CINCINNATI FINANCIAL CORP
Form 10-K
February 22, 2019

United States Securities and Exchange Commission
Washington, D.C. 20549

Form 10-K

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

For the fiscal year ended December 31, 2018.

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

For the transition period from ____________________ to ____________________.

Commission file number 000-04604

Cincinnati Financial Corporation
(Exact name of registrant as specified in its charter)

Ohio	31-0746871
(State of incorporation)	(I.R.S. Employer Identification No.)

6200 S. Gilmore Road
Fairfield, Ohio 45014-5141
(Address of principal executive offices) (Zip Code)
(513) 870-2000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:
None
Securities registered pursuant to Section 12(g) of the Act:
$2.00 par, common stock
(Title of Class)
6.125% Senior Notes due 2034
(Title of Class)
6.9% Senior Debentures due 2028
(Title of Class)
6.92% Senior Debentures due 2028
(Title of Class)

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 if Regulation S-T(§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨

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

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

Large accelerated filer þ Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨
Emerging growth company ¨
(Do not check if a smaller reporting company)

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

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

The aggregate market value of voting stock held by nonaffiliates of the Registrant based on the closing price of $66.86 per share as reported on Nasdaq Global Select Market on June 30, 2018, was $10,123,221,318.

As of February 18, 2019, there were 162,937,899 shares of common stock outstanding.

Document Incorporated by Reference

Portions of the definitive Proxy Statement for Cincinnati Financial Corporation's Annual Meeting of Shareholders to be held on April 27, 2019, are incorporated by reference into Part III of this Form 10-K.

2018 ANNUAL REPORT ON FORM 10-K

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Part I

ITEM 1. Business

Cincinnati Financial Corporation – Introduction

We are an Ohio corporation formed in 1968. Our lead subsidiary, The Cincinnati Insurance Company, was founded in 1950. Our main business is property casualty insurance marketed through independent insurance agencies in 42 states. Our headquarters is in Fairfield, Ohio. At year-end 2018, we employed 4,999 associates, including 3,282 headquarters associates who provide support to 1,717 field associates.

Cincinnati Financial Corporation owns 100 percent of three subsidiaries: The Cincinnati Insurance Company, CSU Producer Resources Inc. and CFC Investment Company. In addition, the parent company has an investment portfolio, owns the headquarters property and is responsible for corporate borrowings and shareholder dividends.

The Cincinnati Insurance Company owns 100 percent of four additional insurance subsidiaries. Our standard market property casualty insurance group includes two of those subsidiaries – The Cincinnati Casualty Company and The Cincinnati Indemnity Company. This group writes a broad range of business, homeowner and auto policies. The Cincinnati Insurance Company also conducts the business of our reinsurance assumed operations, known as Cincinnati Re^{SM}. Other subsidiaries of The Cincinnati Insurance Company include: The Cincinnati Life Insurance Company (Cincinnati Life), which provides life insurance policies and fixed annuities; and The Cincinnati Specialty Underwriters Insurance Company (Cincinnati Specialty Underwriters), which offers excess and surplus lines insurance products. In this report and elsewhere we often refer to any or all of these five companies as The Cincinnati Insurance Companies.

The two noninsurance subsidiaries of Cincinnati Financial Corporation are CSU Producer Resources, which offers insurance brokerage services to our independent agencies so their clients can access our excess and surplus lines insurance products; and CFC Investment Company, which offers commercial leasing and financing services to our agencies, their clients and other customers.

On October 12, 2018, we announced the terms of an agreement to acquire all of the shares of MSP Underwriting Limited (MSP) in an all-cash transaction for £102 million based on MSP's projected net asset value at closing, or approximately $134 million based upon the October 9, 2018, exchange rate of 1.31 U.S. dollars per Pound Sterling (GBP). MSP, which operates through Beaufort Underwriting Agency Limited, is a London based global specialty underwriter and Munich Re subsidiary. We expect the transaction to contribute to future earnings and book value growth as it should provide opportunities to support business produced by our independent agencies in new geographies and lines of business. The transaction is expected to close during the first quarter of 2019, subject to regulatory approvals and other customary terms and conditions.

Our filings with the U.S. Securities and Exchange Commission (SEC) are available on our website, cinfin.com/investors, as soon as possible after they have been filed with the SEC. Reports filed with the SEC may also be viewed at sec.gov. These filings include annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. In this report we reference various websites. These websites, including our own, are not incorporated by reference in this Annual Report on Form 10-K.

Periodically, we refer to estimated industry data so that we can give information about our performance versus the overall U.S. insurance industry. Unless otherwise noted, the industry data is prepared by A.M. Best, a leading insurance industry statistical, analytical and insurer financial strength and credit rating organization. Information from A.M. Best is presented on a statutory accounting basis. When we provide our results on a comparable statutory accounting basis, we label it as such; all other company data is presented in accordance with accounting principles generally accepted in the United States of America (GAAP).

Our Business and Our Strategy

Introduction

The Cincinnati Insurance Company was founded nearly 70 years ago by four independent insurance agents. They established the mission that continues to guide all of the companies in the Cincinnati Financial Corporation family – to grow profitably and enhance the ability of local independent insurance agents to deliver quality financial protection to the people and businesses they serve by:

- providing insurance market stability through financial strength
- producing competitive, up-to-date products and services
- developing associates committed to superior service

At year-end 2018, a select group of independent agencies in 42 states actively marketed our property casualty insurance within their communities. Standard market commercial lines and excess and surplus lines policies were marketed in 39 of those states. Personal lines policies were marketed in 38 of those states. Within our select group of agencies, we also seek to become the life insurance carrier of choice and to help agents and their clients – our policyholders – by offering leasing and financing services.

Three competitive advantages distinguish our company, positioning us to build shareholder value and to be successful overall:

- Commitment to our professional independent insurance agencies and to their continued success
- Financial strength to fulfill our promises and be a consistent market for our agents' business, supporting stability and confidence
- Operating structure that supports local decision making, showcasing our claims excellence and allowing us to balance growth with underwriting discipline

The primary sources of our company's net income are summarized below. We discuss the contribution to net income from each source in Item 7, Corporate Financial Highlights of Management's Discussion and Analysis.

- Underwriting profit (loss) – Includes revenues from earned premiums for insurance and reinsurance policies or contracts, reduced by losses and loss expenses from associated insurance coverages. Those revenues are further reduced by underwriting expenses associated with marketing policies or related to administration of our insurance operation. The net result represents an underwriting profit when revenues exceed losses and expenses.
- Investment income – Is generated primarily from investing the premiums collected for insurance policies sold, until funds are needed to pay losses for insurance claims or other expenses. Interest income from bond investments or dividend income from stock investments are the main categories of our investment income, with additional contribution from compounding effects over time.
- Investment gains and losses – Occur from appreciation or depreciation of invested assets over time. Gains or losses are generally recognized from changes in market values of equity securities without a sale or when invested assets are sold or become impaired.

Independent Insurance Agency Marketplace

The U.S. property casualty insurance industry is a highly competitive marketplace with more than 2,000 stock and mutual companies operating independently or in groups. No single company or group dominates across all product lines and states. Standard market insurance companies (carriers) can market a broad array of products nationally or:

- choose to sell a limited product line or only one type of insurance (monoline carrier)
- target a certain segment of the market (for example, personal insurance)
- focus on one or more states or regions (regional carrier)

Standard market property casualty insurers generally offer insurance products through one or more distribution channels:

- independent agents, who represent multiple carriers
- captive agents, who represent one carrier exclusively
- direct marketing to consumers

For the most part, we compete with standard market insurance companies that market through independent insurance agents. Agencies marketing our commercial lines products typically represent six to 12 standard market insurance carriers for commercial lines products, including both national and regional carriers, most of which are mutual companies. Our agencies typically represent four to six standard personal lines carriers. We also compete with carriers that market personal lines products through captive agents and direct writers. Some of our agencies describe their roles as brokers instead of agents. Distribution through independent insurance agents or brokers represents nearly 60 percent of overall U.S. property casualty insurance premiums and approximately 80 percent of commercial property casualty insurance premiums, according to studies by the Independent Insurance Agents and Brokers of America.

We are fully committed to the independent agency channel for marketing our insurance policies, while Cincinnati Re typically markets through broker organizations or similar intermediaries that specialize in reinsurance. The independent agencies that we choose to market our standard lines insurance products share our philosophies. They do business person to person; offer broad, value-added services; maintain sound balance sheets; and manage their agencies professionally, targeting long-term success. We develop our relationships with agencies that are active in their communities, providing important knowledge of local market trends, opportunities and challenges.

We work to support agencies with tools and resources that help communicate the value of our insurance policies to their clients and prospective clients. We plan to build on our recent marketing efforts and continue with our national advertising campaign in 2019. Our intent is to increase the visibility of our company, supporting our agents' efforts as they recommend policies and services offered through The Cincinnati Insurance Companies. We also continue to build our social media presence, focusing on providing content that agents can share on their own sites.

We help our agencies meet the broader needs of their clients and increase and diversify their revenues and profitability by offering insurance solutions beyond our standard market property casualty insurance products. We market life insurance products through the agencies that offer our property casualty products and through other independent life agencies that represent The Cincinnati Life Insurance Company without also representing our other subsidiaries. We operate our own excess and surplus lines insurance brokerage firm and insurance carrier so that we can offer our excess and surplus lines products exclusively to the independent agencies who market our other property casualty insurance products.

For our life insurance operation, property casualty agencies make up the main distribution system. To help that operation build scale, we also develop life insurance business from other independent life insurance agencies in geographic markets underserved through our property casualty agencies. We are careful to solicit business from these other agencies in a manner that does not compete with the life insurance marketing and sales efforts of our property casualty agencies. Cincinnati Life emphasizes up-to-date products, responsive underwriting, high-quality service and competitive pricing.

Our excess and surplus lines insurance operation helps meet the specific insurance needs of certain agency clients. Generally, excess and surplus lines insurance carriers provide insurance that is unavailable in the standard market due to market conditions or characteristics of the insured persons or organizations that are caused by their nature, claim history or the characteristics of their business. Insurers operating in the excess and surplus lines marketplace generally market business through excess and surplus lines brokers, whether they are small specialty insurers or specialized divisions of larger insurance organizations. Agencies have access to Cincinnati Specialty Underwriters' product line through CSU Producer Resources, the wholly owned insurance brokerage subsidiary of Cincinnati Financial Corporation. By providing superior service, we can help our agencies grow while also profitably growing our property casualty insurance business.

The table below includes data about property casualty agency relationships that market our standard market insurance products.

Agency Data	Years ended December 31,	
	2018	2017
Property casualty agency relationships, January 1	1,702	1,614
New appointments that market all or most of The Cincinnati Insurance Companies' products	98	107
New appointments that market only personal lines insurance products for Cincinnati Insurance	69	104
Changes due to consolidation and other	(112)	(123)
Property casualty agency relationships, December 31	1,757	1,702
Property casualty reporting locations	2,344	2,256
New relationship appointments	111	138
Active states	42	42

The annual total of agency new appointments may be partially offset by other changes in agency structures, such as consolidation through mergers or acquisitions. An increasing number of agencies have multiple, separately identifiable locations, reflecting their growth as well as consolidation of ownership within the independent agency marketplace. The number of reporting agency locations indicates our agents’ regional scope and the extent of our presence within our active states. The difference between new appointments in total and the number of new relationships represents either: new branch offices opened by existing Cincinnati agencies; or agencies that merged with another Cincinnati agency and we still believed would produce a meaningful amount of new business premiums.

On average, we have an 8.4 percent share of the standard lines property casualty insurance purchased through our reporting agency locations, according to 2017 data from agency surveys. Our share is 14.3 percent in reporting agency locations that have represented us for more than 10 years; 7.6 percent in agencies that have represented us for six to 10 years; 2.2 percent in agencies that have represented us for two to five years; and 0.5 percent in agencies that have represented us for one year or less.

Our largest single agency relationship accounted for approximately 0.8 percent of our total property casualty earned premiums in 2018. No aggregate locations under a single ownership structure accounted for more than 4 percent of our earned premiums in 2018.

Financial Strength

We believe that our financial strength and strong capital and surplus position, reflected in our insurer financial strength ratings, are clear, competitive advantages in the segments of the insurance marketplace that we serve. This strength supports the consistent, predictable performance that our policyholders, agents, associates and shareholders have always expected and received, helping us withstand significant challenges.

While the potential exists for short-term financial performance variability due to our exposures to possible natural or man-made catastrophes or to significant capital market losses, the rating agencies consistently assert that we have built appropriate financial strength and flexibility to manage that variability. We remain committed to strategies that emphasize being a consistent, stable market for our agents' business rather than seeking short-term benefits that might accrue by quick, opportunistic reaction to changes in market conditions.

We use various principles and practices such as diversification and enterprise risk management to maintain strong capital. For example, we maintain a diversified investment portfolio by reviewing and applying diversification parameters and tolerances.

- Our $10.689 billion fixed-maturity portfolio is diversified and exceeds total insurance reserves. The portfolio had an average rating of A2/A, and its fair value exceeded total insurance reserve liabilities by approximately 26 percent at December 31, 2018. No corporate bond exposure accounted for more than 0.8 percent of our fixed-maturity portfolio, and no municipal exposure accounted for more than 0.2 percent.
- The strength of our fixed-maturity portfolio provides an opportunity to invest for potential capital appreciation by purchasing equity securities. Our $5.920 billion equity portfolio minimizes concentrations in single stocks or industries. At December 31, 2018, no single security accounted for more than 4.5 percent of our portfolio of publicly traded common stocks, and no single sector accounted for more than 21 percent.

Strong liquidity increases our flexibility through all periods to maintain our cash dividend and to continue to invest in and expand our insurance operations. At December 31, 2018, we held $2.514 billion of our cash and invested assets at the parent-company level, of which $2.233 billion, or 88.8 percent, was invested in common stocks, and $209 million, or 8.3 percent, was cash and cash equivalents.

We minimize reliance on debt as a source of capital, with a debt-to-total-capital ratio of 9.5 percent at year-end 2018. Long-term debt at year-end 2018 totaled $788 million, compared with $787 million at year-end 2017, and our short-term debt was $32 million, up from $24 million at the end of the prior year. The long-term debt consists of three nonconvertible, noncallable debentures, two due in 2028 and one in 2034. Ratings for our long-term debt are discussed in Item 7, Liquidity and Capital Resources, Additional Sources of Liquidity.

At year-end 2018 and 2017, risk-based capital (RBC) for our standard market property casualty insurance, excess and surplus lines insurance and life insurance subsidiaries was strong, far exceeding regulatory requirements.

- We ended 2018 with a 1.0-to-1 ratio of property casualty premiums to surplus, a key measure of property casualty insurance company capacity and security. A lower ratio indicates more security for policyholders and greater capacity for growth by an insurer. We believe our ratio provides ample flexibility to diversify risk by expanding our operations into new geographies and product areas. The estimated industry average ratio was 0.8-to-1 at year-end 2018, based on industry data reported through the first nine months of 2018.
- We ended 2018 with a 6.4 percent ratio of life statutory adjusted risk-based surplus to liabilities, a key measure of life insurance company capital strength. A higher ratio indicates an insurer's stronger security for policyholders and capacity to support business growth.

(Dollars in millions) Statutory Information	At December 31,	
	2018	2017
Standard market property casualty insurance subsidiary		
Statutory capital and surplus	$4,919	$5,094
Risk-based capital	4,952	5,127
Authorized control level risk-based capital	723	686
Risk-based capital to authorized control level risk-based capital ratio	6.8	7.5
Written premium to surplus ratio	1.0	1.0
Excess and surplus lines insurance subsidiary		
Statutory capital and surplus	$479	$436
Risk-based capital	479	436
Authorized control level risk-based capital	41	35
Risk-based capital to authorized control level risk-based capital ratio	11.8	12.3
Written premium to surplus ratio	0.5	0.5
Life insurance subsidiary		
Statutory capital and surplus	$191	$195
Risk-based capital	223	229
Authorized control level risk-based capital	51	45
Total liabilities excluding separate account business	3,538	3,436
Risk-based capital to authorized control level risk-based capital ratio	4.4	5.1
Life statutory risk-based adjusted surplus to liabilities ratio	6.4	6.7

The consolidated property casualty insurance group's ratio of investments in common stock, at fair value, to statutory capital and surplus was 70.9 percent at year-end 2018 compared with 73.5 percent at year-end 2017.

Cincinnati Financial Corporation’s senior debt is rated by four independent rating firms. In addition, the rating firms award our property casualty and life operations insurance financial strength ratings based on their quantitative and qualitative analyses. These ratings assess an insurer’s ability to meet financial obligations to policyholders and do not necessarily address all of the matters that may be important to shareholders. Ratings may be subject to revision or withdrawal at any time by the ratings agency, and each rating should be evaluated independently of any other rating.

At February 21, 2019, our insurance subsidiaries continued to be highly rated.

Rating agency	Insurer Financial Strength Ratings									Outlook
	Standard market property casualty insurance subsidiary			Life insurance subsidiary			Excess and surplus lines insurance subsidiary			
			Rating Tier			Rating Tier			Rating Tier	
A.M. Best Company ambest.com	A+	Superior	2 of 16	A	Excellent	3 of 16	A+	Superior	2 of 16	Stable/ Positive/ Stable
Fitch Ratings fitchratings.com	A+	Strong	5 of 21	A+	Strong	5 of 21	-	-	-	Stable
Moody's Investors Service moodys.com	A1	Good	5 of 21	-	-	-	-	-	-	Positive
S&P Global Ratings spratings.com	A+	Strong	5 of 21	A+	Strong	5 of 21	-	-	-	Stable

On January 30, 2019, A.M. Best affirmed the financial strength rating of The Cincinnati Insurance Company, and its property casualty insurance subsidiaries, that it had assigned in December 2008, continuing its stable outlook. On the same date, A.M. Best affirmed the financial strength rating of The Cincinnati Life Insurance Company, maintaining its positive outlook. On December 21, 2018, Moody's affirmed the ratings that it had assigned to us in September 2008, changing its outlook to positive. On November 16, 2018, Fitch affirmed the ratings that it had assigned to us in August 2009, continuing its stable outlook. On July 11, 2018, S&P affirmed the ratings that it had assigned to us in June 2015, continuing its stable outlook.

Our debt ratings are discussed in Item 7, Liquidity and Capital Resources, Additional Sources of Liquidity.

Operating Structure
We offer our broad array of insurance products through the independent agency distribution channel. We recognize that locally based independent agencies have relationships in their communities and local marketplace intelligence that can lead to profitable business and policyholder satisfaction and loyalty. Several of our strategic initiatives are intended not only to help us compete but also to enhance support of agencies that represent us, thereby contributing to agency success. We seek to be a consistent and predictable property casualty carrier that agencies can rely on to serve their clients.

In our 10 highest volume states for consolidated property casualty premiums, 1,181 reporting agency locations wrote 58.4 percent of our 2018 consolidated property casualty earned premium volume compared with 1,170 locations and 59.7 percent in 2017. We continue efforts to geographically diversify our property casualty risks.

Our 10 largest states based on property casualty premium volume are shown in the table below.

(Dollars in millions)	Earned premiums	% of total earned	Agency locations	Average premium per location
Year ended December 31, 2018				
Ohio	$ 781	15.9%	247	$ 3.2
Illinois	293	6.0	149	2.0
Georgia	282	5.7	108	2.6
Indiana	264	5.4	115	2.3
North Carolina	263	5.3	104	2.5
Pennsylvania	247	5.0	136	1.8
Michigan	224	4.6	138	1.6
Tennessee	187	3.8	64	2.9
Virginia	170	3.5	68	2.5
Alabama	158	3.2	52	3.0

Field Focus Emphasizing Service
We rely on our force of 1,717 field associates to provide service and be accountable to our agencies for decisions we make at the local level. These associates live in the communities our agents serve, so they are readily available when agencies or policyholders need them. While their work is often conducted at the premises of the agency or policyholder, they also work from offices in their homes. Headquarters associates support agencies and field associates with underwriting, accounting, technology assistance, training and other services. Company executives and headquarters associates regularly travel to visit agencies, strengthening the personal relationships we have with these organizations. Agents have opportunities for direct, personal conversations with our senior management team, and headquarters associates have opportunities to refresh their knowledge of marketplace conditions and field activities.

The field team is coordinated by field marketing representatives responsible for underwriting new commercial lines business. They are joined by field representatives specializing in claims, loss control, commercial lines key accounts, personal lines, excess and surplus lines, machinery and equipment, management liability and surety, premium audit and life insurance. The field team provides a variety of services, such as recommending specific actions to improve the safety of the policyholder’s operations. We seek to develop long-term relationships by understanding the unique needs of each agency's clients, who are also our policyholders.

Technology enhances our service to agencies, allowing them to more easily access our systems and process business transactions. Policyholders can conveniently access pertinent policy information online, helping to reduce costs for agencies and the company. Technology also helps our associates collaborate and process business efficiently, providing more time for personal service to agencies and their clients.

We also provide and continue to develop enhanced, tailored services offered at the time a claim is reported for an insured loss event. Those services include assisting with car rental or towing, arranging temporary housing and coordinating emergency repairs to homes so additional damage is minimized.

Our claims philosophy reflects our belief that we prosper as a company by responding to claims person to person, paying covered claims promptly, preventing false claims from unfairly adding to overall premiums and building financial strength to meet future obligations.

Our 954 locally based field claims associates work from their homes and are assigned to specific agencies. They respond personally to policyholders and claimants and are equipped to handle a claim from nearly anywhere. We believe we have a competitive advantage because of the person-to-person approach and the resulting high level of service that our field claims representatives deliver. We also help our agencies provide prompt service to policyholders by providing them authority to immediately pay, up to $2,500, most first-party claims covered by our standard market policies. Agencies also have the option of submitting those claims to our Express Claims Center where professional headquarters associates will provide immediate customer service, processing the claims promptly and efficiently. We believe this same local approach to handling claims is a competitive advantage for our agents providing excess and surplus lines coverage in their communities. Handling of these claims includes guidance from headquarters-based excess and surplus lines claims managers.

Catastrophe response teams are comprised of our experienced field claims associates who have the authority they need to do their jobs. In times of widespread loss, our field claims representatives confidently and quickly resolve claims, often providing claims payments on the same day they inspect the loss. Technology helps to enable fast initial contact with policyholders and easy sharing of information and data among storm teams, headquarters associates and local field claims representatives. When hurricanes or other weather events are predicted, we can identify through mapping technologies the expected number of our policyholders that may be impacted by the event and choose to have catastrophe response team members travel to strategic locations near the expected impact area. They are then in position to quickly get to the affected area and begin providing service to policyholders.

We staff a Special Investigations Unit (SIU) with former law enforcement and claims professionals whose qualifications make them well suited to gathering facts to uncover potential fraud. While we believe our job is to pay what is due under each policy contract, we also want to prevent false claims from unfairly increasing overall premiums. Our SIU also operates a computer forensics lab, using sophisticated software to recover data and mitigate the cost of computer-related claims for business interruption and loss of records.

We seek to attract and retain high-quality independent insurance agencies with knowledgeable, professional staffs. In turn, we make an exceptionally strong commitment to assist them in keeping their knowledge up to date and educating new people they bring on board as they grow. This includes offering classes, usually at no cost to agencies, except travel-related expenses they may incur, and other training support. We also offer noninsurance financial services. We believe that providing these services enhances agency relationships with the company and their clients, increasing loyalty while diversifying the agency’s revenues.

Insurance Products

We provide well-designed property casualty and life insurance to bring policyholders convenience, discounts and a reduced risk of coverage gaps or disputes. For most agencies that represent us, we believe we offer insurance solutions for approximately 75 percent of the typical insurable risks of their clients. Products for various business lines within our reporting segments include insurance coverages for business property and liability, automobiles and homes.

The following table shows net written premiums by segment and business line at year-end 2018, 2017 and 2016:

(Dollars in millions)	2018	2017	2016	Percent of total 2018
Segment:				
Commercial lines insurance	$3,245	$3,202	$3,122	60.9 %
Personal lines insurance	1,378	1,294	1,198	25.9
Excess and surplus lines insurance	249	219	189	4.7
Life insurance	298	278	281	5.6
Other	158	125	71	2.9
Total	$5,328	$5,118	$4,861	100.0%
Business line:				
Commercial lines insurance:				
Commercial casualty	$1,080	$1,082	$1,061	20.3 %
Commercial property	932	919	880	17.5
Commercial auto	682	651	611	12.8
Workers' compensation	311	326	352	5.8
Other commercial	240	224	218	4.5
Total commercial lines insurance	3,245	3,202	3,122	60.9
Personal lines insurance:				
Personal auto	622	603	563	11.7
Homeowner	588	542	500	11.0
Other personal	168	149	135	3.2
Total personal lines insurance	1,378	1,294	1,198	25.9
Excess and surplus lines insurance	249	219	189	4.7
Life insurance:				
Term life insurance	181	167	156	3.4
Universal life insurance	44	41	36	0.8
Other life insurance and annuity products	73	70	89	1.4
Subtotal	298	278	281	5.6
Cincinnati Re	158	125	71	2.9
Total	$5,328	$5,118	$4,861	100.0%

We discuss our insurance segments in their respective sections later in this report.

Strategic Initiatives to Manage Insurance Profitability and Drive Premium Growth
Management has identified a strategy that can position us for long-term success. The board of directors and management expect execution of our strategic plan to create significant value for shareholders over time. We broadly group key strategic initiatives into two areas of focus – managing insurance profitability and driving premium growth. These areas correlate with how we measure progress toward our long-term financial objectives. Our strategic priorities include meeting the wants and needs of our agent customers, attracting and developing talented associates, providing comprehensive product solutions, achieving best-in-class field service and continually enhancing operational efficiency and effectiveness. We believe successful execution of our long-term strategy and related shorter-term initiatives will help us achieve our long-term objectives despite potential unfavorable shorter-term effects of difficult economic, market or pricing cycles. We describe our expectations for the results of these initiatives in Item 7, Executive Summary of Management's Discussion and Analysis.

