or exceed certain RBC levels. The total adjusted capital of each of our U.S. insurance subsidiaries at December 31, 2016 is in excess of those RBC levels.

Restrictions under applicable state insurance laws limit the amount of dividends that can be paid to a parent company from its insurance subsidiaries in any 12-month period without prior approval by regulatory authorities. For life insurance companies domiciled in the U.S., that limitation generally equals, depending on the state of domicile, either ten percent of an insurer's statutory surplus with respect to policyholders as of the preceding year end or the statutory net gain from operations, excluding realized investment gains and losses, of the preceding year. The payment of dividends to a parent company from a life insurance subsidiary is generally further limited to the amount of unassigned funds.

Based on the restrictions under current law, $859.3 million is available, without prior approval by regulatory authorities, during 2017 for the payment of dividends to Unum Group from its traditional U.S. life insurance subsidiaries. The ability of our captive insurers to pay dividends to their respective parent companies will depend on their satisfaction of applicable regulatory requirements and on the performance of the business reinsured.

We also have the ability to receive dividends from Unum Limited, subject to applicable insurance company regulations and capital guidance in the United Kingdom. As of January 1, 2016, Solvency II, a European Union directive that prescribes new capital requirements and risk management standards for the European insurance industry, replaced the previous capital requirements for Unum Limited. There was no material change to capital requirements or to solvency ratios. We have £271.0 million available for the payment of dividends from Unum Limited during 2017, subject to regulatory approval.

Deposits

At December 31, 2016 and 2015, our U.S. insurance subsidiaries had on deposit with U.S. regulatory authorities securities with a book value of $194.9 million and $284.1 million, respectively, held for the protection of policyholders.

Note 16. Quarterly Results of Operations (Unaudited)

The following is a summary of our unaudited quarterly results of operations for 2016 and 2015:

	2016			
(in millions of dollars, except share data)	4th	3rd	2nd	1st
Premium Income	$2,099.2	$2,089.4	$2,081.6	$2,087.5
Net Investment Income	617.9	611.4	623.3	606.4
Net Realized Investment Gain (Loss)	28.4	11.0	5.3	(20.5)
Total Revenue	2,796.5	2,763.3	2,761.3	2,725.4
Income Before Income Tax	371.2	332.1	340.2	304.2
Net Income	248.0	236.0	236.8	210.6
Net Income Per Common Share				
Basic	1.07	1.01	1.00	0.88
Assuming Dilution	1.07	1.01	1.00	0.88

	2015			
(in millions of dollars, except share data)	4th	3rd	2nd	1st
Premium Income	$2,037.8	$2,020.8	$2,017.5	$2,006.3
Net Investment Income	636.4	612.1	630.7	602.0
Net Realized Investment Gain (Loss)	(2.7)	(26.6)	0.8	(15.3)
Total Revenue	2,722.4	2,657.8	2,703.7	2,647.4
Income Before Income Tax	316.6	298.9	319.8	303.0
Net Income	226.1	203.8	224.3	212.9
Net Income Per Common Share				
Basic	0.93	0.83	0.90	0.85
Assuming Dilution	0.93	0.83	0.90	0.84

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Unum Group

We have audited the accompanying consolidated balance sheets of Unum Group and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2016. These financial statements and schedules are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedules based on our 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Unum Group and subsidiaries at December 31, 2016 and 2015, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedules, when considered in relation to the basic financial statements taken as a whole, present fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Unum Group and subsidiaries' internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 22, 2017, expressed an unqualified opinion thereon.

Ernst & Young LLP

Chattanooga, Tennessee
February 22, 2017

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended. The Company's internal control over financial reporting encompasses the processes and procedures management has established to (i) maintain records that, in reasonable detail, accurately and fairly reflect the Company's transactions and dispositions of assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles; (iii) provide reasonable assurance that receipts and expenditures are appropriately authorized; and (iv) 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. In addition, any projection of the evaluation of effectiveness to future periods is 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.