Effective capital management is an important part of creating long-term shareholder value, serving as a foundation to support other strategic areas focused on profitable growth of our insurance business. Our capital management philosophy is intended to preserve and build our capital while maintaining appropriate liquidity. A strong capital position provides the capacity to support premium growth, and liquidity provides for our investment in the people and infrastructure needed to implement our strategic initiatives. Our strong capital and liquidity also provide financial flexibility for shareholder dividends or other capital management actions.

We continue to enhance our property casualty underwriting expertise and to effectively and efficiently underwrite individual policies and process transactions. Ongoing initiatives supporting this work include expanding our pricing and segmentation capabilities through experience and use of predictive analytics and additional data. Our segmentation efforts emphasize identification and retention of insurance policies we believe have relatively stronger pricing, while seeking more aggressive renewal terms and conditions on policies we believe have relatively weaker pricing. We will continue collaborative efforts to address underpriced or underperforming business in 2019, including improving underwriting and rate adequacy for our commercial auto and personal auto lines of business.

We take ongoing actions intended to improve efficiency and make it easier for agencies and their clients to do business with us. In addition to benefiting agencies we serve, improved processes support our strategy, helping to more quickly deploy product or service enhancements. They also help reduce internal costs and allow us to focus more resources on agency services and providing local, individualized insurance solutions for small businesses and other agency clients. Initiatives include continuing to enhance the experiences of agencies and policy consumers through real-time messaging to an agency's management system and further development of online portals providing more robust policy information for billing, claims and other areas. Other ongoing initiatives aim for continuous improvement of workflow tools and processes for underwriters.

We also seek to further penetrate insurance markets as we strive to be the best company serving independent insurance agencies. We expect initiatives aimed at specific market opportunities, along with enhancements to provide industry-leading services, to encourage our agents to grow and to increase our share of their business. Our growth plans incorporate general business statistics and historical profitability trends to estimate premium growth from existing agencies and to make careful projections to assess the number of additional agencies needed. Our focus remains on key components of agent satisfaction based on factors that agents tell us are most important.

We continue to appoint new agencies to develop additional points of distribution. In 2019, we are planning approximately 100 appointments of independent agencies that offer most or all of our property casualty insurance products. We generally earn a 10 percent share of an agency’s business within 10 years of its appointment. See Item 1, Our Business and Our Strategy, Independent Insurance Agency Marketplace, for additional discussion.

We also plan to appoint other agencies that focus on high net worth personal lines clients. In 2019, we are targeting the appointment of approximately 80 agencies that market only personal lines insurance products for us, primarily ones with a high net worth focus. In 2018, we appointed 69 new agencies that meet that criteria. As we continue to expand availability of our Executive Capstone™ suite of insurance products and services to additional states over the next several years, we intend to appoint additional agencies as we work to become the carrier of choice for this portion of our agencies' accounts.

For all of our insurance products, we will work to increase penetration with recently appointed agencies. This includes increasing opportunities for agencies to cross-serve their clients by providing updated products and services that aim to meet their life insurance needs. We will also continue to add field marketing representatives or provide expertise where needed for additional agency support in selected areas. We expect our strategy and initiatives to contribute to our objective of being ranked the No. 1 or No. 2 carrier based on premium volume in agencies that have represented us for at least five years. We continued to reach that objective in approximately two-thirds of such agencies based on 2017 premiums.

During 2019, we will continue to produce premiums through the disciplined expansion of Cincinnati Re, which assumes risks through reinsurance treaties covering various lines of business where we receive a share of premiums and associated liabilities from other insurers and reinsurers. We have staffed this operation with seasoned underwriting and analytical talent and strive to assume risks that we understand well, both quantitatively and qualitatively. We seek risks that have attractive underwriting margins on a stand-alone basis as well as on a diversified risk-adjusted return basis. We have adequate capital to support this operation and intend to be selective and patient in its expansion.

We also expect that our pending acquisition of MSP, which is expected to close during the first quarter of 2019, will produce profitable premium growth over time. We also believe MSP, which operates through Beaufort Underwriting Agency Limited, will provide opportunities to support business produced by our independent agencies in new geographies and lines of business.

To help guide our strategic efforts, we have placed an emphasis on innovation to accelerate improvement and to also favorably position us for the future. We find innovative ideas in many places, including: internally through management and other associates, with our traditional business partners and in the start-up business community. These efforts are primarily focused on operational improvements, customer engagement and improving pricing and risk selection.

Our Segments

Consolidated financial results primarily reflect the results of our five reporting segments. These segments are defined based on financial information we use to evaluate performance and to determine the allocation of assets.

- Commercial lines insurance
- Personal lines insurance
- Excess and surplus lines insurance
- Life insurance
- Investments

Revenues, income before income taxes and identifiable assets for each segment are shown in Item 8, Note 18 of the Consolidated Financial Statements. Some of that information is discussed in this section, where we explain the business operations of each segment. The financial performance of each segment is discussed in Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

Commercial Lines Insurance Segment

In 2018, the commercial lines insurance segment contributed net earned premiums of $3.218 billion, representing 59.5 percent of consolidated total revenues. This segment reported profit before income taxes of $151 million. Commercial lines net earned premiums rose 2 percent in both 2018 and 2017.

We believe that our commercial lines business is best measured and evaluated on a segment basis. However, we also provide selected line of business data to summarize growth and profitability trends separately for our business lines. The five commercial business lines are:

- Commercial casualty – Provides coverage to businesses against third-party liability from accidents occurring on their premises or arising out of their operations, including injuries sustained from products or liability related to professional services. Specialized casualty policies may include similar coverage such as umbrella liability or employment practices. The commercial casualty business line includes liability coverage written as part of commercial package policies.
- Commercial property – Provides coverage for loss or damage to buildings, inventory and equipment caused by covered causes of loss such as fire, wind, hail, water, theft and vandalism, as well as business interruption resulting from a covered loss. Commercial property also includes other coverages such as inland marine, which covers losses related to builder's risk, cargo or equipment. Various property coverages can be written as stand-alone policies or can be added to a commercial package policy.
- Commercial auto – Protects businesses against liability to others for both bodily injury and property damage, medical payments to insureds and occupants of their vehicles, physical damage to an insured's own vehicle from collision and various other perils, and damages caused by uninsured motorists.
- Workers' compensation – Covers employers for government-specified benefits from work-related injuries to employees.
- Other commercial lines – This includes several other types of insurance products for businesses, including:

Management liability and surety – Includes director and officer (D&O) liability insurance, which covers liability for actual or alleged errors in judgment, breaches of duty or other wrongful acts related to activities of organizations and can optionally include other liability coverages. We market primarily to nonprofit organizations, privately held businesses, healthcare organizations, financial institutions and educational institutions. The for-profit portion includes approximately 175 bank or savings and loan financial institutions, with only two having assets of $1 billion or more. The surety portion includes contract and commercial surety bonds for losses resulting from dishonesty, failure to perform and other acts and also includes fidelity bonds for fraudulent acts by specified individuals or dishonest acts by employees.

Specialty packages – Includes coverages for property, liability and business interruption tailored to meet the needs of specific industry classes such as artisan contractors, dentists or smaller main street businesses.

Machinery and equipment – Specialized coverage provides protection for loss or damage to boilers and machinery, including production and computer equipment and business interruption, due to sudden and accidental mechanical breakdown, steam explosion or artificially generated electrical current.

Our history of emphasizing products and services that agencies can market to small or midsized businesses in their communities remains a critical piece of our strategy even as we expand our appetite to insure larger businesses. While some of our property casualty agencies market only our personal lines or management liability and surety products, approximately 86 percent offer some or all of our standard market commercial insurance products.

In 2018, our 10 highest volume commercial lines states generated 58.7 percent of our earned premiums compared with 59.1 percent in 2017 as we continued efforts to geographically diversify our property casualty risks. Earned premiums in the 10 highest volume states increased 1 percent in 2018, compared with 2 percent in the remaining states. The aggregate number of reporting agency locations in our 10 highest volume states increased to 1,142 in 2018 from 1,134 in 2017.

Our 10 largest states based on commercial lines premium volume are shown in the table below.

(Dollars in millions)	Earned premiums	% of total earned	Agency locations	Average premium per location
Year ended December 31, 2018				
Ohio	$ 462	14.4 %	242	$ 1.9
Illinois	210	6.5	141	1.5
Pennsylvania	204	6.3	125	1.6
Indiana	180	5.6	115	1.6
North Carolina	173	5.4	100	1.7
Georgia	152	4.7	96	1.6
Michigan	135	4.2	128	1.1
Virginia	133	4.1	63	2.1
Tennessee	133	4.1	64	2.1
Texas	109	3.4	68	1.6

For new commercial lines business, case-by-case underwriting and pricing is coordinated by our locally based field marketing representatives who are also responsible for selecting new independent agencies. Our agents and our team of field associates get to know the people and businesses in their communities and can make informed decisions about each risk.

Commercial lines policy renewals are managed by headquarters underwriters who are assigned to specific agencies and consult with local field associates as needed. As part of our team approach, headquarters underwriters also help oversee agency growth and profitability. They are responsible for formal issuance of all new business and renewal policies as well as policy endorsements. Further, the headquarters underwriters provide day-to-day customer service to agencies and our field marketing representatives by offering product training, answering underwriting questions, helping to determine underwriting eligibility and assisting with the mechanics of premium determination. We also continue a target markets emphasis to analyze opportunities and to develop new products and services, new coverage options and improvements to existing insurance products.

Understanding evolving market conditions is a critical function for our success, accomplished through both informal commentary and formal reviews. Informally, our field marketing representatives, underwriters and product development associates routinely receive market intelligence from a variety of channels, including from the agencies with which they work. This market information helps identify the top competitors and our market strengths and weaknesses. The information obtained encompasses pricing, breadth of coverage and use of underwriting guidelines.

Our historical emphasis on small to midsized businesses is reflected in the mix of our commercial lines premium volume by policy size. Approximately 80 percent of our commercial in-force policies have annual premiums of $10,000 or less, accounting in total for approximately 20 percent of our 2018 commercial lines premium volume. The remainder of policies have annual premiums greater than $10,000, including policies with annual premiums greater than $100,000 that account for approximately one-quarter of our 2018 commercial lines premium volume.

Our commercial lines packages typically are offered on a three-year policy term for most insurance coverages – a key competitive advantage. In our experience, multi-year packages appeal to the quality-conscious insurance buyers who we believe are typical clients of our independent agents. Customized insurance programs on a three-year term complement the long-term relationships these policyholders typically have with their agents and with our company.

By reducing annual administrative efforts, multi-year policies lower expenses for our company and for our agents. The commitment we make to policyholders encourages long-term relationships and reduces their need to annually re-evaluate their insurance carrier or agency. We believe that the advantages of three-year policies in terms of improved policyholder convenience, increased account retention and reduced administrative costs outweigh the potential disadvantage of these policies, even in periods of rising rates.

Although we offer three-year policy terms, premiums for some coverages within those policies are adjustable at the anniversary for the next annual period, and policies may be canceled at any time at the discretion of the policyholder. Contract terms often provide that rates for property, general liability, inland marine and crime coverages, as well as policy terms and conditions, are fixed for the term of the policy. However, the exposure we insure is reviewed annually, near the policy anniversary date, and the amount of premiums may be adjusted based on changes to that exposure.

The general liability exposure basis may be audited annually. Commercial auto, workers' compensation, professional liability and most umbrella liability coverages within multi-year packages are rated at each of the policy's annual anniversaries for the next one-year period. The annual pricing could incorporate rate changes approved by state insurance regulatory authorities between the date the policy was written and its annual anniversary date, as well as changes in risk exposures and premium credits or debits relating to loss experience and other underwriting judgment factors. We estimate that approximately 75 percent of 2018 commercial premiums were subject to annual rating or were written on a one-year policy term. That 75 percent includes approximately one-third of policies offered on a three-year policy term that expire during any given year.

We believe our commercial lines insurance segment premiums reflect a higher concentration, relative to industry commercial lines premiums, in contractor-related businesses. Since economic activity related to construction, which can heavily influence insured exposures of contractors, may experience cycles that vary significantly with the economy as a whole, our commercial lines premium trends could vary from commercial lines premium trends for the property casualty insurance industry. In 2018, we estimated that 39 percent of our general liability premiums, and 37 percent of our workers' compensation premiums, came from the construction industry based on North American Industry Classification System (NAICS) codes.

Personal Lines Insurance Segment

The personal lines insurance segment contributed net earned premiums of $1.336 billion to 2018 consolidated total revenues, or 24.7 percent of the total, and reported a loss before income taxes of $20 million. Personal lines net earned premiums rose 8 percent in 2018 and 7 percent in 2017.

We prefer to write personal lines coverage in accounts that include both auto and homeowner coverages as well as coverages that are part of our other personal business line. At the end of 2018, for example, 83.6 percent of our homeowner policies were accompanied by a personal auto policy in the same account. As a result of our account-based approach, we believe that our personal lines business is best measured and evaluated on a segment basis. However, we provide line of business data to summarize growth and profitability trends separately for three business lines:

- Personal auto – Protects against liability to others for both bodily injury and property damage, medical payments to insureds and occupants of their vehicle, physical damage to an insured's own vehicle from collision and various other perils, and damages caused by uninsured motorists. In addition, many states require policies to provide first-party personal injury protection, frequently referred to as no-fault coverage.
- Homeowner – Protects against losses to dwellings and contents from a wide variety of perils, as well as liability arising out of personal activities both on and off the covered premises. We also offer coverage for condominium unit owners and renters.
- Other personal lines – This includes the other types of insurance products we offer to individuals, including dwelling fire, inland marine, personal umbrella liability and watercraft coverages.

At year-end 2018, we marketed personal lines insurance products through 1,698, or approximately 72 percent, of our 2,344 agency reporting locations. The 1,698 personal lines agency locations were in 38 of the 42 states in which we offered property casualty insurance. Those agencies produced approximately 1.1 million personal lines policies in force for us, representing approximately 410,000 policyholders.

We continue to evaluate opportunities to expand our marketing of personal lines to other states. Primary factors considered in the evaluation of a potential new state include market opportunity or potential, weather-related catastrophe history and the legal climate.

Expansion of our personal lines insurance segment includes marketing through independent agencies to profitably grow our premiums for products and services offered to their high net worth personal lines clients. At year-end 2018, our appointed agencies produced for us nearly $310 million in annual premiums from policyholders with insured home values of $1 million or more. We estimate those policyholders represent approximately 8 percent of our total personal lines policyholders.

In 2018, our 10 highest volume personal lines states generated 70.1 percent of our earned premiums compared with 74.0 percent in 2017. Earned premiums in the five highest volume states increased 1 percent in 2018 while increasing 14 percent in the remaining states, reflecting progress toward our long-term objective of geographic diversification through new states for our personal lines operation. The aggregate number of reporting agency locations in our 10 highest volume states decreased to 879 in 2018 from 881 in 2017.

Our 10 largest states based on personal lines premium volume are shown in the table below.

(Dollars in millions)	Earned premiums	% of total earned	Agency locations	Average premium per location
Year ended December 31, 2018				
Ohio	$ 300	22.5 %	223	$ 1.3
Georgia	115	8.6	93	1.2
Michigan	83	6.2	97	0.9
North Carolina	79	5.9	87	0.9
Indiana	71	5.3	86	0.8
Alabama	67	5.0	48	1.4
Illinois	65	4.9	93	0.7
Kentucky	58	4.3	46	1.3
Minnesota	50	3.7	57	0.9
Tennessee	49	3.7	49	1.0

New and renewal personal lines business reflects our risk-specific underwriting philosophy. Each agency selects personal lines business primarily from within the geographic territory that it serves, based in part on agency staff's knowledge of the risks in those communities or familiarity with the policyholder. At year-end 2018, we had 21 full-time personal lines field marketing representatives who have underwriting authority and visit agencies on a regular basis. They focus primarily on key states targeted for growth, reinforcing the advantages of our personal lines products and offering training in the use of our policy processing system. Personal lines activities are further supported by headquarters associates assigned to individual agencies.

Excess and Surplus Lines Insurance Segment
The excess and surplus lines segment contributed net earned premiums of $234 million to 2018 consolidated total revenues, or 4.3 percent of the total, and reported profit before income taxes of $63 million. Excess and surplus lines net earned premium increased 12 percent in 2018 and 14 percent in 2017.

Our excess and surplus lines policies typically cover business risks with unique characteristics, such as the nature of the business or its claim history, that are difficult to profitably insure in the standard commercial lines market. Excess and surplus lines insurers have more flexibility in coverage terms and rates compared with standard lines companies, generally resulting in policies with higher rates and terms and conditions customized for specific risks, including restricted coverage where appropriate. We target small to midsized risks, and policyholders in many cases also have standard market insurance with one of our other subsidiaries. Our average excess and surplus lines policy size is approximately $6,000 in annual premiums, and the majority have coverage limits of $1 million or less. All of our excess and surplus lines policies are written for a maximum term of one year. Approximately 89 percent of our 2018 earned premiums for the excess and surplus lines insurance segment provided commercial casualty coverages and about 11 percent provided commercial property coverages. Those coverages are described below.

- Commercial casualty – Covers businesses for third-party liability from accidents occurring on their premises or arising out of their operations, including injuries sustained from products. Other coverages available include miscellaneous errors and omissions, professional liability and excess liability. Typical businesses covered include contractors, manufacturers, real estate owners and managers, retail, consultants, and bars or taverns. Policies covering liability at special events are also available.
- Commercial property – Insures buildings, inventory, equipment and business income from loss or damage due to causes such as fire, wind, hail, water, theft and vandalism. Examples of property we commonly insure with excess and surplus lines policies include temporarily vacant buildings, habitational, restaurants and relatively higher-hazard manufacturing classes.

At the end of 2018, we marketed excess and surplus lines insurance products in each of the 39 states in which we offer standard market commercial lines insurance. Offering excess and surplus lines helps agencies representing The Cincinnati Insurance Companies meet the insurance needs of their clients when coverage is unavailable in the standard market. By providing outstanding service, we can help agencies grow and prosper while also profitably growing our property casualty business.

In 2018, our 10 highest volume excess and surplus lines states generated 57.6 percent of our earned premiums, compared with 58.1 percent in 2017.

Our 10 largest states based on excess and surplus lines premium volume are shown in the table below.

(Dollars in millions)	Earned premiums	% of total earned
Year ended December 31, 2018		
Ohio	$ 19	8.3 %
Illinois	19	8.1
Texas	18	7.7
Georgia	15	6.6
Indiana	13	5.5
North Carolina	11	4.7
Pennsylvania	11	4.6
Alabama	10	4.1
Minnesota	9	4.0
Missouri	9	4.0

Agencies representing The Cincinnati Insurance Companies produce approximately $4 billion in annual premiums for all carriers writing excess and surplus lines policies for their clients. We estimate that approximately half of that premium volume matches the targeted business types and coverages we offer through our excess and surplus lines insurance segment. We structured the operations of this segment to meet the needs of these agencies and to market exclusively through them.

Agencies have access to Cincinnati Specialty Underwriters' product line through CSU Producer Resources, the wholly owned insurance brokerage subsidiary of Cincinnati Financial Corporation. CSU Producer Resources has binding authority on all classes of business written through Cincinnati Specialty Underwriters and maintains appropriate agent and surplus lines licenses.

We seek to earn a share of each agency’s best excess and surplus lines accounts by offering several unique benefits. Agency producers have direct access through CSU Producer Resources to a group of our underwriters who focus exclusively on excess and surplus lines business. Those underwriters can tap into broader services we offer to provide policyholders additional value and help producers build the relationship through experienced and responsive loss control services and claims handling. CSU Producer Resources gives extra support to our independent agency producers by remitting surplus lines taxes and stamping fees and retaining admitted market diligent search affidavits, where required. Agencies marketing through CSU Producer Resources instead of a competing brokerage generally receive a higher commission because use of our internal brokerage subsidiary eliminates some of the intermediary costs. This business is factored in their profit-sharing agreement with The Cincinnati Insurance Companies. We also offer prompt service, generally issuing approximately 95 percent of policies within 24 hours of a request to bind a policy.

Life Insurance Segment

The life insurance segment contributed $250 million of net earned premiums, representing 4.6 percent of 2018 consolidated total revenues, and reported a profit before income taxes of $8 million. Life insurance net earned premiums grew 8 percent in 2018 and 2 percent in 2017.

The Cincinnati Life Insurance Company supports our agency-centered business model by deepening the relationships we have with agents while also diversifying revenue and profitability for both the agency and our company. We primarily focus on life products that feature a steady stream of premium payments and that have the potential for generating revenue growth through increasing demand.

Life Insurance Business Lines

Four lines of business – term life insurance, universal life insurance, worksite products and whole life insurance – account for 97.6 percent of the life insurance segment's revenues:

- Term life insurance – Policies under which a death benefit is payable only if the insured dies during a specific period of time. Policy options include a return of premium provision, a benefit equal to the sum of all paid base premiums that is payable if the insured person survives to the end of the term. The policies are fully underwritten using traditional and accelerated methods.
- Universal life insurance – Long-duration life insurance policies that are fully underwritten. Contract premiums are neither fixed nor guaranteed; however, the contract does specify a minimum interest crediting rate and a maximum cost of insurance charge and expense charge. The cash values, available as a loan collateralized by the cash surrender value, are not guaranteed and depend on the amount and timing of actual premium payments and the amount of actual contract assessments.
- Worksite products – Term life insurance, return of premium term life insurance and whole life insurance offered to employees through their employer. Premiums are collected by the employer using payroll deduction. Policies are issued using a simplified underwriting approach and on a guaranteed issue basis. Worksite insurance products provide our property casualty agency force with excellent cross-serving opportunities for both commercial and personal accounts.
- Whole life insurance – Policies that provide life insurance for the entire lifetime of the insured. The death benefit is guaranteed never to decrease and premiums are guaranteed never to increase. While premiums are fixed, they must be paid as scheduled. These policies provide guaranteed cash values that are available as loans collateralized by the cash surrender value. The policies are fully underwritten.

In addition, Cincinnati Life markets:

- Deferred annuities that provide regular income payments that commence after the end of a specified period or when the annuitant attains a specified age. During the deferral period, any payments made under the contract accumulate at the crediting rate declared by the company but not less than a contract-specified guaranteed minimum interest rate. A deferred annuity may be surrendered during the deferral period for a cash value equal to the accumulated payments plus interest less the surrender charge, if any.
- Immediate annuities that provide some combination of regular income and lump-sum payments in exchange for a single premium.

Life Insurance Distribution

Cincinnati Life is licensed in 49 states and the District of Columbia. At year-end 2018, approximately 83 percent of our 2,344 property casualty agency reporting locations offered Cincinnati Life products to their clients. We also develop life business from approximately 502 other independent life insurance agencies. We are careful to solicit business from these other agencies in a manner that does not conflict with or compete with the marketing and sales efforts of our property casualty agencies.

When marketing through our property casualty agencies, we have specific competitive advantages:

- Because our property casualty operations are held in high regard, property casualty agency management is predisposed to consider selling our life products.

Marketing efforts for both our property casualty and life insurance businesses are directed by our field marketing department, coordinated with our life field marketing representatives, which assures consistency of communication and operations. Life field marketing representatives are available to meet face-to-face with agency personnel and their clients as well. Our life headquarters underwriters and other associates are available to the agents and field team to assist in the placement of business.

We continue to emphasize the cross-serving opportunities of our life insurance, including term and worksite products, for the property casualty agency's personal and commercial accounts. In both the property casualty and independent life agency distribution systems, we enjoy the advantages of offering competitive, up-to-date products and providing personal attention in combination with financial strength and stability.

- Term life insurance is our largest life insurance product line. We continue to develop and offer term products with features our agents indicate are important, such as a return of premium benefit and an option for an accelerated underwriting product for our personal lines agents.
- We also offer products addressing the needs of businesses with key person and buy-sell coverages. We offer quality, personal life insurance coverage to personal and commercial clients of our agencies.

Because of our strong capital position, we can offer a competitive product portfolio, including guaranteed products, giving our agents a marketing edge. Our life insurance company maintains strong insurer financial strength ratings: A.M. Best, A (Excellent); Fitch, A+ (Strong); and S&P, A+ (Strong). Our life insurance company has chosen not to establish a Moody's rating.

In 2018, our five highest volume states for life insurance premiums, based on information contained in statements filed with state insurance departments, are reflected in the table below.

(Dollars in millions)	Premiums	% of total earned
Year ended December 31, 2018		
Ohio	$ 54	16.8%
Pennsylvania	22	7.0
Indiana	19	6.0
Illinois	19	6.0
Michigan	16	5.2

Investments Segment

Revenues of the investments segment are primarily from net investment income and from net investment gains and losses from investment portfolios managed for the holding company and each of the operating subsidiaries.

Our investment department operates under guidelines set forth in our investment policy along with oversight of the investment committee of our board of directors. These guidelines set parameters for risk tolerances governing, among other items, the allocation of the portfolio as well as security and sector concentrations. These parameters are part of an integrated corporate risk management program. When allocating cash to various asset classes, we consider market-based factors such as risk adjusted after-tax yields as well as internal measures based in part on insurance department regulations and rating agency guidance.

The fair value of our investment portfolio was $16.609 billion and $16.948 billion at year-end 2018 and 2017, respectively, as shown in the table below. Fair value decreased, largely reflecting equity markets that were generally down in 2018, but the overall portfolio remained in an unrealized gain position. While value stocks, similar to the general makeup of our portfolio, underperformed the broader market in 2018, our portfolio outperformed the S&P 500 Index, in part due to our strategy of primarily investing in companies that tend to grow their dividends. The unrealized gain position in our fixed-maturity investments decreased in 2018, due to an increase in interest rates and a widening of corporate credit spreads.

(Dollars in millions)	At December 31, 2018				At December 31, 2017			
	Cost or amortized cost	Percent of total	Fair value	Percent of total	Cost or amortized cost	Percent of total	Fair value	Percent of total
Taxable fixed maturities	$6,920	49.4 %	$6,926	41.7 %	$6,383	47.6 %	$6,637	39.2 %
Tax-exempt fixed maturities	3,723	26.6	3,763	22.6	3,931	29.3	4,062	24.0
Common equity securities	3,195	22.8	5,742	34.6	2,918	21.8	6,039	35.6
Nonredeemable preferred equity securities	173	1.2	178	1.1	176	1.3	210	1.2
Total	$14,011	100.0%	$16,609	100.0%	$13,408	100.0%	$16,948	100.0%

The cash we generate from insurance operations historically has been invested in two broad categories of investments:

- Fixed-maturity investments – Includes taxable and tax-exempt bonds and redeemable preferred stocks. During 2018, the combined effect of a net decrease in unrealized gains, sales and calls offset purchases of fixed-maturity securities in our portfolio. During 2017, purchases and a net increase in unrealized gains offset sales and calls.
- Equity investments – Includes common and nonredeemable preferred stocks. During 2018, the combined effect of a net decrease in fair value and sales offset purchases of equity securities in our portfolio. During 2017, purchases and a net increase in unrealized gains offset sales.

At year-end 2018, less than 1 percent of the value of our investment portfolio was made up of securities that are classified as Level 3 assets and that require management's judgment to develop pricing or valuation techniques. We generally obtain at least two outside valuations for these assets and generally use the more conservative estimate. These investments include private placements, small issues and various thinly traded securities. See Item 7, Critical Accounting Estimates, Fair Value Measurements, and Item 8, Note 3 of the Consolidated Financial Statements, for additional discussion of our valuation techniques.

In addition to securities held in our investment portfolio, other invested assets included $33 million of life policy loans, $60 million of private equity investments and $30 million of real estate through direct property ownership and development projects in the United States at year-end 2018.

Our investment portfolio is further described below. Additional information about the composition of investments is included in Item 8, Note 2 of the Consolidated Financial Statements. A detailed listing of our portfolio is updated on our website, cinfin.com/investors, each quarter when we report our quarterly financial results.

Fixed-Maturity Securities Investments
By maintaining a well-diversified fixed-maturity portfolio, we attempt to manage overall interest rate, reinvestment, credit and liquidity risk. We pursue a buy-and-hold strategy and do not attempt to make large-scale changes to the portfolio in anticipation of rate movements. By investing new money on a regular basis and analyzing risk-adjusted after-tax yields, we work to achieve a laddering effect to our portfolio that may mitigate some of the effects of adverse interest rate movements.

At December 31, 2018, our investment-grade and noninvestment-grade fixed-maturity securities represented 87.0 percent and 2.4 percent of the portfolio, respectively. The remaining 10.6 percent represented fixed-maturity securities that were not rated by Moody's or S&P. Our nonrated securities include smaller municipal issues and private placement corporate securities. Many of these, although not rated by Moody's or S&P, are rated by the Securities' Valuation Office of the National Association of Insurance Commissioners (NAIC). Also included in this category are smaller public corporate securities, many of which carry a rating by an agency other than Moody's or S&P, such as Fitch or Kroll.

Other selected attributes of the fixed-maturity portfolio are shown in the table below. Additional maturity periods and other information for our fixed-maturity portfolio are shown in Item 8, Note 2 of the Consolidated Financial Statements.

	At December 31,			
	2018		2017	
Weighted average yield-to-amortized cost	4.20	%	4.40	%
Weighted average maturity	7.6	yrs	7.7	yrs
Effective duration	5.2	yrs	5.2	yrs

The fair values of our taxable fixed-maturity securities portfolio at the end of the last two years were:

(Dollars in millions)	At December 31,	
	2018	2017
Investment-grade corporate	$5,464	$5,252
States, municipalities and political subdivisions	541	403
Government-sponsored enterprises	310	254
Commercial mortgage-backed	288	286
Noninvestment-grade corporate	246	401
United States government	67	31
Foreign government	10	10
Total	$6,926	$6,637

While our strategy typically is to buy and hold fixed-maturity investments to maturity, we monitor credit profiles and fair value movements when determining holding periods for individual securities. With the exception of U.S. agency issues, no individual issuer's securities accounted for more than 1.2 percent of the taxable fixed-maturity portfolio at year-end 2018. Investment-grade corporate bonds had an average rating of Baa2 by Moody's or BBB by S&P at year-end 2018. Our taxable fixed-maturity portfolio included $288 million of commercial mortgage-backed securities with an average rating of Aa1/AA at year-end 2018.

Relative to a broad bond market index such as the Barclay's Aggregate, we are most heavily exposed to the investment grade corporate bond asset class. Within that asset class we have a weighting of 47.1 percent for the financial sector, higher than the 29.3 percent weighting for the financial sector of the Bank of America Merrill Lynch U.S. Corporate Index. Relative to the Barclay's Aggregate we are overweight in the commercial mortgage-backed securities asset class while having no exposure to the much larger residential mortgage-backed market.

At December 31, 2018, we had $3.763 billion of tax-exempt fixed-maturity securities with an average rating of Aa2/AA by Moody's and S&P. The portfolio is well diversified among approximately 1,450 municipal bond issuers. No single municipal issuer accounted for more than 0.6 percent of the tax-exempt fixed-maturity portfolio at year-end 2018.

Equity Securities Investments

After covering both our intermediate and long-range insurance obligations with fixed-maturity investments, we historically have used some available cash flow to invest in equity securities. Our equity securities portfolio includes common stocks and nonredeemable preferred stocks. Investment in equity securities has played an important role in achieving our portfolio objectives and has contributed to portfolio appreciation. We remain committed to our long-term equity focus, which we believe is key to our company's long-term growth and stability. We believe our strategy of primarily investing in a diversified selection of larger-capitalization, high-quality, dividend-increasing companies generally results in reduced volatility relative to the broader equity markets.

For federal income tax purposes, taxes on gains from appreciated investments generally are not due until securities are sold. We believe that the appreciated value of equity securities, compared with the cost of securities that is generally used as a tax basis, is a useful measure to help evaluate how fair value can change over time. On this basis, the net unrealized investment gains at year-end 2018 consisted of a net gain position in our equity portfolio of $2.552 billion. Events or factors such as economic growth or recession can affect the fair value of our equity securities.

At year-end 2018, Microsoft Corporation (Nasdaq:MSFT) was our largest single common stock investment, comprising 4.4 percent of our publicly traded common stock portfolio and 1.5 percent of the entire investment portfolio. The parent company held 38.9 percent of our common stock holdings (measured by fair value). The distribution of the portfolio among industry sectors is shown in the table below.

Common Stock Portfolio Industry Sector Distribution

	Percent of common stock portfolio			
	At December 31, 2018		At December 31, 2017	
	Cincinnati Financial	S&P 500 Industry Weightings	Cincinnati Financial	S&P 500 Industry Weightings
Sector:				
Information technology	20.9 %	20.1 %	19.5 %	23.7 %
Financial	15.6	13.3	16.2	14.8
Healthcare	14.9	15.6	13.2	13.8
Industrials	12.5	9.2	14.3	10.3
Consumer discretionary	10.5	10.0	13.6	12.2
Energy	6.7	5.3	7.3	6.1
Consumer staples	5.6	7.4	6.2	8.2
Materials	4.9	2.7	5.6	3.0
Telecomm services	3.5	10.1	1.7	2.1
Utilities	2.7	3.3	2.1	2.9
Real estate	2.2	3.0	0.3	2.9
Total	100.0 %	100.0 %	100.0 %	100.0 %

We evaluate nonredeemable preferred stocks in a manner similar to our evaluation of fixed-maturity investments, seeking attractive relative yields. We generally focus on investment-grade nonredeemable preferred stocks issued by companies with strong histories of paying common dividends, providing us with another layer of protection. Consideration is also given to nonredeemable preferred stocks that offer a dividend received deduction for income tax purposes. During 2018, we purchased $1 million of nonredeemable preferred stocks and converted $3 million in this portfolio to common stock. During 2017, we purchased $10 million of nonredeemable preferred stocks, converted $3 million to common stock and sold $15 million.

Other

We report as Other the noninvestment operations of the parent company and its noninsurer subsidiary CFC Investment Company. At year-end 2018, this subsidiary had $71 million in receivables related to its commercial leasing and financing services, compared with $61 million in receivables at year-end 2017.

We also report as Other the results of Cincinnati Re, which has contracts, also referred to as treaties, with other insurance or reinsurance companies to assume a portion of their insured risk in exchange for a portion of premiums from insurance policies covering those risks. The treaties and their exposure to losses are diverse in nature, including various lines of business and geographies for the reinsured risks. Some of our treaties reflect a type of contract commonly referred to as participating or proportional, typically sharing premiums and losses between the reinsured entity and us, as reinsurer, on a pro rata basis. Some are a contract type commonly referred to as excess of loss, where we indemnify the reinsured entity only for losses exceeding a predetermined amount.

Net written premiums for Cincinnati Re totaled $158 million in 2018, compared with $125 million in 2017. Approximately 29 percent of 2018 net written premiums was for property exposures that include risk of loss from natural catastrophes and approximately 56 percent was for casualty exposures from various liability risks. The remainder of approximately 15 percent was a combination of what we consider to be more specialized coverages that include, but are not limited to, transactional liability and credit risk transfer related to residential mortgages.

When we disclose probable maximum loss (PML) estimates on a gross basis, we also typically disclose amounts on a basis that is net of income taxes and applicable reinsurance ceded, including any retrocessions for reinsurance assumed. Based on treaties in effect at January 1, 2019, Cincinnati Re increased other property casualty catastrophe probable maximum loss estimates disclosed in Item 7, Liquidity and Capital Resources, 2019 Reinsurance Ceded Programs, by the following amounts that are net of the benefit of estimated reinstatement premiums: $116 million for a once-in-a-100-year event and $81 million for a once-in-a-250-year event. Those amounts represent a marginal basis, reflecting differences between the Cincinnati Re reinsurance portfolio and property casualty insurance written on a direct basis by The Cincinnati Insurance Companies. Ignoring diversification effects provided by those two components, on a standalone basis, probable maximum loss estimates for Cincinnati Re include the following amounts: $127 million for a once-in-a-100-year event and $150 million for a once-in-a-250-year event. Each of those effects represent a single hurricane event and are net of income taxes, based on probable maximum loss estimates from Applied Insurance Research's Touchstone® version 5.1 catastrophe model.

Regulation

The business of insurance is primarily regulated by state law. All of our insurance company subsidiaries are domiciled in the state of Ohio except The Cincinnati Specialty Underwriters Insurance Company, which is domiciled in Delaware. Each insurance subsidiary is primarily governed by the insurance laws and regulations in its respective state of domicile. We also are subject to regulatory authorities of all states in which we write insurance. The state laws and regulations that have the most significant effect on our insurance operations and financial reporting are discussed below.

- Insurance Holding Company Regulation – We are regulated as an insurance holding company system in the respective states of domicile of our primary standard market property casualty company subsidiary and its surplus lines and life insurance subsidiaries. These regulations require that we annually furnish financial and other information about the operations of the individual companies within the holding company system. Information about the risks posed by any noninsurance company subsidiaries must also be disclosed. All transactions within a holding company system affecting insurers must be fair and equitable. Notice to the state insurance commissioner is required prior to the consummation of transactions affecting the ownership or control of an insurer and prior to certain material transactions between an insurer and any person or entity in its holding company group. In addition, some of those transactions cannot be consummated without the commissioner's prior approval.
- Subsidiary Dividends – The Cincinnati Insurance Company is fully owned by Cincinnati Financial Corporation. The dividend-paying capacity of The Cincinnati Insurance Company and its fully owned subsidiaries is regulated by the laws of the applicable state of domicile. Under these laws, our insurance subsidiaries must provide a 10-day advance informational notice to the insurance commissioner for the domiciliary state prior to payment of any dividend or distribution to its shareholders. Generally, the most our insurance subsidiary can pay without prior regulatory approval is the greater of 10 percent of statutory capital and surplus or 100 percent of statutory net income for the prior calendar year.

The insurance company subsidiaries must give 30 days of notice to, and obtain prior approval from, the state insurance commissioner before the payment of an extraordinary dividend as defined by the state's insurance code. You can find information about the dividends paid by our insurance subsidiary in 2018 in Item 8, Note 9 of the Consolidated Financial Statements.

- Insurance Operations – All of our insurance subsidiaries are subject to licensing and supervision by departments of insurance in the states in which they do business. The nature and extent of such regulations vary, but generally are rooted in statutes that delegate regulatory, supervisory and administrative powers to state insurance departments. Such regulations, supervision and administration of the insurance subsidiaries include: the standards of solvency that must be met and maintained; the licensing of insurers and their agents and brokers; the nature and limitations on investments; deposits of securities for the benefit of policyholders; regulation of standard market policy forms and premium rates; policy cancellations and nonrenewals; test audit programs; periodic examination of the affairs of insurance companies; annual and other reports required to be filed on the financial condition of insurers or for other purposes; requirements regarding reserves for unearned premiums, losses and other matters; the nature of and limitations on dividends to policyholders and shareholders; the nature and extent of required participation in insurance guaranty funds; the involuntary assumption of hard-to-place or high-risk insurance business, primarily workers' compensation insurance; and the collection, remittance and reporting of certain taxes and fees. Our primary insurance regulators have adopted the Model Audit Rule for annual statutory financial reporting. This regulation closely mirrors the Sarbanes-Oxley Act on matters such as auditor independence, corporate governance and internal controls over financial reporting. The regulation permits the audit committee of Cincinnati Financial Corporation's board of directors to also serve as the audit committee of each of our insurance subsidiaries for purposes of this regulation.
- Insurance Guaranty Associations – For certain obligations of insolvent insurance companies to policyholders and claimants, states assess each member insurer in an amount relative to the insurer's proportionate share of business written by all member insurers in the state. While the amount of such assessments has not been material in recent years, we cannot predict the amount and timing of any future assessments or refunds on our insurance subsidiaries under these laws.
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Shared Market and Joint Underwriting Plans – Assigned risk plans, reinsurance facilities and joint underwriting associations are mechanisms that generally provide applicants with various basic insurance coverages when they are not available in voluntary markets. States can require participation based upon the amount of an insurance company's voluntary market share, and underwriting results related to these pools could be adverse to our company.

- Statutory Accounting – For public reporting, insurance companies prepare financial statements in accordance with GAAP. However, certain data also must be calculated according to statutory accounting rules as defined in the NAIC's Accounting Practices and Procedures Manual. While not a substitute for any GAAP measure of performance, statutory data frequently is used by industry analysts and other recognized reporting sources to facilitate comparisons of the performance of insurance companies.
- Insurance Reserves – State insurance laws require that property casualty and life insurers annually analyze the adequacy of reserves. Our appointed actuaries must submit an opinion that reserves are adequate for policy claims-paying obligations and related expenses.
- Investment Regulation – Insurance company investments must comply with laws and regulations pertaining to the type, quality and concentration of investments. Such laws and regulations permit investments in federal, state and municipal obligations, corporate bonds, preferred and common equity securities, mortgage loans, real estate and certain other investments, subject to specified limits and other qualifications.
- Risk-Based Capital Requirements – The NAIC's risk-based capital (RBC) requirements for property casualty and life insurers serve as an early warning tool for the NAIC and state regulators to identify companies that may be undercapitalized and may merit further regulatory action. The NAIC has a standard formula for annually assessing RBC. The formula for calculating RBC for property casualty companies takes into account asset and credit risks but places more emphasis on underwriting factors for reserving and pricing. The formula for calculating RBC for life insurance companies takes into account factors relating to insurance, business, asset and interest-rate risks.

Although the federal government and its regulatory agencies generally do not directly regulate the business of insurance, federal legislation and administrative rules adopted can affect our business. Privacy laws, such as the Gramm-Leach-Bliley Act, the Fair Credit Reporting Act and the Health Insurance Portability and Accounting Act (HIPAA) are the federal laws that most affect our day-to-day operations. These apply to us because we gather and use personal nonpublic information to underwrite insurance and process claims. We also are subject to other federal laws, such as the Terrorism Risk Insurance Act (TRIA), anti-money laundering statute (AML), the Nonadmitted and Reinsurance Reform Act (NRRA), and the rules and regulations of the Office of Foreign Assets Control (OFAC).

Title V of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank) created the Federal Insurance Office to monitor the insurance industry and gather information to identify issues or gaps in the regulation of insurers that could contribute to a systemic crisis in the insurance industry that affects the United States' financial system and to recommend to the Financial Stability Oversight Council that it designate an insurer as a systemically significant entity requiring additional supervision by the Federal Reserve Board. We do not expect Dodd-Frank to result in federal oversight of our operations as a systemically significant entity.

We do not expect to have any material effects on our expenditures, earnings or competitive position as a result of compliance with any federal, state or local provisions enacted or adopted relating to the protection of the environment. We currently do not have any material estimated capital expenditures for environmental control facilities.

Enterprise Risk Management

We manage enterprise risk through formal risk management programs overseen by our chief risk officer, an executive officer of the company. Our ERM framework includes an enterprise risk management committee, which is responsible for overseeing risk activities and is comprised of senior executive-level risk owners from across the enterprise. The risk committee's activities are supported by a team of representatives from business areas that focus on identifying, evaluating and developing risk plans for emerging risks. A comprehensive report is provided quarterly to our chairman, our president and chief executive officer, our board of directors and our senior executive team, as appropriate, on the status of risk metrics relative to identified tolerances and limits, risk assessments and risk plans. Our use of operational audits, strategic plans and departmental business plans, as well as our culture of open communications and our fundamental respect for our Code of Conduct, continue to help us manage risks on an ongoing basis.

Our risk management programs include a formalized risk appetite element and a risk identification and quantification process. The overall enterprise objective is to appropriately balance risk and reward to achieve an appropriate return on risk capital. The company’s key risks are discussed in Item 1A, Risk Factors, including risks related to natural catastrophes, investments and operations.

We continue to study emerging risks, including climate change risk and its potential financial effects on our results of operation and on those we insure. These effects include deterioration in the credit quality of our municipal or corporate bond portfolios and increased losses without sufficient corresponding increases in premiums. As with any risk, we seek to identify the extent of the risk exposure and possible actions to mitigate potential negative effects of risk at an enterprise level.

ITEM 1A. Risk Factors

Our business involves various risks and uncertainties that may affect achievement of our business objectives. Many of the risks could have ramifications across our organization. For example, while risks related to setting insurance rates and establishing and adjusting loss reserves are insurance activities, errors in these areas could have an impact on our investment activities, growth and overall results.

The following discussion should be viewed as a starting point for understanding the significant risks we face. It is not a definitive summary of their potential impacts or of our strategies to manage and control the risks. Please see Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, for a discussion of those strategies.

If any risks or uncertainties discussed here develop into actual events, they could have a material adverse effect on our business, financial condition, results of operations or cash flows. In that case, the market price of our common stock could decline materially. The failure of our risk management strategies could have a material adverse impact on our consolidated financial condition, results of operations or cash flows.

Readers should carefully consider this information together with the other information we have provided in this report and in other reports and materials we file periodically with the Securities and Exchange Commission as well as news releases and other information we disseminate publicly.

We rely primarily on independent insurance agents to distribute our products.

We market our main products, insurance policies for businesses and individuals, through independent, nonexclusive insurance agents. These agents are not obligated to promote our products and can and do sell our competitors' products. We must offer insurance products that meet the needs of these agents and their clients. We need to maintain good relationships with the agents who market our products. If we do not, these agents may market our competitors' products instead of ours, which may lead to us having a less desirable mix of business and could affect our results of operations.

In addition to insurance policies for businesses and individuals, a relatively small part of our business is reinsuring policies written by other insurance companies. Reinsurance assumed is marketed through reinsurance intermediaries and is generally not offered by the typical independent agents who market our insurance policies.

Certain events or conditions could diminish our agents' desire to produce business for us and the competitive advantage that our independent agents enjoy, including:

- Downgrade of the financial strength ratings of our insurance subsidiaries. We believe our strong insurer financial strength ratings, in particular, the A+ (Superior) ratings from A.M. Best for our standard market property casualty insurance group and each subsidiary in that group, are an important competitive advantage. See Item 1, Our Business and Our Strategy, Financial Strength, for additional discussion of our financial strength ratings.
- Concerns that doing business with us is difficult or not profitable, perceptions that our level of service is no longer a distinguishing characteristic in the marketplace, perceptions that our products do not meet the needs of our agents' clients or perceptions that our business practices are not compatible with agents' business models.
- Mergers and acquisitions could result in a concentration of a significant amount of premium in one agency.
- Delays in the development, implementation, performance and benefits of technology systems and enhancements or independent agent perceptions that our technology solutions do not match their needs.

A reduction in the number of independent agencies marketing our products, the failure of agencies to successfully market our products or pay amounts due to us, changes in the strategy or operations of agencies or the choice of agencies to reduce their writings of our products could affect our results of operations if we were unable to replace them with agencies that produce adequate and profitable premiums.

Further, policyholders may choose a competitor's product rather than our own because of real or perceived differences in price, terms and conditions, coverage or service. If the quality of the independent agencies with which we do business were to decline, that also might cause policyholders to purchase their insurance through different agencies or channels. Consumers, especially in the personal insurance industry segment, may increasingly choose to purchase insurance from distribution channels other than independent insurance agents, such as direct marketers. Increased advertising by insurers, especially direct marketers, could cause consumers to shift their buying habits, bypassing independent agents altogether. Innovation, new or changing technologies and/or buying trends or consumer preferences could reduce or eliminate the need or demand for products we sell.

Our credit ratings or financial strength ratings of our insurance subsidiaries could be downgraded.
A downgrade in one or more of our company's credit or debt ratings could adversely impact our borrowing costs or limit our access to capital. Financial strength ratings reflect a rating agency's opinion of our insurance subsidiaries' financial strength, operating performance, strategic position and ability to meet obligations to policyholders.
Our ratings are subject to periodic review and there is no assurance that our ratings will not be changed.
Ratings agencies could change or expand their requirements or could find that our insurance subsidiaries no longer meet the criteria established for current ratings. If our property casualty insurer financial strength ratings were to be downgraded, our agents might find it more difficult to market our products or might choose to emphasize the products of other carriers. See Item 7, Liquidity and Capital Resources, Additional Sources of Liquidity, for additional discussion of ratings for our long-term debt.

We could experience an unusually high level of losses due to catastrophic, terrorism or pandemic events or risk concentrations.
In the normal course of our business, both in our insurance and reinsurance operations, we provide coverage against perils for which estimates of losses are highly uncertain, in particular catastrophic and terrorism events. Catastrophes can be man-made or caused by natural perils. Man-made catastrophes to which we may be exposed include, but are not limited to, industrial accidents, terrorist attacks, social unrest and riot. Natural peril catastrophe events to which we may be exposed include, but are not limited to, hurricanes, tornadoes, windstorms, earthquakes, landslides, hailstorms, flooding, severe winter weather and wildfires. Due to the nature of these events, we are unable to predict precisely the frequency or potential cost of catastrophe occurrences. Various scientists and other experts believe that changing climate conditions have added to the unpredictability, frequency and severity of such natural disasters in certain parts of the world and have created additional uncertainty as to future trends and exposures. We cannot predict the impact that changing climate conditions may have on our results of operations nor can we predict how any legal, regulatory or social responses to concerns about climate change may impact our business. Additionally, man-made events, such as hydraulic fracturing, could cause damage from earth movement or create environmental and/or health hazards.

The extent of losses from a catastrophe is a function of both the total amount of insured and reinsured exposure in the area affected by the event and the severity of the event. Our ability to appropriately manage catastrophe risk depends partially on catastrophe models, which may be affected by inaccurate or incomplete data, the uncertainty of the frequency and severity of future events and the uncertain impact of climate change. Additionally, these models are recalibrated and changed over time, with more data availability and changing opinions regarding the effect of current or emerging loss patterns and conditions.

According to these models, probable maximum loss estimates from a single hurricane event that combine the effects of property casualty insurance written on a direct basis by The Cincinnati Insurance Companies and the Cincinnati Re reinsurance portfolio include the following amounts, net of amounts recoverable through reinsurance ceded, and also income taxes: $211 million for a once-in-a-100-year event and $333 million for a once-in-a-250-year event. In addition, the pending acquisition of MSP is estimated to increase the $333 million amount by approximately $55 million, based on estimates as of October 2018. Please see Item 7, Liquidity and Capital Resources, 2019 Reinsurance Programs, for a discussion of modeled losses considered in evaluating our risk mitigation strategy, which includes our ceded reinsurance program.

The geographic regions in which we market insurance and reinsurance are exposed to numerous natural catastrophes, such as:

- Hurricanes in the gulf, eastern, southeastern and northeastern coastal regions.
- Earthquakes in many regions, most particularly in the New Madrid fault zone, California, the Northwest and Southwest.
- Tornado, wind and hail in the Midwest, South, Southeast, Southwest and the mid-Atlantic.
- Wildfires.
- On a worldwide basis, in the event of a severe catastrophic event or terrorist attack we may be exposed to material losses through our reinsurance assumed operations.

The occurrence of terrorist attacks in the geographic areas we serve could result in substantially higher claims under our insurance policies than we have anticipated. While our insurance policies provide coverage for terrorism risk in all areas we serve, we have identified our major terrorism exposure geographically as general commercial risks in the Tier 1 cities of metropolitan Chicago, Dallas and New York areas, and to a much lesser degree, Houston, Los Angeles and Washington D.C. We have a greater amount of business in less hazardous Tier 2 cities such as Atlanta, Cincinnati, Cleveland, Denver, Minneapolis, Phoenix-Mesa, Pittsburgh, St. Louis and Tampa-St. Petersburg. We have exposure to small co-op utilities, water utilities, wholesale fuel distributors, small shopping malls and small colleges throughout our 42 active states and, because of the number of associates located there, our Fairfield, Ohio, headquarters. Additionally, our life insurance subsidiary could be adversely affected in the event of a terrorist event or an epidemic such as the avian or swine flu, particularly if the epidemic were to affect a broad range of the population beyond just the very young or the very old. Our associate health plan is self-funded and could similarly be affected.