As permitted by the Securities and Exchange Commission, we have excluded from the scope of our assessment of internal control over financial reporting the operations and related assets and stockholders' equity of Starmount, which we acquired in 2016. At December 31, 2016, total assets and total stockholders' equity subject to Starmount's internal control over financial reporting constituted $216.9 million and $160.6 million of the Company's total assets and total stockholder's equity, respectively, while total revenues and net income constituted $69.1 million and $1.9 million of the Company's total revenues and net income, respectively, for the period from acquisition through December 31, 2016.

We assessed the effectiveness of our internal control over financial reporting, based on criteria established in the 2013 Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, and concluded that, as of December 31, 2016, we maintained effective internal control over financial reporting.

Attestation Report of the Company's Registered Public Accounting Firm

Ernst & Young LLP, the independent registered public accounting firm that audited our consolidated financial statements included herein, audited the effectiveness of our internal control over financial reporting, as of December 31, 2016, and issued the attestation report included as follows.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Unum Group

We have audited Unum Group and subsidiaries' internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Unum Group and subsidiaries' management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying "Management's Annual Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

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

As indicated in the accompanying Management's Annual Report on Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Starmount, which is included in the 2016 consolidated financial statements of Unum Group and subsidiaries and constituted $216.9 million and $160.6 million of total assets and total stockholders' equity, respectively, as of December 31, 2016 and $69.1 million and $1.9 million of total revenues and net income, respectively, for the period from the acquisition through December 31, 2016. Our audit of internal control over financial reporting of Unum Group and subsidiaries also did not include an evaluation of the internal control over financial reporting of Starmount.

In our opinion, Unum Group and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Unum Group and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2016, and our report dated February 22, 2017 expressed an unqualified opinion thereon.



Chattanooga, Tennessee
February 22, 2017

Cautionary Statement Regarding Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 (the Act) provides a "safe harbor" to encourage companies to provide prospective information, as long as those statements are identified as forward-looking and are accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those included in the forward-looking statements. Certain information contained in this Annual Report or in any other written or oral statements made by us in communications with the financial community or contained in documents filed with the Securities and Exchange Commission, may be considered forward-looking statements within the meaning of the Act. Forward-looking statements are those not based on historical information, but rather relate to our outlook, future operations, strategies, financial results, or other developments. Forward-looking statements speak only as of the date made. We undertake no obligation to update these statements, even if made available on our website or otherwise. These statements may be made directly in this document or may be made part of this document by reference to other documents filed by us with the Securities and Exchange Commission, a practice which is known as "incorporation by reference." You can find many of these statements by looking for words such as "will," "may," "should," "could," "believes," "expects," "anticipates," "estimates," "plans," "assumes," "intends," "projects," "goals," "objectives," or similar expressions in this document or in documents incorporated herein.

These forward-looking statements are subject to numerous assumptions, risks, and uncertainties, many of which are beyond our control. We caution readers that the following factors, in addition to other factors mentioned from time to time, may cause actual results to differ materially from those contemplated by the forward-looking statements:

- Sustained periods of low interest rates.
- Fluctuation in insurance reserve liabilities and claim payments due to changes in claim incidence, recovery rates, mortality and morbidity rates, and policy benefit offsets due to, among other factors, the rate of unemployment and consumer confidence, the emergence of new diseases, epidemics, or pandemics, new trends and developments in medical treatments, the effectiveness of our claims operational processes, and changes in government programs.
- Unfavorable economic or business conditions, both domestic and foreign.
- Legislative, regulatory, or tax changes, both domestic and foreign, including the effect of potential legislation and increased regulation in the current political environment.
- Investment results, including, but not limited to, changes in interest rates, defaults, changes in credit spreads, impairments, and the lack of appropriate investments in the market which can be acquired to match our liabilities.
- A cyber attack or other security breach could result in the unauthorized acquisition of confidential data.
- The failure of our business recovery and incident management processes to resume our business operations in the event of a natural catastrophe, cyber attack, or other event.
- Increased competition from other insurers and financial services companies due to industry consolidation, new entrants to our markets, or other factors.
- Execution risk related to our technology needs.
- Changes in our financial strength and credit ratings.
- Damage to our reputation due to, among other factors, regulatory investigations, legal proceedings, external events, and/or inadequate or failed internal controls and procedures.
- Actual experience that deviates from our assumptions used in pricing, underwriting, and reserving.
- Actual persistency and/or sales growth that is higher or lower than projected.
- Changes in demand for our products due to, among other factors, changes in societal attitudes, the rate of unemployment, consumer confidence, and/or legislative and regulatory changes, including healthcare reform.
- Effectiveness of our risk management program.
- Contingencies and the level and results of litigation.
- Availability of reinsurance in the market and the ability of our reinsurers to meet their obligations to us.
- Ineffectiveness of our derivatives hedging programs due to changes in the economic environment, counterparty risk, ratings downgrades, capital market volatility, changes in interest rates, and/or regulation.
- Changes in accounting standards, practices, or policies.
- Fluctuation in foreign currency exchange rates.
- Ability to generate sufficient internal liquidity and/or obtain external financing.
- Recoverability and/or realization of the carrying value of our intangible assets, long-lived assets, and deferred tax assets.
- Terrorism, both within the U.S. and abroad, ongoing military actions, and heightened security measures in response to these types of threats.