Our results of operations would be adversely affected if the level of losses we experience over a period of time were to exceed our actuarially determined expectations. In addition, our financial condition may be adversely affected if we were required to sell securities prior to maturity or at unfavorable prices to pay an unusually high level of loss and loss expenses. Securities pricing might be even less favorable if a number of insurance or other companies and other investors needed to sell securities during a short period of time because of unusually high losses from catastrophic events.

Our geographic concentration ties our performance to business, economic, environmental and regulatory conditions in certain states. We market our standard market property casualty insurance products in 42 states, but our business is concentrated in the Midwest and Southeast. We also have exposure in states where we do not actively market insurance when clients of our independent agencies have businesses or properties in multiple states.

The Cincinnati Insurance Company is expanding in the area of reinsurance assumed and has staffed this operation with seasoned underwriting and analytical talent who strive to assume risks that we understand well, both quantitatively and qualitatively. Business written includes treaties that provide coverage for property catastrophe and terrorism events on a worldwide basis. At January 1, 2019, the largest loss exposure to us for our Cincinnati Re reinsurance assumed operations is from natural catastrophe events. That exposure includes probable maximum loss estimates, on a marginal basis, of the following amounts: $116 million for a once-in-a-100-year event and $81 million for a once-in-a-250-year event. Those effects represent a single hurricane event and are net of income taxes, with the marginal basis reflecting diversification effects of the Cincinnati Re reinsurance portfolio and property casualty insurance written on a direct basis by The Cincinnati Insurance Companies. If there is a high frequency of large property catastrophe or terrorism events, or a single extreme event, during the coverage period of these treaties, our financial position and results of operations could be materially affected.

Additionally, the companies we invest in might be severely affected by a severe catastrophic event or terrorist attack, which could affect our financial condition and results of operations. Our reinsurers might experience significant losses, potentially jeopardizing their ability to pay losses we cede to them. It could also reduce the availability of reinsurance. If we cannot obtain adequate coverage at a reasonable cost, it could constrain where we can write business or reduce the amount of business we can write in certain areas. We also may be exposed to state guaranty fund assessments if other carriers in a state cannot meet their obligations to policyholders. A catastrophe or epidemic event also could affect our operations by damaging our headquarters facility, injuring associates and visitors at our Fairfield, Ohio, headquarters or disrupting our associates' ability to perform their assigned tasks.

Our ability to achieve our performance objectives could be affected by changes in the financial, credit and capital markets or the general economy.
We invest premiums received from policyholders and other available cash to generate investment income and capital appreciation, while also maintaining sufficient liquidity to pay covered claims and operating expenses, service our debt obligations and pay dividends. The value of our invested assets is an important component of shareholders' equity, also known as book value. Changes in the valuation of invested assets can significantly affect changes in book value per share, a key performance objective as discussed in Item 7, Executive Summary of Management's Discussion and Analysis.

For fixed-maturity investments such as bonds, which represented 64.3 percent of the fair value of our investment portfolio at the end of 2018, the inverse relationship between interest rates and bond prices leads to falling bond values during periods of increasing interest rates. A significant increase in the general level of interest rates could have an adverse effect on our shareholders' equity.

Investment income is an important component of our revenues and net income. The ability to increase investment income and generate longer-term growth in book value is affected by factors beyond our control, such as: inflation, economic growth, interest rates, world political conditions, changes in laws and regulations, terrorism attacks or threats, adverse events affecting other companies in our industry or the industries in which we invest, market events leading to credit constriction, and other widespread unpredictable events. These events may adversely affect the economy generally and could cause our investment income or the value of securities we own to decrease. A significant decline in our investment income could have an adverse effect on our net income, and thereby on our shareholders' equity and our statutory capital and surplus. For example, a significant increase in the general level of interest rates could lead to falling bond values. For a more detailed discussion of risks associated with our investments, please refer to Item 7A, Quantitative and Qualitative Disclosures About Market Risk.

We have issued life contracts with guaranteed minimum returns, referred to as bank-owned life insurance contracts (BOLIs). BOLI investment assets must meet certain criteria established by the regulatory authorities in the jurisdiction for which the group contract holder is subject. Therefore, sales of investments may be mandated to maintain compliance with these regulations, possibly requiring gains or losses to be recorded. We could experience losses if the assets in the accounts were less than liabilities at the time of maturity or termination.

Our investment performance also could suffer because of the types of investments, industry groups and/or individual securities in which we choose to invest. Market value changes related to these choices could cause a material change in our financial condition or results of operations.

At year-end 2018, common stock holdings made up 34.6 percent of our investment portfolio. Adverse news or events affecting the global or U.S. economy or the equity markets could affect our net income, book value and overall results, as well as our ability to pay our common stock dividend. See Item 7, Investments Results, and Item 7A, Quantitative and Qualitative Disclosures About Market Risk, for a discussion of our investment activities.

Deterioration in the banking sector or in banks with which we have relationships could affect our results of operations. Our ability to maintain or obtain short-term lines of credit could be affected if the banks from which we obtain these lines are acquired, fail or are otherwise negatively affected. We may lose premium revenue if a bank that owns appointed agencies were to change its strategies. We could experience increased losses in our director and officer liability line of business if claims were made against insured financial institutions.

A deterioration of credit and market conditions could also impair our ability to access credit markets and could affect existing or future lending arrangements.

Our overall results could be affected if a significant portion of our commercial lines policyholders, including those purchasing surety bonds, are adversely affected by marked or prolonged economic downturns and events such as a downturn in construction and related sectors, tightening credit markets and higher fuel costs. Such events could make it more difficult for policyholders to finance new projects, complete projects or expand their businesses, leading to lower premiums from reduced payrolls and sales and lower purchases of equipment and vehicles. These events could also cause claims, including surety claims, to increase due to a policyholder's inability to secure necessary financing to complete projects or to collect on underlying lines of credit in the claims process. Such economic downturns and events could have a greater impact in the construction sector where we have a concentration of risks and in geographic areas that are hardest hit by economic downturns.

Deteriorating economic conditions could also increase the degree of credit risk associated with amounts due from independent agents who collect premiums for payment to us and could hamper our ability to recover amounts due from reinsurers.

Our ability to properly underwrite and price risks and increased competition could adversely affect our results.
Our financial condition, results of operations and cash flows depend on our ability to underwrite and set rates accurately for a full spectrum of risks. We establish our pricing based on assumptions about the level of losses that may occur within classes of business, geographic regions and other criteria.

To properly price our products, we must collect, properly analyze and use data to make decisions and take appropriate action; the data must be sufficient, reliable and accessible; we need to develop appropriate rating methodologies and formulae; and we may need to identify and respond to trends quickly. We may overestimate or underestimate loss cost trends or these trends may unexpectedly change, leading to losing business by pricing risks above our competitors or charging rates too low to maintain profitability. Inflation trends, especially outside of historical norms, may make it more difficult to determine adequate pricing. If rates are not accurate, we may not generate enough premiums to offset losses and expenses, or we may not be competitive in the marketplace.

Our ability to set appropriate rates could be hampered if states where we write business refuse to allow rate increases that we believe are necessary to cover the risks insured. A state could also hamper our ability to set appropriate rates if it no longer allowed us to use factors that we believe are predictive of loss, such as credit-based factors. Multiple states require us to purchase reinsurance from a mandatory reinsurance fund. Such reinsurance funds can create a credit risk for insurers if not adequately funded by the state and, in some cases, the existence of a reinsurance fund could affect the prices charged for our policies. The effect of these and similar arrangements could reduce our profitability in any given period or limit our ability to grow our business.

The insurance industry is cyclical and intensely competitive. From time to time, the insurance industry goes through prolonged periods of intense competition during which it is more difficult to attract new business, retain existing business and maintain profitability. Competition in our insurance business is based on many factors, including:
- Competitiveness of premiums charged
- Relationships among carriers, agents, brokers and policyholders
- Underwriting and pricing methodologies that allow insurers to identify and flexibly price risks
- Compensation provided to agents
- Underwriting discipline
- Terms and conditions of insurance coverage
- Speed with which products are brought to market
- Product and marketing innovations, including advertising
- Technological competence and innovation
- Ability to control expenses
- Adequacy of financial strength ratings by independent ratings agencies such as A.M. Best
- Quality of services and tools provided to agents and policyholders
- Claims satisfaction and reputation

We compete with major U.S., Bermuda, European, and other international insurers and reinsurers and with underwriting syndicates, some of which have greater financial, marketing and management resources than we do. Recent industry consolidation, including business combinations among insurance and other financial services companies, has resulted in larger competitors with even greater financial resources. We also compete with new companies that continue to enter the insurance and reinsurance markets. In addition, capital market participants have created alternative products that are intended to compete with reinsurance products that we sell in our reinsurance assumed operations. Increased competition could result in fewer submissions, lower premium rates, and less favorable policy terms and conditions, which could reduce our underwriting margins and have a material adverse effect on our results of operations and financial condition.

If our pricing was incorrect or we were unable to compete effectively because of one or more of these factors, our premium writings could decline and our results of operations and financial condition could be materially adversely affected. Large competitors could intentionally disrupt the market by targeting certain lines or underpricing the market.

Please see the discussion of our Commercial Lines, Personal Lines, Excess and Surplus Lines and Life Insurance Segments in Item 1, Our Segments, for a discussion of our competitive position in the insurance marketplace.

Our pricing and capital models could be flawed.
We use various predictive pricing models, stochastic models and/or forecasting techniques to help us understand our business, analyze risk and estimate future trends. The output of these models is used to assist us in making underwriting, pricing, reinsurance, reserving and capital decisions and helps us set our strategic direction.
These models contain numerous assumptions, including the assumption that the data used is sufficient and accurate. They are also subject to uncertainties and limitations inherent in any statistical analysis. Actual results may be materially different from modeled output, resulting in pricing our products incorrectly, overestimating or underestimating reserves, or inaccurately forecasting the impact of modeled events on our results. This could materially adversely impact the results of our operations.

Our loss reserves, our largest liability, are based on estimates and could be inadequate to cover our actual losses.
Our consolidated financial statements are prepared using GAAP. These principles require us to make estimates and assumptions that affect the amounts reported in the Consolidated Financial Statements and accompanying Notes. Actual results could differ materially from those estimates. For a discussion of the significant accounting policies we use to prepare our financial statements, the material implications of uncertainties associated with the methods, assumptions and estimates underlying our critical accounting policies and the process used to determine our loss reserves, please refer to Item 8, Note 1 of the Consolidated Financial Statements, and Item 7, Critical Accounting Estimates, Property Casualty Insurance Loss and Loss Expense Reserves and Life Insurance Policy Reserves.

Our most critical accounting estimate is loss reserves. Loss reserves are the amounts we expect to pay for covered claims and expenses we incur to settle those claims. The loss reserves we establish in our financial statements represent an estimate of amounts needed to pay and administer claims arising from insured events that have already occurred, including events that have not yet been reported to us. Loss reserves are estimates and are inherently uncertain; they do not and cannot represent an exact measure of liability. Inflationary scenarios, especially scenarios outside of historical norms or regulatory changes that affect the assumptions underlying our critical accounting estimates, may make it more difficult to estimate loss reserves. Accordingly, our loss reserves for past periods could prove to be inadequate to cover our actual losses and related expenses. Any changes in these estimates are reflected in our results of operations during the period in which the changes are made. An increase in our loss reserves would decrease earnings, while a decrease in our loss reserves would increase earnings.

Unforeseen losses, the type and magnitude of which we cannot predict, may emerge. These additional losses could arise from changes in the legal environment, laws and regulations, climate change, catastrophic events, increases in loss severity or frequency, environmental claims, mass torts or other causes. Such future losses could be substantial. Inflationary scenarios may cause the cost of claims, especially medical claims, to rise, impacting reserve adequacy and our results of operations.

In addition to the risks stated above, reinsurance assumed reserves are subject to uncertainty because a reinsurer relies on the original underwriting decisions and claims reserving practices of ceding companies. As a result, we are subject to the risk that our ceding companies may not have adequately evaluated the risks reinsured by us and the premiums ceded may not adequately compensate us for the risks we assume. In addition, there is generally a longer lapse of time from the occurrence of the event to the reporting of the loss or benefit to the reinsurer and ultimate resolution or settlement of the loss.

We may not be able to successfully or timely complete the transaction to acquire MSP Underwriting Limited.
On October 11, 2018, we entered into an agreement with Münchener Rückversicherungs Gesellschaft AG (Munich Re) for the sale and purchase of the entire issued share capital of MSP Underwriting Limited, pursuant to which we agreed to purchase, and Munich Re agreed to sell, all of the issued and outstanding share capital of MSP and its subsidiaries, which includes the Lloyds' managing agent, Beaufort Underwriting Agency Limited for Lloyd's Syndicate 318.

The transaction may not be completed, or may not be completed in the time frame, on the terms or in the manner currently anticipated. The completion of the transaction is subject to the satisfaction or waiver of customary closing conditions, such as receipt of certain regulatory approvals. There can be no assurance that the conditions to closing of the transaction will be satisfied or waived or that other events will not intervene to delay or result in the failure to close the transaction. In addition, the agreement may be terminated prior to closing if certain closing conditions are not satisfied, including receipt of the previously referenced regulatory approvals, on or prior to April 11, 2019.

While we believe that we will receive all required approvals for the transaction, there can be no assurance as to the receipt or timing of receipt of these approvals. A substantial delay in obtaining any required authorizations, approvals or consents, or the imposition of unfavorable terms, conditions or restrictions contained in such authorizations, approvals or consents, could prevent the completion of the transaction or have an adverse effect on the anticipated benefits of the transaction.

The anticipated benefits of the transaction may not be realized.
If the transaction is completed, the company can provide no assurance that the anticipated benefits of the transaction will be fully realized in the time frame anticipated or at all, or that the costs or difficulties related to the integration of MSP's operations into the company's will not be greater than expected. The success of the transaction will depend, in part, on our ability to realize the anticipated business opportunities and growth prospects from acquiring MSP. We may never realize these business opportunities and growth prospects. Integrating MSP will require significant efforts and expenditures. Our management might have its attention diverted while trying to integrate operations and corporate and administrative infrastructures and the cost of integration may exceed our expectations.

MSP's international operations will subject the company to additional regulation and could expose the company to additional investment, political and economic risks.
Following the completion of the transaction, we will have international operations that could expose the company to a number of additional risks. These risks include restrictions such as price controls, capital controls, currency exchange limits, ownership limits and other restrictive or anti-competitive governmental actions or requirements, which could have an adverse effect on the company's business and reputation. The company's business activities outside the United States could also be subject to political and economic risks, including foreign currency and credit risk. Additionally, MSP's operations will expand the products offered by us.

Additionally, following the closing of the transaction, business activities outside the United States will subject the company to additional domestic and foreign laws and regulations, including the Foreign Corrupt Practices Act, the UK Bribery Act and similar laws in other countries that prohibit the making of improper payments to foreign officials. In addition, insurers in the United Kingdom (including managing agents and members of Lloyd's of London) are subject to Solvency II and the UK regulatory regime, which itself includes rules promulgated by Lloyd's of London. Although the company has policies and controls in place that are designed to ensure compliance with these laws and regulatory requirements, if those controls are ineffective and an employee or intermediary fails to comply with applicable laws and regulations, the company could suffer civil and criminal penalties and the company's business and reputation could be adversely affected. Some countries have laws and regulations that lack clarity and, even with local expertise and effective controls, it can be difficult to determine the exact requirements of, and potential liability under, the local laws. Failure to comply with local laws in a particular market may result in substantial liability and could have a significant and negative effect not only on the company’s business in that market but also on the company’s reputation generally.

Business activities at MSP will be subject to approval by Lloyd's of a business plan each year. There is risk that plans will not be approved or will be limited. As a Lloyd’s managing agent and syndicate, MSP is exposed to various risks and uncertainties associated with Lloyd's, including its obligation to maintain funds at Lloyd’s to support its underwriting activities and periodic assessment of its capital, governance and other aspects of its business.

Recent developments relating to the United Kingdom's referendum vote in favor of leaving the European Union could adversely affect MSP's operations following the closing of the transaction.
The UK held a referendum on June 23, 2016, in which a majority of voters voted for the UK's withdrawal from the European Union (Brexit). Because of this vote, the terms of the UK's withdrawal from the European Union and the relationship between the UK and the European Union going forward is currently being negotiated, including the terms of trade between them. The ultimate impact of Brexit is uncertain and will depend on any agreements that the UK makes to retain access to European Union markets. Brexit could also lead to legal uncertainty and potentially divergent national laws and regulations as the UK determines which European Union laws to replace or replicate. These or other adverse consequences from Brexit could adversely affect the operations and business opportunities of MSP, following the closing of the transaction.

With a view to mitigating the potential effects of Brexit on business underwritten through Lloyd's, as has been publicly announced, Lloyd's has set up an insurance company subsidiary in Belgium, with the intention of underwriting European Economic Area insurance business via that subsidiary (where required) beginning on January 1, 2019. It is not possible at this stage to determine how effective this proposed Brexit contingency plan will be.

Our ability to obtain or collect on our reinsurance protection could affect our business, financial condition, results of operations and cash flows.
We buy property casualty and life reinsurance coverage to mitigate the liquidity risk and earnings volatility risk of an unexpected rise in claims severity or frequency from catastrophic events or a single large loss. The availability, amount and cost of reinsurance depend on market conditions and may vary significantly. If we were unable to obtain reinsurance on acceptable terms and in appropriate amounts, our business and financial condition could be adversely affected.

In addition, we are subject to credit risk with respect to our reinsurers. Although we purchase reinsurance to manage our risks and exposures to losses, this reinsurance does not discharge our direct obligations under the policies we write. We would remain liable to our policyholders even if we were unable to recover what we believe we are entitled to receive under our reinsurance contracts. Reinsurers might refuse or fail to pay losses that we cede to them, or they might delay payment. For long-tail claims, the creditworthiness of our reinsurers may change before we can recover amounts to which we are entitled. A reinsurer's insolvency, inability or unwillingness to make payments under the terms of its reinsurance agreement with our insurance subsidiaries could have a material adverse effect on our financial position, results of operations or cash flows.

Please see Item 7, Liquidity and Capital Resources, 2019 Reinsurance Ceded Programs, for a discussion of selected reinsurance transactions.

Our business depends on the uninterrupted operation of our facilities, systems and business functions.
Our business depends on our associates' ability to perform necessary business functions, such as processing new and renewal policies and handling claims. We increasingly rely on technology and systems to accomplish these business functions in an efficient and uninterrupted fashion. Our inability to access our headquarters facilities or a failure of technology, telecommunications or other systems or the loss or failure of services provided by key vendors, could significantly impair our ability to perform such functions on a timely basis or affect the accuracy of transactions. If sustained or repeated, such a business interruption or system failure could result in a deterioration of our ability to write and process new and renewal business, serve our agents and policyholders, pay claims in a timely manner, collect receivables or perform other necessary business functions. If our disaster recovery and business continuity plans did not sufficiently consider, address or reverse the circumstances of an interruption or failure, this could result in a materially adverse effect on our operating results and financial condition. This risk is exacerbated because approximately 66 percent of our associates work at our Fairfield, Ohio, headquarters.

Our ability to successfully execute business functions also depends on hiring and retaining qualified associates. Competition for high-quality executives and other key associates occurs within the insurance industry and from other industries. We also must effectively develop and manage associates, including providing training and resources. Such tools and information can allow them to effectively perform critical business functions and adapt to changing business needs. If we were unable to attract and retain certain associates, or if we fail to provide adequate training or resources, we could limit the success of executing our strategic plans and vital business functions.

The effects of changes in industry practices, laws and regulations on our business are uncertain.
As industry practices and legal, judicial, legislative, regulatory, political, social and other environmental conditions change, unexpected and unintended issues related to insurance pricing, claims and coverage may emerge. These issues may adversely affect our business by impeding our ability to obtain adequate rates for covered risks or otherwise extending coverage beyond our underwriting intent, by increasing the number or size of claims, by varying assumptions underlying our critical accounting estimates or by increasing duties owed to policyholders beyond contractual obligations. In some instances, unforeseeable emerging and latent claim and coverage issues may not become apparent until sometime after we have issued the insurance policies that could be affected by the changes. As a result, the full extent of liability under our insurance contracts may not be known for many years after a policy is issued and our pricing and reserve estimates may not accurately reflect its effect.

We are required to adopt new or revised accounting standards issued by recognized authoritative organizations, including the Financial Accounting Standards Board (FASB) and the SEC. Future changes required to be adopted could change the current accounting treatment that we apply and could result in material adverse effects on our results of operations, financial position or cash flows.

Our investment income benefits from tax rate preferences for municipal bond interest and dividend income from equity securities. Market valuations for these securities also benefit from the tax-preference aspect of current tax laws, affecting the value of our investment portfolio and also shareholders' equity. Future changes in tax laws could result in material adverse effects on our results of operations and financial condition.

The NAIC, state insurance regulators and state legislators continually re-examine existing laws and regulations governing insurance companies and insurance holding companies, specifically focusing on modifications to statutory accounting principles, interpretations of existing laws, regulations relating to product forms and pricing methodologies and the development of new laws and regulations that affect a variety of financial and nonfinancial components of our business. Any proposed or future legislation, regulation or NAIC initiatives, if adopted, may be more restrictive on our ability to conduct business than current regulatory requirements or may result in higher costs. The loss or significant restriction on the use of a particular variable, such as credit, in pricing and underwriting our products could lead to future unprofitability and increased costs.

Federal laws and regulations and the influence of international laws and regulations, including those that may be enacted in the wake of the financial and credit crises, may have adverse effects on our business, potentially including a change from a state-based system of regulation to a system of federal regulation, the repeal of the McCarran Ferguson Act, and/or measures under the Dodd-Frank Act that establish the Federal Insurance Office and provide for a determination that a nonbank financial company presents systemic risk and therefore should be subject to heightened supervision by the Federal Reserve Board. It is not known how this federal office will coordinate and interact with the NAIC and state insurance regulators. Adoption or implementation of any of these measures may restrict our ability to conduct our insurance business, govern our corporate affairs or increase our cost of doing business. Implementation of the Affordable Care Act (ACA) may affect the ability of the company to grow profitably.

The effects of such changes could adversely affect our results of operations. Please see Item 7, Critical Accounting Estimates, Property Casualty Insurance Loss and Loss Expense Reserves and Life Insurance Policy Reserves, for a discussion of our reserving practices.

Managing technology initiatives and meeting data security requirements are significant challenges.
While technology can streamline many business processes and ultimately reduce the costs of operations, technology initiatives present short-term cost and also have implementation and operational risks. In addition, we may have inaccurate expense projections, implementation schedules or expectations regarding the effectiveness and user

acceptance of the end product. These issues could escalate over time. If we were unable to find and retain associates with key technical knowledge, our ability to develop and deploy key technology solutions could be hampered.

We necessarily collect, use and hold data concerning individuals and businesses with whom we have a relationship. Threats to data security, including unauthorized access and cyberattacks, rapidly emerge and change, exposing us to additional costs for protection or remediation and competing time constraints to secure our data in accordance with customer expectations and statutory and regulatory requirements.

While we take commercially reasonable measures to keep our systems and data secure, it is difficult or impossible to defend against every risk being posed by changing technologies as well as criminals intent on committing cybercrime. Increasing sophistication of cyber criminals and terrorists make keeping up with new threats difficult and could result in a breach. Patching and other measures to protect existing systems and servers could be inadequate, especially on systems that are being retired. Controls employed by our U.S., off-shore and cloud vendors could prove inadequate. We could also experience a breach by intentional or negligent conduct on the part of associates or other internal sources. Our systems and those of our third-party vendors may become vulnerable to damage or disruption due to circumstances beyond our or their control, such as from catastrophic events, power anomalies or outages, natural disasters, network failures, and viruses and malware.

A breach of our security or the security of a vendor that results in unauthorized access to our data could expose us to a disruption or challenges relating to our daily operations as well as to data loss, litigation, damages, fines and penalties, significant increases in compliance costs and reputational damage.

Our status as an insurance holding company with no direct operations could affect our ability to pay dividends in the future.

Cincinnati Financial Corporation is a holding company that transacts substantially all of its business through its subsidiaries. Our primary assets are the stock in our operating subsidiaries and our investments. Consequently, our cash flow to pay cash dividends and interest on our long-term debt depends on dividends we receive from our operating subsidiaries and income earned on investments held at the parent-company level.

Dividends received from our insurance subsidiary are restricted by the insurance laws of Ohio, its domiciliary state. These laws establish minimum solvency and liquidity thresholds and limits. In 2019, the maximum dividend that may be paid without prior regulatory approval is limited to the greater of 10 percent of statutory capital and surplus or 100 percent of statutory net income for the prior calendar year, up to the amount of statutory unassigned capital and surplus as of the end of the prior calendar year. Dividends exceeding these limitations may be paid only with prior approval of the Ohio Department of Insurance. We might not be able to receive dividends from our insurance subsidiary, or we might not receive dividends in the amounts necessary to meet our debt obligations or to pay dividends on our common stock without liquidating securities. This could affect our financial position.

Please see Item 1, Regulation, and Item 8, Note 9 of the Consolidated Financial Statements, for a discussion of insurance holding company dividend regulations.

ITEM 1B. Unresolved Staff Comments
None

ITEM 2. Properties
Cincinnati Financial Corporation owns our headquarters building located on 102 acres of land in Fairfield, Ohio. This building has 1,508,200 square feet of total space. The property, including land is recorded in our financial statements at $131 million at December 31, 2018, and is classified as land, building and equipment, net, for company use. John J. & Thomas R. Schiff & Co. Inc., a related party, occupies 6,750 square feet (less than 1 percent). This property is used for the operations described in the Consolidated Financial Statements and accompanying Notes.

Cincinnati Financial Corporation owns Gilmore Pointe, located on the northwest corner of our headquarters property. This four-story building contains approximately 103,000 square feet of usable space. The property is recorded in the financial statements at $6 million at December 31, 2018, and is classified as investment property in Other Invested Assets, net. At December 31, 2018, unaffiliated tenants occupied 88 percent, Cincinnati Financial affiliates occupy 12 percent.

The Cincinnati Insurance Company owns the CFC Winton Center used for multiple operations with approximately 48,000 square feet of total space, located approximately six miles from our headquarters. The property, including land, is recorded in our financial statements at $9 million at December 31, 2018, and is classified as land, building and equipment, net, for company use.

ITEM 3. Legal Proceedings
Neither the company nor any of our subsidiaries is involved in any material litigation other than ordinary, routine litigation incidental to the nature of its business.

ITEM 4. Mine Safety Disclosures
This item is not applicable to the company.

Part II

ITEM 5. Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Cincinnati Financial Corporation had approximately 150,000 shareholders of record as of December 31, 2018. While approximately 13,000 shareholders are registered, the majority of shareholders are beneficial owners whose shares are held in “street name” by brokers and institutional accounts. We believe many of our independent agent representatives and most of the 4,999 associates of our subsidiaries own the company’s common stock. Our common shares are traded under the symbol CINF on Nasdaq.

We discuss the factors that affect our ability to pay cash dividends and repurchase shares in Item 7, Liquidity and Capital Resources. Regulatory restrictions on dividends our insurance subsidiary can pay to the parent company are discussed in Item 8, Note 9 of the Consolidated Financial Statements.

The following summarizes securities authorized for issuance under our equity compensation plans as of December 31, 2018:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights at December 31, 2018	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plan (excluding securities reflected in column (a)) at December 31, 2018
	(a)	(b)	(c)
Equity compensation plans approved by security holders	3,273,815	$ 56.08	9,709,209
Equity compensation plans not approved by security holders	—	—	—
Total	3,273,815	$ 56.08	9,709,209

The number of securities remaining available for future issuance includes: 8,570,563 shares available for issuance under the Cincinnati Financial Corporation 2016 Stock Compensation Plan (the 2016 Plan), 838,646 shares available for issuance under the Cincinnati Financial Corporation 2012 Stock Compensation Plan (the 2012 Plan), and 300,000 shares available for issuance of share grants under the Director’s Stock Plan of 2018. The number of securities remaining available for future issuance assumes the number of securities to be issued from performance-based awards are issued at the target-level performance level. Both the 2016 Plan and 2012 Plan allow for issuance of stock options, service-based or performance-based restricted stock units, stock appreciation rights or other equity-based grants. Awards other than stock options granted from the 2016 and 2012 plans are counted as three shares against the plan for each one share of common stock actually issued. Additional information about share-based associate compensation granted under our equity compensation plans is available in Item 8, Note 17 of the Consolidated Financial Statements.

The following summarizes shares purchased under our repurchase programs:

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum number of shares that may yet be purchased under the plans or programs
October 1-31, 2018	—	$ —	—	15,476,785
November 1-30, 2018	—	—	—	15,476,785
December 1-31, 2018	—	—	—	15,476,785
Totals	—	—	—	

We did not sell any of our shares that were not registered under the Securities Act during 2018. Our repurchase program was expanded on October 22, 2007, to increase our repurchase authorization to approximately 13 million shares. Our repurchase program does not have an expiration date. On January 26, 2018, an additional 15 million shares were authorized, resulting in 15,476,785 shares available for purchase under our program at December 31, 2018.

Cumulative Total Return
As depicted in the graph below, the five-year total return on a $100 investment made December 31, 2013, assuming the reinvestment of all dividends, was 74.6 percent for Cincinnati Financial Corporation's common stock compared with 71.2 percent for the S&P Composite 1500 Property & Casualty Insurance Index and 50.3 percent for the S&P 500 Index.

The S&P Composite 1500 Property & Casualty Insurance Index included 26 companies at year-end 2018:
The Allstate Corporation, Ambac Financial Group Inc., AMERISAFE Inc., Aspen Insurance Holdings Limited, Chubb Limited, Cincinnati Financial Corporation, Employers Holdings Inc., First American Financial Corporation, The Hanover Insurance Group Inc., HCI Group Inc., James River Group Holdings Ltd., Kemper Corporation, Mercury General Corporation, The Navigators Group Inc., Old Republic International Corporation, ProAssurance Corporation, The Progressive Corporation, RLI Corp., Safety Insurance Group Inc., Selective Insurance Group Inc., Stewart Information Services Corporation, The Travelers Companies Inc., United Fire Group Inc., United Insurance Holdings Corp., Universal Insurance Holdings Inc. and W. R. Berkley Corporation.

The S&P 500 Index includes a representative sample of 500 leading companies in a cross section of industries of the U.S. economy. Although this index focuses on the large capitalization segment of the market, it is widely viewed as a proxy for the total market.

The following graph depicts $100 invested on December 31, 2013, in stock or index, including reinvestment of dividends. The years shown represent each respective fiscal year ending December 31.

Comparison of Five-Year Cumulative Total Return

ITEM 6. Selected Financial Data

(In millions, except per share data and shares outstanding in thousands)	Years ended December 31,				
	2018	2017	2016	2015	2014
Consolidated Income Statement Data					
Earned premiums	$5,170	$4,954	$4,710	$4,480	$4,243
Investment income, net of expenses	619	609	595	572	549
Investment gains and losses, net *	(402)	148	124	70	133
Total revenues	5,407	5,732	5,449	5,142	4,945
Net income	287	1,045	591	634	525
Net income per common share:					
Basic	$1.76	$6.36	$3.59	$3.87	$3.21
Diluted	1.75	6.29	3.55	3.83	3.18
Cash dividends per common share:					
Ordinary declared	2.12	2.00	1.92	1.84	1.76
Ordinary paid	2.09	1.98	1.90	1.82	1.74
Special declared and paid	—	0.50	—	0.46	—
Diluted weighted average shares	164.5	166.0	166.5	165.6	165.1
Consolidated Balance Sheet Data					
Total investments	$16,732	$17,051	$15,500	$14,423	$14,386
Net unrealized investment portfolio gains	2,598	3,540	2,625	2,094	2,719
Deferred policy acquisition costs	738	670	637	616	578
Total assets	21,935	21,843	20,386	18,888	18,748
Gross loss and loss expense reserves	5,707	5,273	5,085	4,718	4,485
Life policy and investment contract reserves	2,779	2,729	2,671	2,583	2,497
Long-term debt	788	787	787	786	786
Shareholders' equity	7,833	8,243	7,060	6,427	6,573
Book value per share	48.10	50.29	42.95	39.20	40.14
Shares outstanding	162,843	163,899	164,387	163,944	163,747
Value creation ratio	(0.1)%	22.9 %	14.5 %	3.4 %	12.6 %
Consolidated Property Casualty Operations Data					
Earned premiums	$4,920	$4,722	$4,482	$4,271	$4,045
Unearned premiums	2,515	2,403	2,306	2,200	2,081
Gross loss and loss expense reserves	5,646	5,219	5,035	4,660	4,438
Investment income, net of expenses	401	392	384	368	358
Loss and loss expense ratio	65.5 %	66.4 %	63.8 %	60.2 %	65.0 %
Underwriting expense ratio	30.9	31.1	31.0	30.9	30.6
Combined ratio	96.4 %	97.5 %	94.8 %	91.1 %	95.6 %

We retrospectively adopted ASU 2015-15, Interest-Imputation of Interest: Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements, as of December 31, 2015. All prior year information has been restated.

* Investment gains and losses are integral to our financial results over the long term, but our substantial discretion in the timing of investment sales may cause this value to fluctuate substantially. Also, applicable accounting standards require us to recognize gains and losses from changes in fair values of equity securities and changes in embedded derivatives without actual realization of those gains and losses. We discuss investment gains and losses for the past three years in Item 7, Investments Results.

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

Introduction

The purpose of Management’s Discussion and Analysis is to provide an understanding of Cincinnati Financial Corporation’s consolidated results of operations and financial condition. Our Management’s Discussion and Analysis should be read in conjunction with Item 6, Selected Financial Data, and Item 8, Consolidated Financial Statements and related Notes. We present per share data on a diluted basis unless otherwise noted, adjusting those amounts for all stock splits and stock dividends.

We begin with an executive summary of our results of operations, followed by other highlights, an overview of our strategy, an outlook for future performance and details about critical accounting estimates. In several instances, we refer to estimated industry data so that we can provide information on our performance within the context of the overall insurance industry. Unless otherwise noted, the industry data is prepared by A.M. Best, a leading insurance industry statistical, analytical and financial strength rating organization. Information from A.M. Best is presented on a statutory accounting basis. When we provide our results on a comparable statutory accounting basis, we label it as such; all other company data is presented in accordance with accounting principles generally accepted in the United States of America (GAAP).

Through The Cincinnati Insurance Company, Cincinnati Financial Corporation is one of the 25 largest property casualty insurers in the nation, based on net written premium volume for the first nine months of 2018, among approximately 2,000 U.S. stock and mutual insurer groups. We market our insurance products through a select group of independent insurance agencies in 42 states as discussed in Item 1, Our Business and Our Strategy.

The U.S. economy, the insurance industry and our company continue to face many challenges. Our long-term perspective has allowed us to address immediate challenges while also focusing on the major decisions that best position the company for success through all market cycles. We believe that this forward-looking view consistently benefits our shareholders, agents, policyholders and associates.

To measure our progress, we have defined a measure of value creation that we believe captures the contribution of our insurance operations, the success of our investment strategy and the importance we place on paying cash dividends to shareholders. We refer to this measure as our value creation ratio, or VCR, and it is made up of two primary components: (1) our rate of growth in book value per share plus (2) the ratio of dividends declared per share to beginning book value per share. This measure, intended to be all-inclusive regarding changes in book value per share, uses originally reported book value per share in cases where book value per share has been adjusted, such as after the adoption of Accounting Standards Updates with a cumulative effect of a change in accounting.

Executive Summary

Our value creation ratio, defined above, is our primary performance target. VCR trends are shown in the table below.

	One year	Three-year % average	Five-year % average
Value creation ratio:			
As of December 31, 2018	(0.1)%	12.4 %	10.7 %
As of December 31, 2017	22.9	13.6	13.9
As of December 31, 2016	14.5	10.2	11.8

We are targeting an annual value creation ratio averaging 10 percent to 13 percent over the next five-year period. At negative 0.1 percent for 2018, we were significantly below the low end of that range, but were within the range for the three-year and five-year periods that ended in December 2018.

The table below shows the primary components of our value creation ratio on a percentage basis. Analysis of the components aids understanding of our financial performance. Our financial results are further analyzed in the Corporate Financial Highlights section below.

	Years ended December 31,		
	2018	2017	2016
Value creation ratio major components:			
Net income before investment gains	7.4 %	13.5 %	7.9 %
Change in fixed-maturity securities, realized and unrealized gains	(3.2)	1.1	(0.2)
Change in equity securities, investment gains	(3.8)	8.6	6.8
Other	(0.5)	(0.3)	0.0
Value creation ratio	(0.1)%	22.9 %	14.5 %

The 2018 value creation ratio decreased by 23.0 percentage points, compared with 2017, and again included a significant contribution of operating results. VCR in 2018 included a 0.7 percent contribution from certain non-recurring items, including the impact of various tax accounting method changes. VCR in 2017 included a 7.0 percent contribution from a tax benefit due to net deferred income tax liability revaluation related to U.S. tax reform. The 2018 ratio decrease reflected a decline in market valuation, with reductions of 12.4 percentage-points from our equity securities investment portfolio and 4.3 points from our fixed-maturity securities investment portfolio. The 2017 value creation ratio was 8.4 percentage points higher than in 2016, reflecting the 7.0 percent tax benefit noted above and a 3.1 point increase in the contribution from realized gains plus the change in unrealized gains from our investment portfolios in aggregate.

We believe our value creation ratio is a useful measure. With the continuation of economic and market uncertainty in recent years, the long-term nature of this measure provides a meaningful measure of our long-term progress in creating shareholder value. The table below shows calculations for VCR.

(Dollars are per share)	Years ended December 31,		
	2018	2017	2016
Value creation ratio:			
End of period book value*	$48.10	$50.29	$42.95
Less beginning of period book value	50.29	42.95	39.20
Change in book value	(2.19)	7.34	3.75
Dividend declared to shareholders	2.12	2.50	1.92
Total value creation	$(0.07)	$9.84	$5.67
Value creation ratio from change in book value**	(4.3)%	17.1 %	9.6 %
Value creation ratio from dividends declared to shareholders***	4.2	5.8	4.9
Value creation ratio	(0.1)%	22.9 %	14.5 %

* Book value per share is calculated by dividing end of period total shareholders' equity by end of period shares outstanding
** Change in book value divided by the beginning of year book value
*** Dividend declared to shareholders divided by beginning of year book value

When looking at our longer-term objectives, we see three primary performance drivers for our value creation ratio:

- Premium growth – We believe over any five-year period our agency relationships and initiatives can lead to a property casualty written premium growth rate that exceeds the industry average. The compound annual growth rate of our net written premiums was 5.3 percent over the five-year period 2014 through 2018, slightly exceeding the 5.1 percent estimated growth rate for the property casualty insurance industry, with 2018 representing industry data reported through the first nine months of 2018. The industry's growth rate excludes its mortgage and financial guaranty lines of business.
- Combined ratio – We believe our underwriting philosophy and initiatives can drive performance to achieve our underwriting profitability target of a GAAP combined ratio over any five-year period that consistently averages within the range of 95 percent to 100 percent. Our GAAP combined ratio averaged 95.1 percent over the five-year period 2014 through 2018, near the more favorable end of the performance target range. Performance as measured by the combined ratio is discussed in Consolidated Property Casualty Insurance Results. Our statutory combined ratio averaged 94.7 percent over the five-year period 2014 through 2018, compared with an estimated 99.9 percent for the property casualty industry, with 2018 representing industry data reported through the first nine months of 2018. The industry's ratio again excludes its mortgage and financial guaranty lines of business.
- Investment contribution – We believe our investment philosophy and initiatives can drive investment income growth and lead to a total return on our equity investment portfolio over a five-year period that exceeds the five-year total return of the S&P 500 Index.

Investment income growth, on a pretax basis, had a compound annual growth rate of 3.2 percent over the five-year period 2014 through 2018.
Over the five years ended December 31, 2018, our equity portfolio compound annual total return was 8.4 percent compared with a compound annual total return of 8.5 percent for the Index. Our equity portfolio favors larger-capitalization, high-quality, dividend growing stocks with a slight value orientation. In recent years, returns for this type of stocks have generally lagged the broader market. For the year 2018, our annual equity portfolio total return was negative 3.3 percent, compared with negative 4.2 percent for the Index.

The board of directors is committed to rewarding shareholders directly through cash dividends and share repurchase authorizations. Through 2018, the company has increased the annual cash dividend rate for 58 consecutive years, a record we believe is matched by only seven other publicly traded U.S. companies. In addition to regular dividends, strong capital and excellent company performance provided opportunities to further reward shareholders with special dividends paid in December 2017. The board regularly evaluates relevant factors in dividend-related decisions, and the 2018 increase to the regular dividend reflected confidence in our strong capital, liquidity and financial flexibility, as well as progress through our initiatives to improve earnings performance while growing insurance premium revenues. We discuss our financial position in more detail in Liquidity and Capital Resources.

Corporate Financial Highlights
In addition to the value creation ratio discussion and analysis in the Executive Summary, we further analyze our financial results in the sections below.

Balance Sheet Data

(Dollars in millions, except share data)	At December 31, 2018	At December 31, 2017
Total investments	$16,732	$17,051
Total assets	21,935	21,843
Short-term debt	32	24
Long-term debt	788	787
Shareholders' equity	7,833	8,243
Book value per share	48.10	50.29
Debt-to-total-capital ratio	9.5 %	9.0 %

Total investments decreased by 2 percent during 2018 on a fair value basis, with a decrease in our securities portfolio valuation that offset a 4 percent increase in its cost basis. Entering 2019, we believe the portfolio continues to be well diversified and is well positioned to withstand short-term fluctuations. We discuss our investment strategy in Item 1, Investments Segment, and results for the segment in Investments Results. Total assets rose less than 1 percent. Shareholders’ equity decreased by 5 percent and book value per share decreased by 4 percent, for reasons discussed in the preceding Executive Summary.

The amount of our debt obligations increased by $9 million in 2018, compared with 2017. Our 9.5 percent ratio of debt to total capital (debt plus shareholders’ equity) at year-end 2018 increased by 0.5 percentage points compared with the prior-year ratio.

Income Statement and Per Share Data

(In millions, except per share data)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$5,170	$4,954	$4,710	4	5
Investment income, net of expenses (pretax)	619	609	595	2	2
Investment gains and losses, net (pretax)	(402)	148	124	nm	19
Total revenues	5,407	5,732	5,449	(6)	5
Net income	287	1,045	591	(73)	77
Comprehensive income	24	1,648	940	(99)	75
Net income per share - diluted	1.75	6.29	3.55	(72)	77
Cash dividends declared per share	2.12	2.50	1.92	(15)	30
Diluted weighted average shares outstanding	164.5	166.0	166.5	(1)	0

Net income in 2018 decreased $758 million or 73 percent compared with 2017, largely due to a $495 million benefit in 2017 from net deferred income tax liability revaluation due to U.S. tax reform and a $413 million decrease for 2018 in net investment gains after taxes. The 2018 decrease in net income was partially offset by an increase in property casualty underwriting income of $64 million after taxes, as discussed below, and a $57 million increase in investment income after taxes. Our investment operation's performance is discussed further in Investments Results. Net income in 2018 also included a $56 million benefit from certain other non-recurring items, primarily the impact of various tax accounting method changes as disclosed in Item 8, Note 11 of the Consolidated Financial Statements.

Net income increased $454 million in 2017, compared with 2016, primarily due to a $495 million benefit from net deferred income tax liability revaluation due to U.S. tax reform.

As discussed in Investments Results, we reported a net investment loss in 2018, primarily due to unfavorable changes in fair values of equity securities even though we continued to hold the securities. For both 2017 and 2016 we reported investment gains, largely due to investment sales that were discretionary in timing and amount.

Contribution from Insurance Operations

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Consolidated property casualty data:					
Net written premiums	$5,030	$4,840	$4,580	4	6
Earned premiums	4,920	4,722	4,482	4	5
Underwriting profit	186	128	242	45	(47)
				Pt. Change	Pt. Change
GAAP combined ratio	96.4 %	97.5 %	94.8 %	(1.1)	2.7
Statutory combined ratio	96.0	97.2	94.5	(1.2)	2.7
Written premium to statutory surplus	1.0	1.0	1.0	0.0	0.0

Property casualty net written premiums and earned premiums each grew 4 percent in 2018, reflecting average renewal price increases, a higher level of insured exposures and premium growth initiatives. Premium growth rates in 2018 were less than in 2017. Trends and related factors are discussed in Commercial Lines, Personal Lines and Excess and Surplus Lines Insurance Results, respectively.

Our property casualty insurance operations generated underwriting profits for each of the three years ending in 2018. The $58 million improvement in 2018, compared with 2017, included a $7 million increase in losses from natural catastrophe events and and $48 million more benefit from net favorable reserve development on prior accident years. The $114 million decrease in 2017, compared with 2016, included a $4 million increase in losses from natural catastrophe events and less benefit from net favorable reserve development on prior accident years.

We measure property casualty underwriting profitability primarily by the combined ratio. Our combined ratio measures the percentage of each earned premium dollar spent on claims plus all expenses related to our property casualty operations, all on a pretax basis. A lower ratio indicates more favorable results and better underlying performance. A ratio below 100 percent represents an underwriting profit. Initiatives to improve our combined ratio are discussed in Item 1, Our Business and Our Strategy, Strategic Initiatives. In 2018, 2017 and 2016, favorable development on reserves for claims that occurred in prior accident years helped offset other incurred losses and loss expenses. Reserve development is discussed further in Property Casualty Loss and Loss Expense Obligations and Reserves. Losses from weather-related catastrophes are another important item influencing the combined ratio and are discussed along with other factors in Financial Results for our property casualty business and related segments.

Our life insurance segment reported an $8 million profit in 2018 and a $1 million loss in 2017. We discuss results for the segment in Life Insurance Results. Most of this segment's investment income is included in our investments segment results. In addition to investment income, investment gains from the life insurance investment portfolio are also included in our investments segment results.

Strategic Initiatives Overview

Management has worked to identify a strategy that can lead to long-term success, with concurrence by the board of directors. Our strategy is intended to position us to compete successfully in the markets we have targeted while appropriately managing risk. We discuss our long-term, proven strategy in Item 1, Our Business and Our Strategy. We believe successful implementation of initiatives that support our strategy will help us better serve our agent customers and reduce volatility in our financial results while we also grow earnings and book value over the long term, successfully navigating challenging economic, market or industry pricing cycles.

- Manage insurance profitability – Implementation of these initiatives is intended to enhance underwriting expertise and knowledge, thereby increasing our ability to manage our business while also gaining efficiency. Better profit margins can arise from additional information and more focused action on underperforming product lines, plus pricing capabilities we are expanding through the use of technology and analytics. In addition to enhancing company efficiency, improving internal processes also supports the ability of the independent agencies that represent us to grow profitably by allowing them to serve clients faster and to more efficiently manage agency expenses.
- Drive premium growth – Implementation of these initiatives is intended to further penetrate each market we serve through our independent agencies. Strategies aimed at specific market opportunities, along with service enhancements, can help our agents grow and increase our share of their business. Premium growth initiatives also include expansion of Cincinnati Re. Diversified growth also may reduce variability of losses from weather-related catastrophes.

Detailed discussion of recent-year financial performance influenced by our strategic initiatives appears below in Financial Results and Liquidity and Capital Resources.

Factors Influencing Our Future Performance

Our view of the shareholder value we can create over the next five years relies largely on three assumptions – each highly dependent on the external environment. First, we anticipate our property casualty average insurance prices will increase in proportion to, or in excess of, our loss cost trends. Second, we assume that the economy can maintain a long-term growth track. Third, we assume that valuations of our marketable securities will vary within a typical range over time, based on historical trends. If those assumptions prove to be inaccurate, we may not be able to achieve our performance targets even if we accomplish our strategic objectives.

Other factors that could influence our ability to achieve our targets include:

- We expect the insurance marketplace to remain competitive, which is likely to cause carriers to pursue strategies that they believe could lead to economies of scale, market share gains or the potential for an improved competitive posture.
- We expect the independent insurance agency system to remain strong, with continued agency consolidation. If soft insurance market conditions return in the near term, it will create additional risk for agencies.
- A return of soft insurance market pricing could significantly affect growth rates and earned premium levels for some time into the future. If the economy falters, we may experience low or no premium growth for our property casualty segments. Premium growth also may lag as some of our growth initiatives require more time to reach their full contribution. In addition, economic factors, including inflation, may increase our claims and settlement expenses related to medical care, litigation and construction.
- Financial markets continued to display volatility in recent years, and some predict more turbulence in the future from effects such as changes in government policy, growth challenges for emerging country economies or other geopolitical events that could also affect the U.S. economy and markets. Should financial markets decline temporarily, which could occur as part of typical market volatility patterns, the related book value component of our value creation ratio could also register a weak or negative result.

We discuss in Item 1A, Risk Factors, many potential risks to our business and our ability to achieve our qualitative and quantitative objectives. These are real risks, but their probability of occurring may not be high. We also believe that our risk management programs generally could mitigate their potential effects, in the event they would occur.

Critical Accounting Estimates

Cincinnati Financial Corporation's financial statements are prepared using U.S. GAAP. These principles require management to make estimates and assumptions that affect the amounts reported in the Consolidated Financial Statements and accompanying Notes. Actual results could differ materially from those estimates.

The significant accounting policies used in the preparation of the financial statements are discussed in Item 8, Note 1 of the Consolidated Financial Statements. In conjunction with that discussion, material implications of uncertainties associated with the methods, assumptions and estimates underlying the company's critical accounting policies are discussed below. The audit committee of the board of directors reviews the annual financial statements with management and the independent registered public accounting firm. These discussions cover the quality of earnings, review of reserves and accruals, reconsideration of the suitability of accounting principles, review of highly judgmental areas including critical accounting estimates, audit adjustments and such other inquiries as may be appropriate.

Property Casualty Insurance Loss and Loss Expense Reserves

We establish loss and loss expense reserves for our property casualty insurance business as balance sheet liabilities. Unpaid loss and loss expenses are the estimated amounts necessary to pay for and settle all outstanding insured claims, including incurred but not reported (IBNR) claims. These reserves account for unpaid loss and loss expenses as of a financial statement date.

For some lines of business that we write, a considerable and uncertain amount of time can elapse between the occurrence, reporting and payment of insured claims. The amount we will actually have to pay for such claims also can be highly uncertain. This uncertainty, together with the size of our reserves, makes the loss and loss expense reserves our most significant estimate. Gross loss and loss expense reserves were \$5.646 billion at year-end 2018 compared with \$5.219 billion at year-end 2017.

How Reserves Are Established

Our field claims representatives establish case reserves when claims are reported to the company to provide for our unpaid loss and loss expense obligation associated with known claims. Field claims managers supervise and review all claims with case reserves less than \$100,000. Additionally, a headquarters supervisor and regional claims manager review all claims under \$100,000 if litigation or a certain specialty claim is involved. All claims with case reserves of \$100,000 or greater are reviewed and approved by an experienced headquarters supervisor and regional claims manager. Upper-level headquarters claims managers also review case reserves of \$175,000 or more.