All written and oral forward-looking statements contained herein attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained herein or referred to in this section.

Appendix

Reconciliation of Non-GAAP Financial Measures

We analyze our performance using non-GAAP financial measures which exclude or include amounts that are not normally excluded or included in the most directly comparable measure calculated and presented in accordance with GAAP. We believe the following non-GAAP financial measures are better performance measures and better indicators of the revenue and profitability and underlying trends in our business:

- After-tax operating income or loss, which excludes realized investment gains or losses, non-operating retirement-related gains or losses, and certain other items; and
- Book value per common share, which is calculated excluding accumulated other comprehensive income (AOCI).

Realized investment gains or losses; non-operating retirement-related gains or losses; unrealized gains or losses on securities and net gains on cash flow hedges depend on market conditions and do not necessarily relate to decisions regarding the underlying business of our company. Book value per common share excluding certain components of AOCI, certain of which tend to fluctuate depending on market conditions and general economic trends, are important measures. We also exclude certain other items from our discussion of financial ratios and metrics in order to enhance the understanding and comparability of our operational performance and the underlying fundamentals, but this exclusion is not an indication that similar items may not recur and does not replace the comparable GAAP measures in the determination of overall profitability. For a reconciliation of the most directly comparable GAAP measures to these non-GAAP financial measures, refer to this Appendix.

	Year Ended December 31					
	2016		2015		2014	
	(in millions)	per share*	(in millions)	per share*	(in millions)	per share*
Net Income	$931.4	$ 3.95	$867.1	$ 3.50	$ 402.1	$ 1.57
Excluding:						
Net Realized Investment Gain (Loss) (net of tax expense (benefit) of $8.4; $(17.7); $3.3)	15.8	0.07	(26.1)	(0.11)	12.8	0.05
Non-operating Retirement-related Loss (net of tax benefit of $5.7; $4.1; $24.4)	(10.6)	(0.04)	(7.8)	(0.03)	(45.6)	(0.18)
Costs Related to Early Retirement of Debt (net of tax benefit of $—; $—; $2.8)	—	—	—	—	(10.4)	(0.04)
Reserve Charges for Closed Block (net of tax benefit of $—; $—; $244.4)	—	—	—	—	(453.8)	(1.77)
After-tax Operating Income	$926.2	$ 3.92	$901.0	$ 3.64	$ 899.1	$ 3.51

*Assuming Dilution

Appendix

Reconciliation of Non-GAAP Financial Measures (continued)

	Year Ended December 31					
	2013		2012		2011	
	(in millions)	per share*	(in millions)	per share*	(in millions)	per share*
Net Income	$847.0	$ 3.19	$888.1	$ 3.15	$ 283.6	$ 0.94
Excluding:						
Net Realized Investment Gain (Loss)						
(net of tax expense (benefit) of $2.9; $19.1; $(1.3))	3.9	0.02	37.1	0.13	(3.6)	(0.01)
Non-operating Retirement-related Loss						
(net of tax benefit of $11.5; $16.2; $11.2)	(21.4)	(0.08)	(30.2)	(0.11)	(20.7)	(0.07)
Unclaimed Death Benefits Reserve Increase						
(net of tax benefit of $33.4; $—; $—)	(62.1)	(0.24)	—	—	—	—
Group Life Waiver of Premium Benefit Reserve Reduction						
(net of tax expense of $29.8; $—; $—)	55.2	0.21	—	—	—	—
Reserve Charges for Closed Block						
(net of tax benefit of $—; $—; $265.0)	—	—	—	—	(492.1)	(1.62)
Deferred Acquisition Costs for Closed Block						
(net of tax benefit of $—; $—; $68.5)	—	—	—	—	(127.5)	(0.42)
Special Tax Items	—	—	—	—	22.7	0.08
After-tax Operating Income	$871.4	$ 3.28	$881.2	$ 3.13	$ 904.8	$ 2.98