Our claims representatives base their case reserve estimates primarily upon case-by-case evaluations that consider:

- type of claim involved
- circumstances surrounding each claim
- policy provisions pertaining to each claim
- potential for subrogation or salvage recoverable
- general insurance reserving practices

Case reserves of all sizes are subject to review on a 90-day cycle, or more frequently if new information about a loss becomes available. As part of the review process, we monitor industry trends, cost trends, relevant court cases, legislative activity and other current events in an effort to ascertain new or additional loss exposures.

We also establish IBNR reserves to provide for all unpaid loss and loss expenses not accounted for by case reserves:

- For events designated as natural catastrophes resulting in losses incurred related to direct premiums, we calculate IBNR reserves directly as a result of an estimated IBNR claim count and an estimated average claim amount for each event. Once case reserves are established for a catastrophe event, we reduce the IBNR reserves. Our claims department management coordinates the assessment of these events and prepares the related IBNR reserve estimates. Such an assessment involves a comprehensive analysis of the nature of the event, of policyholder exposures within the affected geographic area and of available claims intelligence.

Depending on the nature of the event, available claims intelligence could include surveys of field claims associates within the affected geographic area, feedback from a catastrophe claims team sent into the area, as well as data on claims reported as of the financial statement date. To determine whether an event is designated as a catastrophe, we generally use the catastrophe definition provided by Property Claims Service (PCS), a division of Insurance Services Office. PCS defines a catastrophe as an event that causes countrywide damage of $25 million or more in insured property losses and affects a significant number of policyholders and insureds.

- For events designated as natural catastrophes resulting in losses incurred related to our reinsurance assumed operations, Cincinnati Re, we calculate IBNR reserves for losses incurred separately from losses related to direct premiums. That process begins with a review of our occurrence and aggregate in-force reinsurance limits for our portfolio of ceding companies likely to be affected by such events. Using third party catastrophe models combined with our own proprietary adjustments, we model a range of stochastic and scenario events for each ceding company to make an initial estimate of potential losses. Consideration of industry loss estimates promulgated by a variety of third parties provides a base to perform a market share loss analysis for each ceding company. We obtain loss estimates from ceding companies based on their view of losses, which includes their claim reports, actual claim payments and reserve estimates. Based on these data points, we estimate ultimate losses that we reinsure for each ceding company. We then benchmark individual ceding company reports against what we expected and use this information across our portfolio to refine our ultimate loss estimates. Once known payments and reserves are reported by individual ceding companies, we establish case reserves by reinsurance treaty. IBNR reserves are then calculated as the difference between the estimate of the ultimate loss and loss expenses incurred for each catastrophe event, reduced by the sum of total loss and loss expense payments and total case reserves. Incurred losses from catastrophe events for Cincinnati Re can include non-U.S. experience reported by the ceding companies, in addition to events designated as catastrophes by PCS.
- For asbestos and environmental claims, we calculate IBNR reserves by deriving an actuarially-based estimate of total unpaid loss and loss expenses. We then reduce the estimate by total case reserves. We discuss the reserve analysis that applies to asbestos and environmental reserves in Liquidity and Capital Resources, Asbestos and Environmental Loss and Loss Expense Reserves.
- For loss expenses that pertain primarily to salaries and other costs related to our claims department associates, also referred to as adjusting and other expense or AOE, we calculate reserves based on an analysis of the relationship between paid losses and paid AOE. Reserves for AOE are allocated to company, line of business and accident year based on a claim count algorithm. Claim counts reported and used in the reserving process are primarily measured by insurance coverages that are triggered when a loss occurs and a reserve is established. Coverages are defined as unique combinations of certain attributes such as line of business and cause of loss. Claims that are opened and closed without payment are included in the reported claim counts. Claim counts are presented on a direct basis only and do not reflect any assumed or ceded reinsurance.
- For all other claims and events, including reinsurance assumed or ceded, IBNR reserves are calculated as the difference between an actuarial estimate of the ultimate cost of total loss and loss expenses incurred reduced by the sum of total loss and loss expense payments and total case reserves estimated for individual claims. Reserve amounts for those other claims and events are significant, and represent the majority of amounts shown as IBNR reserves and loss expense reserves in the table included in Liquidity and Capital Resources, Property Casualty Loss and Loss Expense Obligations and Reserves. We discuss below the development of actuarially based estimates of the ultimate cost of total loss and loss expenses incurred.

Our actuarial staff applies significant judgment in selecting models and estimating model parameters when preparing reserve analyses. Unpaid loss and loss expenses are inherently uncertain as to timing and amount. Uncertainties relating to model appropriateness, parameter estimates and actual loss and loss expense amounts are referred to as model, parameter and process uncertainty, respectively. Our management and actuarial staff address these uncertainties in the reserving process in a variety of ways.

Our actuarial staff bases its IBNR reserve estimates for these losses primarily on the indications of methods and models that analyze accident year data. Accident year is the year in which an insured claim, loss or loss expense occurred. The specific methods and models that our actuaries have used for the past several years are:

- paid and reported loss development methods
- paid and reported loss Bornhuetter-Ferguson methods
- individual and multiple probabilistic trend family models

Our actuarial staff uses diagnostics provided by stochastic reserving software to evaluate the appropriateness of the models and methods listed above. The software's diagnostics have indicated that the appropriateness of these models and methods for estimating IBNR reserves for our lines of business tends to depend on a line's tail. Tail refers to the time interval between a typical claim's occurrence and its settlement. For our long-tail lines such as workers' compensation and commercial casualty, models from the probabilistic trend family tend to provide superior fits and to validate well compared with models underlying the loss development and Bornhuetter-Ferguson methods. The loss development and Bornhuetter-Ferguson methods, particularly the reported loss variations, tend to produce the more appropriate IBNR reserve estimates for our short-tail lines such as homeowner and commercial property. For our mid-tail lines such as personal and commercial auto liability, all models and methods provide useful insights.

Our actuarial staff also devotes significant time and effort to the estimation of model and method parameters. The loss development and Bornhuetter-Ferguson methods require the estimation of numerous loss development factors. The Bornhuetter-Ferguson methods also involve the estimation of numerous expected loss ratios by accident year. Models from the probabilistic trend family require the estimation of development trends, calendar year inflation trends and exposure levels. Consequently, our actuarial staff monitors a number of trends and measures to gain key business insights necessary for exercising appropriate judgment when estimating the parameters mentioned, such as:

- company and industry pricing
- company and industry exposure
- company and industry loss frequency and severity
- past large loss events
- company and industry premium
- company in-force policy count

These trends and measures also support the estimation of expected accident year loss ratios needed for applying the Bornhuetter-Ferguson methods and for assessing the reasonability of all IBNR reserve estimates computed. Our actuarial staff reviews these trends and measures quarterly, updating parameters derived from them as necessary.

Quarterly, our actuarial staff summarizes their reserve analysis by preparing an actuarial best estimate and a range of reasonable IBNR reserves intended to reflect the uncertainty of the estimate. An inter-departmental committee that includes our actuarial management team reviews the results of each quarterly reserve analysis. The committee establishes management's best estimate of IBNR reserves, which is the amount that is included in each period's financial statements. In addition to the information provided by actuarial staff, the committee also considers factors such as:

- large loss activity and trends in large losses
- new business activity
- judicial decisions
- general economic trends such as inflation
- trends in litigiousness and legal expenses
- product and underwriting changes
- changes in claims practices

The determination of management's best estimate, like the preparation of the reserve analysis that supports it, involves considerable judgment. Changes in reserving data or the trends and factors that influence reserving data may signal fundamental shifts or may simply reflect single-period anomalies. Even if a change reflects a fundamental shift, the full extent of the change may not become evident until years later. Moreover, since our methods and models do not explicitly relate many of the factors we consider directly to reserve levels, we typically cannot quantify the precise impact of such factors on the adequacy of reserves prospectively or retrospectively.

Due to the uncertainties described above, our ultimate loss experience could prove better or worse than our carried reserves reflect. To the extent that reserves are inadequate and increased, the amount of the increase is a charge in the period that the deficiency is recognized, raising our loss and loss expense ratio and reducing earnings. To the extent that reserves are redundant and released, the amount of the release is a credit in the period that the redundancy is recognized, reducing our loss and loss expense ratio and increasing earnings.

Key Assumptions – Loss Reserving

Our actuarial staff makes a number of key assumptions when using their methods and models to derive IBNR reserve estimates. Appropriate reliance on these key assumptions essentially entails determinations of the likelihood that statistically significant patterns in historical data may extend into the future. The four most significant of the key assumptions used by our actuarial staff and approved by management are:

- Emergence of loss and defense and cost containment expenses, also referred to as DCCE, on an accident year basis. Historical paid loss, reported loss and paid DCCE data for the business lines we analyze contain patterns that reflect how unpaid losses, unreported losses and unpaid DCCE as of a financial statement date will emerge in the future. Unless our actuarial staff or management identifies reasons or factors that invalidate the extension of historical patterns into the future, these patterns can be used to make projections necessary for estimating IBNR reserves. Our actuaries significantly rely on this assumption in the application of all methods and models mentioned above.
- Calendar year inflation. For long-tail and mid-tail business lines, calendar year inflation trends for future paid losses and paid DCCE do not vary significantly from a stable, long-term average. Our actuaries base reserve estimates derived from probabilistic trend family models on this assumption.
- Exposure levels. Historical earned premiums, when adjusted to reflect common levels of product pricing and loss cost inflation, can serve as a proxy for historical exposures. Our actuaries require this assumption to estimate expected loss ratios and expected DCCE ratios used by the Bornhuetter-Ferguson reserving methods. They may also use this assumption to establish exposure levels for recent accident years, characterized by “green” or immature data, when working with probabilistic trend family models.
- Claims having atypical emergence patterns. Characteristics of certain subsets of claims, such as high frequency, high severity, or mass tort claims, have the potential to distort patterns contained in historical paid loss, reported loss and paid DCCE data. When testing indicates this to be the case for a particular subset of claims, our actuaries segregate these claims from the data and analyze them separately. Subsets of claims that could fall into this category include hurricane claims or claims for other weather events where total losses we incurred were very large, individual large claims and asbestos and environmental claims.

These key assumptions have not changed since 2005, when our actuarial staff began using probabilistic trend family models to estimate IBNR reserves.

Paid losses, reported losses and paid DCCE are subject to random as well as systematic influences. As a result, actual paid losses, reported losses and paid DCCE are virtually certain to differ from projections. Such differences are consistent with what specific models for our business lines predict and with the related patterns in the historical data used to develop these models. As a result, management does not closely monitor statistically insignificant differences between actual and projected data.

Reserve Estimate Variability

Management believes that the standard error of a reserve estimate, a measure of the estimate’s variability, provides the most appropriate measure of the estimate’s sensitivity. The reserves we establish depend on the models we use and the related parameters we estimate in the course of conducting reserve analyses. However, the actual amount required to settle all outstanding insured claims, including IBNR claims, as of a financial statement date depends on stochastic, or random, elements as well as the systematic elements captured by our models and estimated model parameters. For the lines of business we write, process uncertainty – the inherent variability of loss and loss expense payments – typically contributes more to the imprecision of a reserve estimate than parameter uncertainty.

Consequently, a sensitivity measure that ignores process uncertainty would provide an incomplete picture of the reserve estimate’s sensitivity. Since a reserve estimate’s standard error accounts for both process and parameter uncertainty, it reflects the estimate's full sensitivity to a range of reasonably likely scenarios.

The table below provides standard errors and reserve ranges by major property casualty lines of business and in total for net loss and loss expense reserves as well as the potential effects on our net income, assuming a 21 percent federal tax rate. Standard errors and reserve ranges for assorted groupings of these lines of business cannot be computed by simply adding the standard errors and reserve ranges of the component lines of business, since such an approach would ignore the effects of product diversification. See Liquidity and Capital Resources, Property Casualty Loss and Loss Expense Obligations and Reserves, Range of Reasonable Reserves, for more details on our total reserve range. While the table reflects our assessment of the most likely range within which each line's actual unpaid loss and loss expenses may fall, one or more lines' actual unpaid loss and loss expenses could nonetheless fall outside of the indicated ranges.

(Dollars in millions)	Net loss and loss expense range of reserves				
	Carried reserves	Low point	High point	Standard error	Net income effect
At December 31, 2018					
Total	$5,408	$5,037	$5,481	$ 222	$ 175
Commercial casualty	$2,181	$1,876	$2,358	$ 241	$ 190
Commercial property	342	317	364	24	19
Commercial auto	690	649	714	32	25
Workers' compensation	959	812	995	91	72
Personal auto	329	298	329	15	12
Homeowners	169	161	178	8	6

Life Policy and Investment Contract Reserves

We establish the reserves for traditional life insurance policies based on expected expenses, mortality, morbidity, withdrawal rates and investment yields, including a provision for uncertainty. Once these assumptions are established, they generally are maintained throughout the lives of the contracts. We use both our own experience and industry experience adjusted for historical trends in arriving at our assumptions for expected mortality and morbidity. We use our own experience and historical trends for setting our assumptions for expected withdrawal rates and expenses. We base our assumptions for expected investment income on our own experience adjusted for current and future expected economic conditions.

We establish reserves for our universal life, deferred annuity and investment contracts equal to the cumulative account balances, which include premium deposits plus credited interest less charges and withdrawals. Some of our universal life insurance policies contain no-lapse guarantee provisions. For these policies, we establish a reserve in addition to the account balance based on expected no-lapse guarantee benefits and expected policy assessments.

Asset Impairment

Our investment portfolio is our largest asset. We monitor the fixed-maturity portfolio and all other assets for signs of other-than-temporary or permanent impairment. We monitor decreases in the fair value of invested assets; an accumulation of company costs in excess of the amount originally expected to acquire or construct an asset; uncollectability of all receivable assets; or other factors such as bankruptcy, deterioration of creditworthiness, failure to pay interest; signs indicating that the receivable carrying amount may not be recoverable; and changes in legal factors or in the business climate.

The application of our impairment policy resulted in other-than-temporary impairment (OTTI) charges that reduced our income before income taxes by $5 million in 2018, $9 million in 2017 and $2 million in 2016. OTTI losses represent noncash charges to income and are reported as investment losses.

Our internal investment portfolio managers monitor their assigned portfolios. If a fixed-maturity security is valued below amortized cost, the portfolio managers undertake additional reviews. Such declines often occur in conjunction with events taking place in the overall economy and market, combined with events specific to the industry or operations of the issuing organization. Managers review quantitative measurements such as a declining trend in fair value, the extent of the fair value decline and the length of time the value of the security has been depressed, as well as qualitative measures such as pending events, credit ratings and issuer liquidity. We are even more proactive when these declines in valuation are greater than might be anticipated when viewed in the context of overall economic and market conditions. We provide information about valuations of our invested assets in Item 8, Note 2 of the Consolidated Financial Statements.

All fixed-maturity securities valued below 100 percent of amortized cost are reported to the asset impairment committee for evaluation. When evaluating for OTTI, the committee considers the company's intent and ability to retain a security for a period adequate to recover its cost.

Fixed-security securities that have previously been other-than-temporarily impaired are evaluated based on their adjusted cost or amortized cost and further written down if deemed appropriate. We provide detailed information about fixed-maturity securities fair valued in a continuous loss position at year-end 2018 in Item 7A, Application of Asset Impairment Policy.

Impairment charges are recorded for other-than-temporary declines in value if fair value is below cost or amortized cost and, in the asset impairment committee's judgment, the fair value is not expected to be recouped within a designated recovery period. When determining OTTI charges for our fixed-maturity portfolio, management places significant emphasis on whether issuers of debt are current on contractual payments and whether future contractual amounts are likely to be paid. Our invested asset impairment policy states that fixed maturities with fair values below their amortized cost that the company (1) intends to sell or (2) more likely than not will be required to sell before recovery of their amortized cost basis are deemed to be OTTI. The amortized cost of any such securities is reduced to fair value as the new cost basis, and a realized loss is recorded in the period in which it is recognized. When these two criteria are not met, and the company believes that full collection of interest and/or principal is not likely, we determine the net present value of future cash flows by using the effective interest rate implicit in the security at the date of acquisition as the discount rate and compare that amount with the amortized cost and fair value of the security. The difference between the net present value of the expected future cash flows and amortized cost of the security is considered a credit loss and recognized as a realized loss in the period in which it occurred. The difference between the fair value and the net present value of the cash flows of the security, the noncredit loss, is recognized in other comprehensive income as an unrealized loss.

Fixed-maturity securities considered to have a temporary decline would be expected to recover their amortized cost, which may be at maturity. Under the same accounting treatment as fair value gains, temporary declines (changes in the fair value of these fixed-maturity securities) are reflected in shareholders' equity on our Consolidated Balance Sheets in accumulated other comprehensive income (AOCI), net of tax, and have no impact on net income.

Fair Value Measurements

Valuation of Financial Instruments
Accounting Standards Codification (ASC) 820-10, Fair Value Measurements and Disclosures, defines fair value as the exit price or the amount that would be (1) received to sell an asset or (2) paid to transfer a liability in an orderly transaction between marketplace participants at the measurement date. When determining an exit price, we must, whenever possible, rely upon observable market data.

We have categorized our financial instruments, based on the priority of the inputs to the valuation technique, into a three-level fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure the financial instruments fall within different levels of the hierarchy, the categorization is based on the lowest level that is significant to the fair value measurement of the instrument. While we consider pricing data from outside services, we ultimately determine whether the data or inputs used by these outside services are observable or unobservable.

Financial assets and liabilities recorded in the Consolidated Balance Sheets are categorized based on the inputs to the valuation techniques as described in Item 8, Note 3 of the Consolidated Financial Statements.

Level 1 and Level 2 Valuation Techniques
Over 99 percent of the $16.609 billion of securities in our investment portfolio at year-end 2018, measured at fair value, are classified as Level 1 or Level 2. Financial assets that fall within Level 1 and Level 2 are priced according to observable data from identical or similar securities that have traded in the marketplace. Also within Level 2 are securities that are valued by outside services or brokers where we have evaluated and verified the pricing methodology and determined that the inputs are observable.

Level 3 Valuation Techniques
At December 31, 2018, total Level 3 assets were less than 1 percent of our investment portfolio measured at fair value. Financial assets that fall within the Level 3 hierarchy are valued based upon unobservable market inputs, normally because they are not actively traded on a public market. Pricing for each Level 3 security is based upon inputs that are market driven, including quotes from brokers or other external sources. We placed in the Level 3 hierarchy securities for which we were unable to obtain the pricing methodology or we could not consider the price provided as binding. Pricing for securities classified as Level 3 could not be corroborated by similar securities priced using observable inputs.

Management ultimately determined the pricing for each Level 3 security that we considered to be the best exit price valuation. Broker quotes are obtained for thinly traded securities that subsequently fall within the Level 3 hierarchy. We have generally obtained and evaluated two nonbinding quotes from brokers; our investment professionals determine our best estimate of fair value.

Employee Benefit Pension Plan
We have a defined benefit pension plan that was modified during 2008; refer to Item 8, Note 13 of the Consolidated Financial Statements, for additional information. Contributions and pension costs are developed from annual actuarial valuations. These valuations involve key assumptions including discount rates, expected return on plan assets and compensation increase rates, which are updated annually. Any adjustments to these assumptions are based on considerations of current market conditions. Therefore, changes in the related pension costs or credits may occur in the future due to changes in assumptions.

Key assumptions used in developing the benefit obligation at year-end 2018 for our qualified plan were a 4.34 percent discount rate and rates of compensation increases ranging from 2.25 percent to 3.25 percent. To determine the discount rate, a theoretical settlement portfolio of high-quality, rated corporate bonds was chosen to provide payments approximately matching the plan's projected benefit payments. A single interest rate was determined, resulting in a discounted value of the plan's benefit payments that equates to the market value of the selected bonds. The discount rate is reflective of current market interest rate conditions and our plan's liability characteristics.

Key assumptions used in developing the 2018 net pension expense for our qualified plan were a 3.73 percent discount rate, a 7.25 percent expected return on plan assets and rates of compensation increases ranging from 2.75 percent to 3.25 percent.

In 2018, the net pension expense was $5 million. In 2019, we expect the net pension expense to be approximately $3 million.

Holding all other assumptions constant, a 0.5 percentage-point decrease in the discount rate would increase our 2019 income before income taxes by less than $1 million. A 0.5 percentage-point decrease in the expected return on plan assets would decrease our 2019 income before income taxes by approximately $1 million.

The fair value of the plan assets exceeded the accumulated benefit obligation by $21 million and $23 million at year-end 2018 and 2017, respectively. The fair value of the plan assets equaled the projected plan benefit obligation at year-end 2018 and was $6 million less than the projected plan benefit obligation at year-end 2017, respectively. Market conditions and interest rates significantly affect future assets and liabilities of the pension plan.

Deferred Policy Acquisition Costs
We establish a deferred asset for expenses associated with successfully acquiring property casualty and life insurance policies, primarily commissions, premium taxes and underwriting costs. Underlying assumptions are updated periodically to reflect actual experience, and we evaluate our deferred acquisition cost recoverability.

For property casualty insurance policies, deferred acquisition costs are amortized over the terms of the policies. These costs are principally agent commissions, premium taxes and certain underwriting costs related to successful contract acquisition, which are deferred and amortized into net income as premiums are earned. We assess recoverability of deferred acquisition costs at a level consistent with the way we acquire, service and manage insurance policies and measure profitability. Deferred acquisition costs track with the change in premiums.

For life insurance policies, acquisition costs are amortized into income in proportion to premium revenue, benefit base or in accordance with the recognition of gross profit from the contract, depending on the policy type. These costs are principally agent commissions and underwriting costs related to successful contract acquisition. We analyze our acquisition cost assumptions periodically to reflect actual experience; we evaluate our deferred acquisition cost for recoverability; and we regularly conduct reviews for potential premium deficiencies or loss recognition. Changes in the amounts or timing of estimated future profits could result in adjustments to the accumulated amortization of these costs.

Recent Accounting Pronouncements
Information about recent accounting pronouncements is provided in Item 8, Note 1 of the Consolidated Financial Statements.

Financial Results

Consolidated financial results primarily reflect the results of our five reporting segments. These segments are defined based on financial information we use to evaluate performance and to determine the allocation of assets.

- Commercial lines insurance
- Personal lines insurance
- Excess and surplus lines insurance
- Life insurance
- Investments

We report as Other the noninvestment operations of the parent company and its noninsurer subsidiary, CFC Investment Company, and the financial results of our reinsurance assumed operations.

We measure profit or loss for our commercial lines, personal lines, excess and surplus lines and life insurance segments based upon underwriting results (profit or loss), which represent net earned premium less loss and loss expenses, or contract holders’ benefits incurred, and underwriting expenses on a pretax basis. We also evaluate results for our consolidated property casualty insurance operations. That is the total of our standard market segments (commercial lines and personal lines), our excess and surplus lines insurance segment and our reinsurance assumed operations. For analysis of our consolidated property casualty insurance results, it is important to include our reinsurance assumed operations earned premiums, loss and loss expenses and also underwriting expenses reported as Other. Underwriting results and segment pretax operating income are not substitutes for net income determined in accordance with GAAP.

For our consolidated property casualty insurance operations as well as the insurance segments, statutory accounting data and ratios are key performance indicators that we use to assess business trends and to make comparisons to industry results, since GAAP-based industry data generally is not as readily available.

Investments held by the parent company and the investment portfolios for the insurance subsidiaries are managed and reported as the investments segment, separate from our underwriting business. Net investment income and net investment gains and losses for our investment portfolios are discussed in the Investments Results.

The calculations of segment data are described in more detail in Item 8, Note 18, of the Consolidated Financial Statements. The following sections provide analysis and discussion of results of operations for each of the five segments.

Consolidated Property Casualty Insurance Results
Earned and net written premiums for our consolidated property casualty operations grew in 2018, reflecting average renewal price increases, a higher level of insured exposures and strategic initiatives for targeted growth. A key measure of property casualty profitability is underwriting profit or loss. Our 2018 underwriting profit of $186 million was $58 million more than in 2017, despite a $7 million unfavorable effect from a higher amount of natural catastrophe losses, mostly caused by severe weather. Prior accident year loss experience before catastrophes during 2018 was more favorable than in 2017, and was responsible for much of the 2018 underwriting profit increase. Improved profitability also included other factors, such as higher pricing, and our ongoing initiatives to improve pricing precision and loss experience related to claims and loss control practices. Underwriting profit trends are discussed further below.

The table below highlights property casualty results, with analysis and discussion in the sections that follow. That analysis and discussion includes sections by segment.

Overview – Three-Year Highlights

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$4,920	$4,722	$4,482	4	5
Fee revenues	11	11	10	0	10
Total revenues	4,931	4,733	4,492	4	5
Loss and loss expenses from:					
Current accident year before catastrophe losses	3,026	2,889	2,684	5	8
Current accident year catastrophe losses	364	368	345	(1)	7
Prior accident years before catastrophe losses	(150)	(91)	(159)	(65)	43
Prior accident years catastrophe losses	(17)	(28)	(9)	39	(211)
Loss and loss expenses	3,223	3,138	2,861	3	10
Underwriting expenses	1,522	1,467	1,389	4	6
Underwriting profit	$186	$128	$242	45	(47)
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year before catastrophe losses	61.5 %	61.1 %	59.8 %	0.4	1.3
Current accident year catastrophe losses	7.4	7.8	7.7	(0.4)	0.1
Prior accident years before catastrophe losses	(3.1)	(1.9)	(3.5)	(1.2)	1.6
Prior accident years catastrophe losses	(0.3)	(0.6)	(0.2)	0.3	(0.4)
Loss and loss expenses	65.5	66.4	63.8	(0.9)	2.6
Underwriting expenses	30.9	31.1	31.0	(0.2)	0.1
Combined ratio	96.4 %	97.5 %	94.8 %	(1.1)	2.7
Combined ratio:	96.4 %	97.5 %	94.8 %	(1.1)	2.7
Contribution from catastrophe losses and prior years reserve development	4.0	5.3	4.0	(1.3)	1.3
Combined ratio before catastrophe losses and prior years reserve development	92.4 %	92.2 %	90.8 %	0.2	1.4

Performance highlights for consolidated property casualty operations include:

- Premiums – Agency renewal written premiums rose $160 million in 2018 and represented approximately 80 percent of the growth in earned premiums and net written premiums that rose in each of our property casualty segments. The renewal premium increase was largely due to average renewal price increases and a higher level of insured exposures. Price increases with enhanced precision continue to benefit operating results.

New business written premiums produced through agencies increased $26 million in 2018, compared with 2017. Agents appointed during 2018 or 2017 produced a 2018 increase in standard lines new business of $44 million. Growth initiatives also favorably affect growth in subsequent years, particularly as newer agency relationships mature over time.

Net written premiums increased $33 million in 2018 from expansion of reinsurance assumed operations, known as Cincinnati Re^{SM}. Cincinnati Re assumes risks through reinsurance treaties and in some cases cedes part of the risk and related premiums to one or more unaffiliated reinsurance companies through transactions known as retrocessions. In 2018, earned premiums for Cincinnati Re totaled $132 million.

Other written premiums consist primarily of premiums ceded to reinsurers as part of our ceded reinsurance program and in total contributed $29 million less in 2018 to net written premiums than in 2017. An increase in ceded premiums, other than Cincinnati Re premiums, reduced net written premium growth by $8 million in 2018, compared with 2017.

The table below analyzes premium revenue components and trends.

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Agency renewal written premiums	$4,358	$4,198	$4,072	4	3
Agency new business written premiums	652	626	551	4	14
Cincinnati Re net written premiums	158	125	71	26	76
Other written premiums	(138)	(109)	(114)	(27)	4
Net written premiums	5,030	4,840	4,580	4	6
Unearned premium change	(110)	(118)	(98)	7	(20)
Earned premiums	$4,920	$4,722	$4,482	4	5

- Combined ratio – The 2018 combined ratio improved by 1.1 percentage points compared with 2017, including a 0.1 percentage-point decrease in the ratio for natural catastrophe losses. The 2018 ratio for current accident year losses and loss expenses before catastrophes increased by 0.4 percentage points, in part due to an increase in commercial lines large losses for new losses above $1 million described below, and partially offset what we believe are improvements to some of our loss experience due to recent-year initiatives to improve pricing precision and claims and loss control practices. The remainder of the 2018 combined ratio decrease included 1.2 percentage-points more benefit in the ratio for prior accident year losses and loss expenses before catastrophes. We further discuss ratios related to reserve development in the sections that follow the Catastrophe Losses Incurred table below.

Our statutory combined ratio was 96.0 percent in 2018 compared with 97.2 percent in 2017 and 94.5 percent in 2016. The estimated statutory combined ratio for the property casualty industry, with the industry's ratio excluding its mortgage and financial guaranty lines of business and based on industry data reported through the first nine months of 2018, was 97.6 percent in 2018, 105.1 percent in 2017 and 100.9 percent in 2016. The contribution of catastrophe losses to our statutory combined ratio was 7.1 percentage points in 2018, 7.2 percentage points in 2017 and 7.5 percentage points in 2016, compared with industry estimates of 5.1, 8.8 and 4.7 percentage points, respectively, with 2018 representing industry data reported through the first nine months of 2018. Components of the combined ratio are discussed below.

Catastrophe loss trends are an important factor in assessing trends for overall underwriting results. Our 10-year historical annual average contribution of catastrophe losses to the combined ratio was 6.8 percentage points at December 31, 2018. Our five-year average was 6.2 percentage points.

For our property catastrophe occurrence and aggregate excess of loss treaty that became effective in July 2018, we can recover catastrophe loss amounts up to $50 million in excess of net $125 million per occurrence for combined business written on a direct basis and by Cincinnati Re, $25 million in excess of $32 million for the aggregation of Cincinnati Re catastrophe occurrences subject to certain deductibles, $50 million in excess of $10 million for business written on a direct basis for the loss perils of earthquake, brushfire and wildfire in certain western states, or various combinations of occurrences with coverage up to the $50 million aggregate limit. The aggregate limit is $25 million if covered losses pertain only to Cincinnati Re. The aggregate recovery from reinsurers providing this coverage totaled $36 million for incurred losses in 2018, after considering all applicable deductibles. The Cincinnati Re portion of the aggregate recovery totaled $21 million. The aggregate recovery was from two events during 2018, both wildfires in California.

The following table shows catastrophe losses incurred for the past two calendar years, net of reinsurance, as well as the effect of loss development on prior period catastrophe reserves. We individually list declared catastrophe events for which our incurred losses reached or exceeded $10 million.

Catastrophe Losses Incurred
(Dollars in millions, net of reinsurance)

Dates	Events	Regions	Commercial lines	Personal lines	Excess and surplus lines	Cincinnati Re	Total
2018							
Jan. 8-10	Flood, Wind	West	$ —	$ 10	$ —	$ —	$ 10
Mar. 1-3	Freezing, Ice, Snow, Wind	Northeast, South	5	5	—	—	10
Mar. 18-21	Flood, Hail, Wind	South	19	7	1	—	27
Apr. 13-17	Flood, Hail, Wind	Midwest, Northeast, South	20	7	—	—	27
Jul. 19-22	Flood, Hail, Wind	Midwest, South	9	8	—	—	17
Aug. 27 - Sep. 7	Flood, Wind	International	—	—	—	15	15
Sep. 13-19	Flood, Hail, Wind	South	72	8	—	1	81
Oct. 10-12	Flood, Hail, Wind	South	30	18	—	15	63
Nov. 8-21	Wildfire	West	—	10	—	—	10
Nov. 29 - Dec. 2	Flood, Hail, Wind	Midwest, South, West	5	5	—	—	10
All other 2018 catastrophes			48	43	1	2	94
Development on 2017 and prior catastrophes			(21)	4	—	—	(17)
Calendar year incurred total			$ 187	$ 125	$ 2	$ 33	$ 347
2017							
Feb. 28-Mar. 1	Flood, hail, wind	Midwest, South	$ 20	$ 23	$ —	$ —	$ 43
Mar. 6-9	Flood, hail, wind	Midwest, Northeast, South	26	11	—	—	37
Mar. 21-22	Flood, hail, wind	South	19	9	—	—	28
Apr. 4-6	Flood, hail, wind	Midwest, South	8	15	—	—	23
May 8-11	Flood, hail, wind	Midwest, South, West	14	1		—	15
May 15-18	Flood, hail, wind	Midwest, Northeast, South	3	10	—	—	13
Jun. 11	Flood, hail, wind	Midwest	4	15	—	—	19
Jun. 16-19	Flood, hail, wind	Midwest, Northeast, South	7	3	—	—	10
Jun. 27-29	Flood, hail, wind	Midwest	18	1	—	—	19
Aug. 25-Sep. 1	Flood, hail, wind	South	5	2	—	10	17
Sep. 6-12	Flood, hail, wind	South	14	18	1	19	52
Nov. 5-6	Flood, hail, wind	Midwest	6	4	—	—	10
All other 2017 catastrophes			38	27	1	16	82
Development on 2016 and prior catastrophes			(23)	(4)	—	(1)	(28)
Calendar year incurred total			$ 159	$ 135	$ 2	$ 44	$ 340

Consolidated Property Casualty Insurance Loss and Loss Expenses

Loss and loss expenses include both net paid losses and reserve changes for unpaid losses as well as the associated loss expenses. For all property casualty lines of business in aggregate, net loss and loss expense reserves at December 31, 2018, were $376 million higher than at year-end 2017, including $233 million for incurred but not reported (IBNR) reserves. The $376 million reserve increase raised year-end 2017 net loss and loss expense reserves by 7 percent, compared with a 4 percent increase in 2018 earned premiums.

Most of the incurred losses and loss expenses shown in the consolidated property casualty insurance results three-year highlights table are for the respective current accident years, with reserve development on prior accident years shown separately. Since less than half of our consolidated property casualty current accident year incurred losses and loss expenses represents net paid amounts, the majority represents reserves for our estimate of ultimate losses and loss expenses. These reserves develop over time, and we re-estimate previously reported reserves as we learn more about the development of the related claims. The table below illustrates that development. For example, the 68.9 percent accident year 2017 loss and loss expense ratio reported as of December 31, 2017, developed favorably by 1.3 percentage points to 67.6 percent due to claims settling for less than previously estimated, or due to updated reserve estimates for unpaid claims, as of December 31, 2018. Accident years 2017 and 2016 have both developed favorably, as indicated by the progression over time for the ratios in the table.

(Dollars in millions)

Accident year loss and loss expenses incurred and ratios to earned premiums:						
Accident year:	2018	2017	2016	2018	2017	2016
as of December 31, 2018	$3,390	$3,194	$2,941	68.9%	67.6%	65.6%
as of December 31, 2017		3,257	2,979		68.9	66.5
as of December 31, 2016			3,029			67.5

Catastrophe loss trends, discussed above, accounted for some of the movement in the current accident year loss and loss expense ratio for 2018, compared with 2017. Catastrophe losses added 7.4 percentage points in 2018, 7.8 points in 2017 and 7.7 points in 2016 to the respective consolidated property casualty current accident year loss and loss expense ratios in the table above.

The 61.5 percent ratio for current accident year loss and loss expenses before catastrophe losses for 2018 increased 0.4 percentage points compared with the 61.1 percent accident year 2017 ratio measured as of December 31, 2017. Contributors to the increase included 0.3 points from our commercial casualty line of business, which experienced a 2018 increase of $41 million, compared with 2017, despite its earned premiums rising by only $3 million in 2018.

Reserve development on prior accident years continued to net to a favorable amount in 2018, and was primarily due to less-than-anticipated loss emergence on known claims. We recognized $167 million of favorable development in 2018, compared with $119 million in 2017 and $168 million in 2016. Of the $48 million increase in 2018, compared with 2017, $58 million was attributable to our commercial casualty line of business. Approximately 91 percent of our net favorable reserve development on prior accident years recognized during 2018 occurred in our commercial casualty, commercial property and workers' compensation lines of business. In 2017, our commercial property and workers' compensation lines of business were responsible for approximately 73 percent of the favorable reserve development. As discussed in Liquidity and Capital Resources, Property Casualty Loss and Loss Expense Obligations and Reserves, Property Casualty Insurance Development of Estimated Reserves by Accident Year, commercial casualty and workers' compensation are considered long-tail lines with the potential for revisions inherent in estimating reserves. Favorable development recognized during 2016 was primarily from our commercial casualty, commercial property and workers' compensation lines of business. Development by accident year is further discussed in Liquidity and Capital Resources, Property Casualty Insurance Development of Estimated Reserves by

Accident Year.

Consolidated Property Casualty Insurance Losses by Size

(Dollars in millions, net of reinsurance)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Current accident year losses greater than $5,000,000	$43	$45	$26	(4)	73
Current accident year losses $1,000,000-$5,000,000	218	212	185	3	15
Large loss prior accident year reserve development	69	51	(6)	35	nm
Total large losses incurred	330	308	205	7	50
Losses incurred but not reported	110	54	164	104	(67)
Other losses excluding catastrophe losses	1,886	1,903	1,699	(1)	12
Catastrophe losses	334	327	327	2	0
Total losses incurred	$2,660	$2,592	$2,395	3	8
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year losses greater than $5,000,000	0.9 %	1.0 %	0.6 %	(0.1)	0.4
Current accident year losses $1,000,000-$5,000,000	4.4	4.5	4.1	(0.1)	0.4
Large loss prior accident year reserve development	1.4	1.0	(0.1)	0.4	1.1
Total large loss ratio	6.7	6.5	4.6	0.2	1.9
Losses incurred but not reported	2.2	1.1	3.7	1.1	(2.6)
Other losses excluding catastrophe losses	38.4	40.3	37.8	(1.9)	2.5
Catastrophe losses	6.8	7.0	7.3	(0.2)	(0.3)
Total loss ratio	54.1 %	54.9 %	53.4 %	(0.8)	1.5

In 2018, total large losses incurred increased by $22 million, or 7 percent, net of reinsurance, primarily due to an increase for our commercial lines insurance segment. The corresponding ratio increased 0.2 percentage points. Our analysis of large losses incurred indicated no unexpected concentration of these losses and reserve increases by geographic region, policy inception, agency or field marketing territory. We believe the inherent volatility of aggregate loss experience for our portfolio of larger policies is greater than that of our portfolio of smaller policies, and we continue to monitor the volatility in addition to general inflationary trends in loss costs.

Consolidated Property Casualty Insurance Underwriting Expenses					
(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Commission expenses	$911	$866	$819	5	6
Other underwriting expenses	599	587	555	2	6
Policyholder dividends	12	14	15	(14)	(7)
Total underwriting expenses	$1,522	$1,467	$1,389	4	6
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Commission expenses	18.5 %	18.3 %	18.3 %	0.2	0.0
Other underwriting expenses	12.1	12.5	12.4	(0.4)	0.1
Policyholder dividends	0.3	0.3	0.3	0.0	0.0
Total underwriting expense ratio	30.9 %	31.1 %	31.0 %	(0.2)	0.1

Consolidated property casualty commission expenses rose $45 million, or 5 percent, in 2018, with profit-sharing commissions for agencies increasing by $4 million. The 2018 ratio of commission expenses as a percent of earned premiums increased by 0.2 percentage points, compared with 2017. The 2018 ratio for other underwriting expenses decreased by 0.4 percentage-points compared with 2017, as earned premiums rose at a faster pace than other underwriting expenses. During 2018, we continued to carefully manage expenses while also making strategic investments that include enhancement of underwriting expertise.

Commission expenses include our profit-sharing commissions, which are primarily based on one-year and three-year profitability of an agency’s business. The aggregate profit trend for agencies that earn these profit-based commissions can differ from the aggregate profit trend for all agencies reflected in our consolidated property casualty results.

Salaries, benefits and payroll taxes for our associates account for approximately half of our property casualty other underwriting expenses. Most of our associates either provide direct service to the property casualty portion of our agencies’ businesses or provide support to those associates.

Discussions below of our property casualty insurance segments provide additional details about our results.

Commercial Lines Insurance Results

Overview – Three-Year Highlights

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$3,218	$3,165	$3,089	2	2
Fee revenues	5	5	5	0	0
Total revenues	3,223	3,170	3,094	2	2
Loss and loss expenses from:					
Current accident year before catastrophe losses	1,998	1,933	1,831	3	6
Current accident year catastrophe losses	208	182	226	14	(19)
Prior accident years before catastrophe losses	(136)	(50)	(124)	(172)	60
Prior accident years catastrophe losses	(21)	(23)	(5)	9	(360)
Loss and loss expenses	2,049	2,042	1,928	0	6
Underwriting expenses	1,023	1,009	982	1	3
Underwriting profit	$151	$119	$184	27	(35)
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year before catastrophe losses	62.1 %	61.1 %	59.3 %	1.0	1.8
Current accident year catastrophe losses	6.5	5.7	7.3	0.8	(1.6)
Prior accident years before catastrophe losses	(4.2)	(1.6)	(4.0)	(2.6)	2.4
Prior accident years catastrophe losses	(0.7)	(0.7)	(0.2)	0.0	(0.5)
Loss and loss expenses	63.7	64.5	62.4	(0.8)	2.1
Underwriting expenses	31.7	31.9	31.8	(0.2)	0.1
Combined ratio	95.4 %	96.4 %	94.2 %	(1.0)	2.2
Combined ratio:	95.4 %	96.4 %	94.2 %	(1.0)	2.2
Contribution from catastrophe losses and prior years reserve development	1.6	3.4	3.1	(1.8)	0.3
Combined ratio before catastrophe losses and prior years reserve development	93.8 %	93.0 %	91.1 %	0.8	1.9

Performance highlights for the commercial lines insurance segment include:

- Premiums – Earned premiums and net written premiums rose in 2018, primarily due to a $45 million increase in renewal written premiums that continued to include higher average pricing. New business written premiums in 2018 increased $20 million, or 5 percent, compared with 2017. The increase was driven by production from agencies appointed since the beginning of 2017.
- Combined ratio – The 2018 combined ratio improved by 1.0 percentage point compared with 2017, despite a 0.8 percentage-point increase in the ratio component for natural catastrophe losses. The 2018 ratio for current accident year losses and loss expenses before catastrophes increased by 1.0 percentage point, including 0.3 points from more current accident year losses of $1 million or more per claim, shown in the table below. Development on prior accident years' loss and loss expense reserves before catastrophes during 2018 was 2.6 percentage points more favorable than in 2017.

As discussed in Critical Accounting Estimates, Property Casualty Insurance Loss and Loss Expense Reserves, stable historical paid loss patterns are a key assumption used to make projections necessary for estimating IBNR reserves. During 2017, we observed paid losses or re-estimates of case reserves emerging at levels higher than expected for commercial casualty. Considering that new data at December 31, 2017, we estimated commercial casualty IBNR reserves for accident year 2017 at levels more likely to be adequate. During 2018, commercial casualty reserve development on prior accident years was favorable, as discussed below, but we estimated commercial casualty IBNR reserves for accident year 2018 at a prudent level, contributing an increase of 0.5 percentage points to the 2018 ratio for current accident year losses and loss expenses before catastrophes, compared with its contribution to accident year 2017 as of December 31, 2017.

Commercial auto, representing 21 percent of 2018 earned premiums for our commercial lines insurance segment, was the only major line of business in that segment with a 2018 total loss and loss expense ratio significantly higher than we desired. During 2018, our commercial auto policies experienced average renewal price percentage increases estimated in the high-single-digit range, which we believe will help improve future profitability. We also continued to improve premium rate classification and use of other rating variables in risk selection and pricing.

Pricing precision and other initiatives to improve commercial lines underwriting profitability complement our business practices that continue to leverage the local presence of our field associates. Field marketing representatives meet with local agencies to assess each risk, determine limits of insurance and establish appropriate terms and conditions. They underwrite new business while field loss control, machinery and equipment and claims representatives conduct on-site inspections. Field claims representatives also assist underwriters by preparing full reports on their first-hand observations of risk quality.

Our commercial lines statutory combined ratio was 95.1 percent in 2018, compared with 96.2 percent in 2017 and 93.9 percent in 2016. The contribution of catastrophe losses to our commercial lines statutory combined ratio was 5.8 percentage points in 2018, 5.0 percentage points in 2017 and 7.1 percentage points in 2016.

Commercial Lines Insurance Premiums

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Agency renewal written premiums	$2,925	$2,880	$2,832	2	2
Agency new business written premiums	417	397	372	5	7
Other written premiums	(97)	(75)	(82)	(29)	9
Net written premiums	3,245	3,202	3,122	1	3
Unearned premium change	(27)	(37)	(33)	27	(12)
Earned premiums	$3,218	$3,165	$3,089	2	2

We continue to refine our use of predictive analytics tools to improve pricing precision as we further segment commercial lines policies, emphasizing identification and retention of policies we believe have relatively stronger price adequacy. These tools better align individual insurance policy pricing to risk attributes, providing our underwriters with enhanced abilities to target profitability and to discuss pricing impacts with agency personnel.

We also continue to leverage our local relationships with agents through the efforts of our teams that work closely with them. We believe our field focus is unique and has several advantages, including providing us with quality intelligence on local market conditions. We seek to maintain appropriate pricing discipline for both new and renewal business as management continues to emphasize the importance of our agencies and underwriters assessing account quality to make careful decisions on a case-by-case basis whether to write or renew a policy. Premium rate credits may be used to retain renewals of quality business and to earn new business, but we do so selectively in order to avoid commercial accounts that we believe have insufficient profit margins.

Our 2 percent increase in 2018 agency renewal written premiums included higher average pricing. We measure average changes in commercial lines renewal pricing as the rate of change in renewal premium for the new policy period compared with the premium for the expiring policy period, assuming no change in the level of insured exposures or policy coverage between those periods for respective policies. In 2018, our standard commercial lines policies averaged an estimated pricing change at a percentage in the low-single-digit range, slightly higher than in 2017. Our average commercial lines pricing change includes the flat pricing effect of certain coverages within package policies written for a three-year term that were in force but did not expire during the period being measured. Therefore, the average commercial lines pricing change we report reflects a blend of policies that did not expire and other policies that did expire during the measurement period.

For only those commercial lines policies that did expire and were then renewed during 2018, we estimate that the average price increase was near the low end of the mid-single-digit range, slightly higher than full-year 2017. During 2018, we continued to further segment our commercial lines policies, emphasizing identification and retention of policies we believed had relatively stronger price adequacy. Conversely, we continued to seek more aggressive renewal terms and conditions on policies we believed had relatively weaker pricing, in turn retaining fewer of those policies.

Changes in the economy can affect insured exposures that directly relate to premium amounts charged for some policies. For commercial accounts, we usually calculate initial estimates for general liability premiums based on estimated sales or payroll volume, while we calculate workers' compensation premiums based on estimated payroll volume. A change in sales or payroll volume generally indicates a change in demand for a business's goods or services, as well as a change in its exposure to risk. Policyholders who experience sales or payroll volume changes due to economic factors may also have other exposures requiring insurance, such as commercial auto or commercial property. Premium levels for these other types of coverages generally are not linked directly to sales or payroll volumes.

Premiums resulting from audits of actual sales or payrolls that confirmed or adjusted initial premium estimates have had a mixed effect on premium trends in recent years. On an earned premium basis for our commercial lines insurance segment, audits contributed $1 million to the $53 million earned premiums increase in 2018, negative $7 million to the $77 million earned premiums increase in 2017 and negative $5 million to the $93 million earned premiums increase in 2016. On a net written premium basis, audits contributed a negative amount of less than $1 million to the $43 million net written premiums increase in 2018, negative $5 million to the $81 million net written premiums increase in 2017 and negative $1 million to the $97 million net written premiums increase in 2016. These net written premium amounts are included with agency renewal written premiums in the Commercial Lines Insurance Premiums table above.

In 2018, our commercial lines new business premiums written by our agencies increased $20 million, or 5 percent, compared with 2017. New business premium volume in recent years has been significantly influenced by new agency appointments. Agencies appointed since the beginning of 2017 produced commercial lines new business written premiums of $40 million, in aggregate, during 2018, up $25 million from what they produced during 2017. All other agencies contributed the remaining $377 million, down $5 million from the $382 million they produced in 2017.

For new business, our field associates are frequently in our agents' offices to: help judge the quality of each account; emphasize the Cincinnati value proposition; call on sales prospects with those agents; carefully evaluate risk exposure; and provide their best quotes. Some of our new business comes from accounts that are not new to the agent. We believe these seasoned accounts tend to be priced more accurately than business that is new to us and the agency. As we appoint new agencies who choose to move accounts to us, we report these accounts as new business to us.

Other written premiums primarily consist of premiums that are ceded to reinsurers and lower our net written premiums. An increase in ceded premiums reduced net written premium growth by $6 million for 2018, compared with 2017.

Commercial Lines Insurance Loss and Loss Expenses
Loss and loss expenses include both net paid losses and reserve changes for unpaid losses as well as the associated loss expenses. Most of the incurred losses and loss expenses shown in the commercial lines insurance segment three-year highlights table are for the respective current accident years, with reserve development on prior accident years shown separately. Since less than half of our commercial lines insurance segment current accident year incurred losses and loss expenses represents net paid amounts, the majority represents reserves for our estimate of ultimate losses and loss expenses. These reserves develop over time, and we re-estimate previously reported reserves as we learn more about the development of the related claims. The table below illustrates that development. For example, the 66.8 percent accident year 2017 loss and loss expense ratio reported as of December 31, 2017, developed favorably by 2.2 percentage points to 64.6 percent due to claims settling for less than previously estimated, or due to updates to reserve estimates for unpaid claims, as of December 31, 2018. Accident years 2017 and 2016 for the commercial lines insurance segment have both developed favorably, as indicated by the progression over time of the ratios in the table.
(Dollars in millions)

Accident year loss and loss expenses incurred and ratios to earned premiums:						
Accident year:	2018	2017	2016	2018	2017	2016
as of December 31, 2018	$2,206	$2,047	$1,988	68.6%	64.6%	64.4%
as of December 31, 2017		2,115	2,023		66.8	65.5
as of December 31, 2016			2,057			66.6

Catastrophe losses, as discussed in Consolidated Property Casualty Insurance Results, explain some of the movement in the current accident year loss and loss expense ratio for accident year 2018, compared with 2017. Catastrophe losses added 6.5 percentage points in 2018, 5.7 points in 2017 and 7.3 points in 2016 to the respective commercial lines current accident year loss and loss expense ratios in the table above.

The 62.1 percent ratio for current accident year loss and loss expenses before catastrophe losses for 2018 increased 1.0 percentage point compared with the 61.1 percent accident year 2017 ratio measured as of December 31, 2017. Contributors to the increase included 0.9 points from our commercial casualty line of business, which experienced a 2018 increase of $41 million, compared with 2017, despite its earned premiums rising by only $3 million in 2018. Large losses, described below, and the corresponding ratios for new losses above $1 million, contributed a 0.3 percentage-point increase to the 2018 ratio. Those unfavorable contributions offset the favorable effects from various initiatives, such as those to improve pricing precision and loss experience related to claims and loss control practices.

Commercial lines reserve development on prior accident years of $157 million in 2018 continued to net to a favorable amount and provided a larger benefit than the $73 million recognized in 2017. The $84 million net increase in 2018 included $58 million from our commercial casualty line of business. Most of our commercial lines net favorable reserve development on prior accident years recognized during 2018 occurred in our commercial casualty, commercial property and workers' compensation lines of business. Favorable development recognized during 2017 was mostly from our commercial property and workers' compensation lines of business. Favorable development recognized during 2016 was mostly from our commercial casualty, commercial property and workers' compensation lines of business. Development by accident year and other trends for commercial lines loss and loss expenses and the related ratios are further discussed in Liquidity and Capital Resources, Property Casualty Insurance Development of Estimated Reserves by Accident Year.