	Year Ended December 31					
	2010		2009		2008	
	(in millions)	per share*	(in millions)	per share*	(in millions)	per share*
Net Income	$877.6	$ 2.69	$847.3	$ 2.55	$ 553.4	$ 1.62
Excluding:						
Net Realized Investment Gain (Loss)						
(net of tax expense (benefit) of $9.0; $11.5; $(161.8))	15.7	0.05	0.2	—	(304.1)	(0.89)
Non-operating Retirement-related Loss						
(net of tax benefit of $11.3; $15.2; $5.7)	(21.1)	(0.06)	(28.3)	(0.09)	(10.5)	(0.03)
Special Tax Items	(10.2)	(0.03)	—	—	—	—
After-tax Operating Income	$893.2	$ 2.73	$875.4	$ 2.64	$ 868.0	$ 2.54

	Year Ended December 31					
	2007**		2006**		2005**	
	(in millions)	per share*	(in millions)	per share*	(in millions)	per share*
Net Income	$679.3	$ 1.91	$ 411.0	$ 1.23	$513.6	$ 1.64
Excluding:						
Net Realized Investment Gain (Loss)						
(net of tax expense (benefit) of $(22.0); $0.7; $(2.4))	(43.2)	(0.12)	1.5	0.01	(4.3)	(0.02)
Non-operating Retirement-related Loss						
(net of tax benefit of $7.9; $8.5; $7.4)	(14.6)	(0.04)	(16.2)	(0.05)	(14.4)	(0.05)
Regulatory Reassessment Charges						
(net of tax benefit of $31.3; $129.0; $1.1)	(34.5)	(0.10)	(267.4)	(0.79)	(51.6)	(0.16)
Debt Extinguishment Costs						
(net of tax benefit of $20.5; $8.9; $—)	(38.3)	(0.11)	(16.9)	(0.05)	—	—
Other						
(net of tax benefit of $—; $(5.8); $0.7)	—	—	(12.7)	(0.04)	4.0	0.01
Special Tax Items	2.2	0.01	95.8	0.28	42.8	0.14
Income from Discontinued Operations	6.9	0.02	7.4	0.02	9.6	0.03
After-tax Operating Income	$800.8	$ 2.25	$ 619.5	$ 1.85	$527.5	$ 1.69

*Assuming Dilution

**Does not reflect the impact of ASU 2010-26.

Appendix

Reconciliation of Non-GAAP Financial Measures (continued)

	Year Ended December 31					
	2016		2015		2014	
	(in millions)	per share	(in millions)	per share	(in millions)	per share
Total Stockholders' Equity, As Reported (Book Value)	$8,968.0	$39.02	$8,663.9	$35.96	$8,521.9	$33.78
Excluding:						
Net Unrealized Gain on Securities	440.6	1.92	204.3	0.84	290.3	1.15
Net Gain on Cash Flow Hedges	327.5	1.42	378.0	1.57	391.0	1.55
Subtotal	8,199.9	35.68	8,081.6	33.55	7,840.6	31.08
Excluding:						
Foreign Currency Translation Adjustment	(354.0)	(1.54)	(173.6)	(0.72)	(113.4)	(0.45)
Subtotal	8,553.9	37.22	8,255.2	34.27	7,954.0	31.53
Excluding:						
Unrecognized Pension and Postretirement Benefit Costs	(465.1)	(2.02)	(392.6)	(1.63)	(401.5)	(1.59)
Total Stockholders' Equity, Excluding Accumulated Other Comprehensive Income (Loss)	$9,019.0	$39.24	$8,647.8	$35.90	$8,355.5	$33.12

	December 31			
	2013		2012	
	(in millions)	per share	(in millions)	per share
Total Stockholders' Equity, As Reported (Book Value)	$8,639.9	$33.23	$8,604.6	$31.84
Excluding:				
Net Unrealized Gain on Securities	135.7	0.52	873.5	3.23
Net Gain on Cash Flow Hedges	396.3	1.52	401.6	1.48
Subtotal	8,107.9	31.19	7,329.5	27.13
Excluding:				
Foreign Currency Translation Adjustment	(47.1)	(0.18)	(72.6)	(0.26)
Subtotal	8,155.0	31.37	7,402.1	27.39
Excluding:				
Unrecognized Pension and Postretirement Benefit Costs	(229.9)	(0.88)	(574.5)	(2.13)
Total Stockholders' Equity, Excluding Accumulated Other Comprehensive Income (Loss)	$8,384.9	$32.25	$7,976.6	$29.52

Shareholder Information

Corporate Offices

1 Fountain Square
Chattanooga, TN 37402
423 294 1011

2211 Congress Street
Portland, ME 04122
207 575 2211

1200 Colonial Life Blvd.
Columbia, SC 29210
803 798 7000

Milton Court
Dorking, Surrey RH4 3LZ
England
011 44 1306 887766

1 Mercantile Street
Worcester, MA 01608
774 437 4441

Principal Subsidiaries

Provident Life and Accident Insurance Company
Chattanooga, Tennessee

Unum Life Insurance Company of America
Portland, Maine

Colonial Life & Accident Insurance Company
Columbia, South Carolina

Unum Limited
Dorking, England

The Paul Revere Life Insurance Company
Worcester, Massachusetts

First Unum Life Insurance Company
New York, New York

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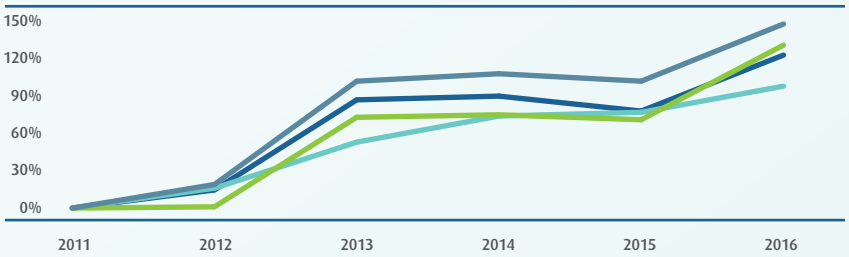
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800 718 8824

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800 446 2617

Common Stock Information
Common stock of Unum Group is traded on the New York Stock Exchange. The stock symbol is UNM.

Stock Performance

The following graph shows a five-year comparison of cumulative total returns for our common stock's historical performance, the S&P 500 Index, and the Insurance Index (non-weighted average of "total returns" from the S&P Life & Health Index and the S&P Multi-line Insurance Index). Past performance is not an indication of future results.



	1-Yr	2-Yr	3-Yr	4-Yr	5-Yr
Proxy Peer Group	18.99%	102.09%	108.07%	102.68%	148.93%
Unum Group	1.04%	73.60%	75.80%	71.26%	131.43%
S&P 500	16.00%	53.57%	74.60%	77.01%	98.18%
S&P Life & Health Index	14.59%	87.33%	90.98%	78.93%	123.41%

Market Prices and Dividends

Quarterly market prices and dividends declared and paid per share of common stock are as follows:

2016	High	Low	Dividend
4th Quarter	$45.01	$34.83	$0.200
3rd Quarter	35.94	29.79	0.200
2nd Quarter	37.18	29.86	0.185
1st Quarter	32.83	23.99	0.185

2015	High	Low	Dividend
4th Quarter	$37.26	$31.22	$0.185
3rd Quarter	38.15	29.81	0.185
2nd Quarter	37.17	33.05	0.165
1st Quarter	35.21	30.72	0.165

As of February 21, 2017, there were 10,440 registered holders of common stock.



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