Commercial Lines Insurance Losses by Size

(Dollars in millions, net of reinsurance)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Current accident year losses greater than $5,000,000	$37	$39	$26	(5)	50
Current accident year losses $1,000,000-$5,000,000	182	166	162	10	2
Large loss prior accident year reserve development	65	47	2	38	nm
Total large losses incurred	284	252	190	13	33
Losses incurred but not reported	64	61	125	5	(51)
Other losses excluding catastrophe losses	1,122	1,184	1,055	(5)	12
Catastrophe losses	180	150	214	20	(30)
Total losses incurred	$1,650	$1,647	$1,584	0	4
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year losses greater than $5,000,000	1.2 %	1.2 %	0.8 %	0.0	0.4
Current accident year losses $1,000,000-$5,000,000	5.6	5.3	5.3	0.3	0.0
Large loss prior accident year reserve development	2.0	1.5	0.1	0.5	1.4
Total large loss ratio	8.8	8.0	6.2	0.8	1.8
Losses incurred but not reported	2.0	1.9	4.0	0.1	(2.1)
Other losses excluding catastrophe losses	34.9	37.4	34.2	(2.5)	3.2
Catastrophe losses	5.6	4.7	6.9	0.9	(2.2)
Total loss ratio	51.3 %	52.0 %	51.3 %	(0.7)	0.7

In 2018, total large losses incurred increased by $32 million, or 13 percent, net of reinsurance. The corresponding ratio increased 0.8 percentage points. The 2018 increases on both a dollar and ratio basis were primarily due to higher amounts for our commercial casualty and commercial property lines of business. In 2017, total large losses incurred and the corresponding ratio were higher than in 2016, also largely due to higher amounts of large losses for our commercial casualty and commercial property lines of business. Our analysis indicated no unexpected concentration of these losses and reserve increases by geographic region, policy inception, agency or field marketing territory. We believe the inherent volatility of aggregate loss experience for our portfolio of larger policies is greater than that of our portfolio of smaller policies, and we continue to monitor the volatility in addition to general inflationary trends in loss costs.

Commercial Lines Insurance Underwriting Expenses

(Dollars in millions)	Years ended December 31, 2018	2017	2016	2018-2017 Change %	2017-2016 Change %
Commission expenses	$592	$577	$565	3	2
Other underwriting expenses	419	418	402	0	4
Policyholder dividends	12	14	15	(14)	(7)
Total underwriting expenses	$1,023	$1,009	$982	1	3
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Commission expenses	18.4 %	18.2 %	18.3 %	0.2	(0.1)
Other underwriting expenses	12.9	13.3	13.0	(0.4)	0.3
Policyholder dividends	0.4	0.4	0.5	0.0	(0.1)
Total underwriting expense ratio	31.7 %	31.9 %	31.8 %	(0.2)	0.1

Commercial lines commission expenses as a percent of earned premiums increased in 2018, compared with 2017, reflecting an increase in the ratio for agency commissions other than profit-sharing. The ratio for 2017 decreased slightly compared with 2016, reflecting a decrease in the ratio for agency commissions other than profit-sharing.
In 2018, other underwriting expenses as a percent of earned premiums decreased compared with 2017, as earned premiums rose at a faster pace than other underwriting expenses. In 2017, the ratio rose, compared with 2016 as strategic investments that include enhancement of underwriting expertise offset the favorable effects of higher earned premiums and ongoing expense management efforts.

Commercial Lines Insurance Outlook

Renewal and new business pricing for commercial risks continues to experience significant competitive pressure, reinforcing the need for enhanced pricing analytics and careful risk selection. Commentary regarding the commercial lines market within the property casualty insurance industry indicates commercial lines pricing in 2019 may be generally similar to 2018. Despite challenging market conditions from strong competition, we believe we can manage our business and execute strategic initiatives to offset market pressures to some extent and profitably grow our commercial lines insurance segment.

We intend to keep marketing our products to a broad range of business classes with a package approach, while also continuing to improve our pricing precision and further segmenting among commercial lines policies. We intend to maintain our underwriting selectivity and carefully manage our rate levels as well as our programs that seek to accurately match exposures with appropriate premiums. We will continue to evaluate each risk individually and to make decisions about rates, the use of three-year commercial policies and other policy conditions on a case-by-case basis, even in lines and classes of business that are under competitive pressure. For our commercial auto line of business, we will continue to improve premium rate classification and the use of other rating variables in risk selection and pricing. We believe that our initiatives to improve pricing precision and lower loss costs will continue to benefit commercial lines profitability during 2019, and that recent-year premium growth initiatives will continue to grow commercial lines premiums at a healthy pace.

Personal Lines Insurance Results

Overview – Three-Year Highlights

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$1,336	$1,241	$1,161	8	7
Fee revenues	5	5	4	0	25
Total revenues	1,341	1,246	1,165	8	7
Loss and loss expenses from:					
Current accident year before catastrophe losses	838	793	731	6	8
Current accident year catastrophe losses	121	139	113	(13)	23
Prior accident years before catastrophe losses	9	(10)	—	nm	nm
Prior accident years catastrophe losses	4	(4)	(4)	nm	0
Loss and loss expenses	972	918	840	6	9
Underwriting expenses	389	360	337	8	7
Underwriting loss	$(20)	$(32)	$(12)	38	(167)
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year before catastrophe losses	62.8 %	64.0 %	63.0 %	(1.2)	1.0
Current accident year catastrophe losses	9.1	11.2	9.7	(2.1)	1.5
Prior accident years before catastrophe losses	0.6	(0.9)	0.0	1.5	(0.9)
Prior accident years catastrophe losses	0.3	(0.3)	(0.3)	0.6	0.0
Loss and loss expenses	72.8	74.0	72.4	(1.2)	1.6
Underwriting expenses	29.1	29.0	29.0	0.1	0.0
Combined ratio	101.9 %	103.0 %	101.4 %	(1.1)	1.6
Combined ratio:	101.9 %	103.0 %	101.4 %	(1.1)	1.6
Contribution from catastrophe losses and prior years reserve development	10.0	10.0	9.4	0.0	0.6
Combined ratio before catastrophe losses and prior years reserve development	91.9 %	93.0 %	92.0 %	(1.1)	1.0

Performance highlights for the personal lines insurance segment include:

- Premiums – Earned premiums and net written premiums continued to grow in 2018, primarily due to increases in renewal written premiums that reflected higher average pricing. Renewal written premiums rose $85 million, or 7 percent, in 2018, compared with 2017.
- Combined ratio – The 2018 combined ratio improved 1.1 percentage points, compared with 2017, largely due to a 1.5 percentage-point decrease in the ratio for 2018 natural catastrophe losses. The total large loss ratio for losses of $1 million or more per claim, shown in the table below, decreased by 1.0 percentage point, reflecting lower losses for personal umbrella claims related to auto accidents.

Personal auto, representing 46 percent of 2018 earned premiums for our personal lines insurance segment, was the only major line of business in that segment with a 2018 total loss and loss expense ratio significantly higher than we desired. During 2018, our personal auto policies experienced estimated premium rate increases averaging in the high-single-digit range. We believe the rate increases and other actions to improve pricing precision and reduce loss costs will improve future profitability.

For our homeowner line of business, the 2018 total loss and loss expense ratio was unsatisfactory but improved significantly in the second half of the year with a ratio below 67 percent, indicating an underwriting profit once underwriting expenses are considered.

We have increased our pricing precision and implemented numerous rate increases in recent years to improve our personal lines insurance segment results. In addition, we have made greater use of higher minimum loss deductibles and enhanced our property inspection processes to verify condition and insurance to value. We have

worked to improve our geographic diversification by expanding our personal lines operation to several states less prone to catastrophes.
Our personal lines statutory combined ratio was 101.2 percent in 2018, compared with 102.4 percent in 2017 and 100.8 percent in 2016. The contribution of catastrophe losses to our personal lines statutory combined ratio was 9.4 percentage points in 2018, 10.9 percentage points in 2017 and 9.4 percentage points in 2016.

Personal Lines Insurance Premiums

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Agency renewal written premiums	$1,241	$1,156	$1,099	7	5
Agency new business written premiums	165	161	122	2	32
Other written premiums	(28)	(23)	(23)	(22)	0
Net written premiums	1,378	1,294	1,198	6	8
Unearned premium change	(42)	(53)	(37)	21	(43)
Earned premiums	$1,336	$1,241	$1,161	8	7

Personal lines insurance is a strategic component of our overall relationship with most of our agencies and is an important component of our agencies' relationships with their clients. We believe agents recommend our personal insurance products to their clients who seek to balance quality and price and who are attracted by our superior claims service and the benefits of our package approach. We also believe our continuing efforts to improve pricing precision are helping us attract and retain more of our agencies' preferred business, while also obtaining higher rates for more thinly priced business. Our progress toward broader geographic diversification is reflected in part through premium growth trends. Personal lines earned premiums in our five highest volume states increased in aggregate by 1 percent in 2018, while premiums for the remaining states, including our newer areas of operation, increased 14 percent in aggregate.

The 7 percent increase in agency renewal written premiums in 2018 largely reflected various rate changes.
We estimate that premium rates for our personal auto line of business increased at average percentages in the high-single-digit range during 2018, with some individual policies experiencing lower or higher rate changes based on enhanced pricing precision enabled by predictive models that consider characteristics of specific risks. For our homeowner line of business, we estimate that rate increases during 2018 averaged in the mid-single-digit range. Similar to our personal auto line of business, that average varied widely by state, and some individual policies experienced lower or higher rate changes based on pricing precision and current rate level indications that helped determine appropriate premium rates.

Personal lines new business written premiums grew $4 million, or 2 percent, during 2018, compared with 2017. That growth was driven by policies from high net worth clients of our agencies. Personal lines new business written premiums from our high net worth policies totaled approximately $71 million for 2018, compared with approximately $58 million for 2017, an increase of $13 million. New business written premiums for the part of our personal lines segment we sometimes refer to as middle market business decreased $9 million in 2018, reflecting underwriting discipline. Some of what we report as new business came from accounts that were not new to our agents. We believe our agents' seasoned accounts tend to be priced more accurately than business that may be less familiar to them.

Other written premiums primarily consist of premiums that are ceded to reinsurers and lower our net written premiums. An increase in ceded premiums reduced net written premium growth by $2 million for 2018, compared with 2017.

Personal Lines Insurance Loss and Loss Expenses

Loss and loss expenses include both net paid losses and reserve changes for unpaid losses as well as the associated loss expenses. Most of the incurred losses and loss expenses shown in the personal lines insurance segment three-year highlights table are for the respective current accident years, with reserve development on prior accident years shown separately. Since approximately two-thirds of our personal lines current accident year incurred losses and loss expenses represent net paid amounts, the remaining one-third represents reserves for our estimate of ultimate losses and loss expenses. These reserves develop over time, and we re-estimate previously reported reserves as we learn more about the development of the related claims. The table below illustrates that development. For example, the 75.2 percent accident year 2017 loss and loss expense ratio reported as of December 31, 2017, developed unfavorably by 0.8 percentage points to 76.0 percent due to claims settling for more than previously estimated, or due to updated reserve estimates for unpaid claims, as of December 31, 2018. Accident year 2016 for the personal lines insurance segment developed favorably during 2017 and then developed unfavorably by a relatively small amount during 2018, as indicated by the progression over time for the ratios in the table.

(Dollars in millions)

Accident year loss and loss expenses incurred and ratios to earned premiums:

Accident year:	2018	2017	2016	2018	2017	2016
as of December 31, 2018	$959	$943	$837	71.9%	76.0%	72.2%
as of December 31, 2017		932	835		75.2	72.0
as of December 31, 2016			844			72.7

Catastrophe losses, as discussed in Consolidated Property Casualty Insurance Results, explain much of the movement in the current accident year loss and loss expense ratio for accident year 2018, compared with accident year 2017. Catastrophe losses added 9.1 percentage points in 2018, 11.2 points in 2017 and 9.7 points in 2016 to the respective personal lines current accident year loss and loss expense ratios in the table above. Personal lines catastrophe losses for 2018 resulted in a ratio below our 11.4 percent 10-year annual average for personal lines that included 22.8 percent for 2011. Our personal lines catastrophe loss ratios for 2018 and 2016 reflect an average closer to our 10.4 percent average over the same 10-year period, excluding the unusually high ratio for 2011. Personal lines catastrophe losses are inherently volatile, as discussed above and in Consolidated Property Casualty Insurance Results.

The 62.8 percent ratio for current accident year loss and loss expenses before catastrophe losses for 2018 improved 1.2 percentage points compared with the 64.0 percent accident year 2017 ratio measured as of December 31, 2017. The improvement included a 1.1 percentage-point decrease in the ratio for current accident year losses of $1 million or more per claim, shown in the table below, that were primarily for personal umbrella claims related to auto accidents.

Personal lines loss and loss expense reserve development on prior accident years recognized in 2018 was unfavorable by $13 million, in aggregate, compared with $14 million of favorable reserve development in 2017. The 2018 net unfavorable reserve development included $24 million for our homeowner line of business, primarily for accident year 2017, and was partially offset by $14 million of favorable reserve development for personal auto. In 2017, our homeowner line of business prior accident year net reserve development was favorable by $11 million and offset a small amount of unfavorable reserve development for personal auto. Development by accident year and other trends for personal lines loss and loss expenses and the related ratios are further discussed in Liquidity and Capital Resources, Property Casualty Insurance Development of Estimated Reserves by Accident Year.

Personal Lines Insurance Losses by Size

(Dollars in millions, net of reinsurance)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Current accident year losses greater than $5,000,000	$6	$6	$—	0	nm
Current accident year losses $1,000,000-$5,000,000	32	43	19	(26)	126
Large loss prior accident year reserve development	4	3	(7)	33	nm
Total large losses incurred	42	52	12	(19)	333
Losses incurred but not reported	38	(9)	35	nm	nm
Other losses excluding catastrophe losses	650	629	592	3	6
Catastrophe losses	122	132	107	(8)	23
Total losses incurred	$852	$804	$746	6	8
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year losses greater than $5,000,000	0.4 %	0.5 %	0.0 %	(0.1)	0.5
Current accident year losses $1,000,000-$5,000,000	2.4	3.4	1.7	(1.0)	1.7
Large loss prior accident year reserve development	0.4	0.3	(0.6)	0.1	0.9
Total large loss ratio	3.2	4.2	1.1	(1.0)	3.1
Losses incurred but not reported	2.8	(0.7)	3.0	3.5	(3.7)
Other losses excluding catastrophe losses	48.7	50.7	51.0	(2.0)	(0.3)
Catastrophe losses	9.1	10.6	9.2	(1.5)	1.4
Total loss ratio	63.8 %	64.8 %	64.3 %	(1.0)	0.5

In 2018, personal lines total large losses incurred decreased by $10 million, or 19 percent, net of reinsurance. The ratio for 2018 large losses as a percent of earned premiums decreased 1.0 percentage point. The 2018 decreases on both a dollar and ratio basis were largely due to lower amounts for personal umbrella claims related to auto accidents. In 2017, total large losses increased, compared with 2016, primarily due to higher amounts of homeowner claims and personal umbrella claims related to auto accidents. Our analysis indicated no unexpected concentration of these losses and reserve increases by risk category, geographic region, policy inception, agency or field marketing territory.

We believe the inherent volatility of aggregate loss experience for our portfolio of larger policies is greater than that of our portfolio of smaller policies, and we continue to monitor the volatility in addition to general inflationary trends in loss costs.

Personal Lines Insurance Underwriting Expenses

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Commission expenses	$243	$223	$209	9	7
Other underwriting expenses	146	137	128	7	7
Total underwriting expenses	$389	$360	$337	8	7
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Commission expenses	18.2 %	18.0 %	18.0 %	0.2	0.0
Other underwriting expenses	10.9	11.0	11.0	(0.1)	0.0
Total underwriting expense ratio	29.1 %	29.0 %	29.0 %	0.1	0.0

Personal lines commission expense as a percent of earned premiums increased slightly in 2018, compared with 2017. In 2018, other underwriting expenses as a percent of earned premiums decreased compared with 2017, as strategic investments that include enhancement of underwriting expertise were offset by the favorable effects of higher earned premiums and ongoing expense management efforts. Underwriting expenses as a percent of earned premiums in 2017 matched 2016.

Personal Lines Insurance Outlook

We believe our personal lines premium growth rate will likely be higher than the industry projection for 2019, driven by our rate increases, new state entry, accelerated pace of new agency appointments in recent years and increased focus on the high net worth personal lines market.

Our high net worth initiative, along with various other actions to improve performance in our personal lines insurance segment, is discussed in greater detail in Personal Lines Insurance Results and also in Item 1, Our Business and Our Strategy, Strategic Initiatives and Our Segments, Personal Lines Insurance Segment. Our personal lines pricing trends need to exceed loss trends to improve personal lines insurance segment profitability, thereby helping to achieve our corporate performance objectives.

Excess and Surplus Lines Insurance Results

Overview – Three-Year Highlights

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$234	$209	$183	12	14
Fee revenues	1	1	1	0	0
Total revenues	235	210	184	12	14
Loss and loss expenses from:					
Current accident year before catastrophe losses	126	113	99	12	14
Current accident year catastrophe losses	2	2	3	0	(33)
Prior accident years before catastrophe losses	(24)	(29)	(34)	17	15
Prior accident years catastrophe losses	—	—	—	0	0
Loss and loss expenses	104	86	68	21	26
Underwriting expenses	68	63	54	8	17
Underwriting profit	$63	$61	$62	3	(2)
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year before catastrophe losses	53.9 %	54.0 %	54.4 %	(0.1)	(0.4)
Current accident year catastrophe losses	1.1	1.1	1.6	0.0	(0.5)
Prior accident years before catastrophe losses	(10.6)	(13.6)	(18.3)	3.0	4.7
Prior accident years catastrophe losses	0.0	(0.1)	(0.1)	0.1	0.0
Loss and loss expenses	44.4	41.4	37.6	3.0	3.8
Underwriting expenses	29.1	29.7	29.4	(0.6)	0.3
Combined ratio	73.5 %	71.1 %	67.0 %	2.4	4.1
Combined ratio:	73.5 %	71.1 %	67.0 %	2.4	4.1
Contribution from catastrophe losses and prior years reserve development	(9.5)	(12.6)	(16.8)	3.1	4.2
Combined ratio before catastrophe losses and prior years reserve development	83.0 %	83.7 %	83.8 %	(0.7)	(0.1)

Our excess and surplus lines insurance segment includes results of The Cincinnati Specialty Underwriters Insurance Company and CSU Producer Resources Inc. Performance highlights for this segment include:

- Premiums – Earned premiums and net written premiums continued to grow during 2018, driven by higher renewal written premiums that included average renewal estimated price increases in the low-single-digit range. New business written premiums grew 3 percent in 2018, reflecting a highly competitive market.
- Combined ratio – The combined ratio rose 2.4 percentage points in 2018, primarily due to less favorable reserve development on prior accident years.

Excess and Surplus Lines Insurance Premiums

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Agency renewal written premiums	$192	$162	$141	19	15
Agency new business written premiums	70	68	57	3	19
Other written premiums	(13)	(11)	(9)	(18)	(22)

Net written premiums	249	219	189	14	16
Unearned premium change	(15)	(10)	(6)	(50)	(67)
Earned premiums	$234	$209	$183	12	14

The $30 million increase in 2018 renewal premiums reflected the opportunity to renew many policies for the first time as well as higher renewal pricing. Average renewal estimated price increases were in the low-single-digit range during 2018. We measure average changes in excess and surplus lines renewal pricing as the rate of change in renewal premium for the new policy period compared with the premium for the expiring policy period, assuming no change in the level of insured exposures or policy coverage between those periods for respective policies.

New business written premiums rose $2 million, as additional marketing efforts offset the effects of a highly competitive market, particularly for larger policies. Other written premiums in 2018 reduced net written premium growth by $2 million more than in 2017. Other written premiums are primarily premiums that are ceded to reinsurers and lower our net written premiums.

Excess and Surplus Lines Loss and Loss Expenses

Loss and loss expenses include both net paid losses and reserve changes for unpaid losses, as well as the associated loss expenses. The majority of the total incurred losses and loss expenses shown above in the three-year highlights table are for the respective current accident years, with reserve development on prior accident years shown separately. Since less than 20 percent of our 2018 excess and surplus lines current accident year incurred losses and loss expenses represents net paid amounts, a large majority represents reserves for our estimate of unpaid losses and loss expenses. These reserves develop over time, and we update our estimates of previously reported reserves as we learn more about the development of the related claims. The table below illustrates that development. For example, the 55.1 percent accident year 2017 loss and loss expense ratio reported as of December 31, 2017, developed favorably by 3.8 percentage points to 51.3 percent due to claims settling for less than previously estimated, or due to updated reserve estimates for unpaid claims, as of December 31, 2018. Accident years 2017 and 2016 for this segment have both developed favorably, as indicated by the progression over time of the ratios in the table.

(Dollars in millions)

Accident year loss and loss expenses
incurred and ratios to earned premiums:

Accident year:	2018	2017	2016	2018	2017	2016
as of December 31, 2018	$128	$107	$ 94	55.0%	51.3%	51.4%
as of December 31, 2017		115	98		55.1	53.2
as of December 31, 2016			102			56.0

Catastrophe losses, as discussed in Consolidated Property Casualty Insurance Results, explain some of the movement in the current accident year loss and loss expense ratio for accident year 2017, compared with 2016. Catastrophe losses added 1.1 percentage points in 2018, 1.1 percentage points in 2017 and 1.6 percentage points in 2016 to the respective excess and surplus lines current accident year loss and loss expense ratios in the table above.

The 53.9 percent ratio for current accident year loss and loss expenses before catastrophe losses for 2018 improved by 0.1 percentage point compared with the 54.0 percent accident year 2017 ratio measured as of December 31, 2017. The improvement was partially offset by a 0.3 percentage-point increase in the ratio for current accident year losses of $1 million or more per claim, shown in the table below.

Excess and surplus lines reserve development on prior accident years continued to net to a favorable amount in 2018 as $24 million was recognized, compared with $29 million in 2017. Approximately three-fourths of the 2018 favorable development was for accident years 2017, 2016 or 2015, in aggregate, and was primarily due to lower-than-anticipated loss emergence on known claims.

We believe the loss and loss expense reserves for our excess and surplus lines business are adequate. The amount of outstanding reserves for our excess and surplus lines operation can be seen in a table in Liquidity and Capital

Resources, Property Casualty Loss and Loss Expense Obligations and Reserves. One indication of how long it takes for most of the outstanding reserves to be settled is to measure outstanding reserves by accident year at different points in time, using Item 8, Note 4 of the Consolidated Financial Statements. For example, for accident years 2013, 2012 and 2011, in aggregate, after subtracting cumulative paid amounts from incurred amounts at December 31, 2013, reserves for estimated unpaid losses, plus the portion of loss expenses known as ALAE, equaled $129 million. For those same accident years, at December 31, 2018, the reserve estimate for the remaining unpaid amount equaled $11 million. The inherent uncertainty in estimating reserves is discussed in

Liquidity and Capital Resources, Property Casualty Insurance Loss and Loss Expense Obligations and Reserves. Development trends by accident year are further discussed in Property Casualty Insurance Development of Estimated Reserves by Accident Year.

Excess and Surplus Lines Insurance Losses by Size

(Dollars in millions, net of reinsurance)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Current accident year losses greater than $5,000,000	$—	$—	$—	nm	nm
Current accident year losses $1,000,000-$5,000,000	4	3	3	33	0
Large loss prior accident year reserve development	—	1	—	nm	nm
Total large losses incurred	4	4	3	0	33
Losses incurred but not reported	8	2	5	300	(60)
Other losses excluding catastrophe losses	50	44	31	14	42
Catastrophe losses	2	2	3	0	(33)
Total losses incurred	$64	$52	$42	23	24
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Current accident year losses greater than $5,000,000	0.0 %	0.0 %	0.0 %	0.0	0.0
Current accident year losses $1,000,000-$5,000,000	1.8	1.5	1.7	0.3	(0.2)
Large loss prior accident year reserve development	(0.1)	0.4	(0.3)	(0.5)	0.7
Total large loss ratio	1.7	1.9	1.4	(0.2)	0.5
Losses incurred but not reported	3.6	0.8	2.9	2.8	(2.1)
Other losses excluding catastrophe losses	21.1	21.6	16.8	(0.5)	4.8
Catastrophe losses	1.0	0.8	1.5	0.2	(0.7)
Total loss ratio	27.4 %	25.1%	22.6 %	2.3	2.5

In 2018, total large losses incurred of $4 million, net of reinsurance, matched 2017. The ratio for 2018 large losses as a percent of earned premiums decreased by 0.2 percentage points. That ratio for 2017 increased by 0.5 points, compared with 2016. Our analysis indicated no unexpected concentration of these losses and reserve increases by risk category, geographic region, policy inception, agency or field marketing territory. We believe the inherent volatility of aggregate loss experience for our portfolio of larger policies is greater than that of our portfolio of smaller policies, and we continue to monitor the volatility in addition to general inflationary trends in loss costs.

Excess and Surplus Lines Insurance Underwriting Expenses

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Commission expenses	$45	$41	$36	10	14
Other underwriting expenses	23	22	18	5	22
Total underwriting expenses	$68	$63	$54	8	17
Ratios as a percent of earned premiums:				Pt. Change	Pt. Change
Commission expenses	19.3%	19.2%	19.4%	0.1	(0.2)
Other underwriting expenses	9.8	10.5	10.0	(0.7)	0.5
Total underwriting expenses ratio	29.1%	29.7%	29.4%	(0.6)	0.3

Excess and surplus lines commission expense as a percent of earned premiums for 2018 increased slightly from 2017. The ratio for other underwriting expenses decreased in 2018, compared with 2017, reflecting higher earned premiums and ongoing expense management efforts. In 2017, the ratio rose, in part due to enhancements to systems used in billing excess and surplus lines insurance policies.

Excess and Surplus Lines Outlook

The excess and surplus lines market is expected to see the magnitude of rate increases remain flat for risks that are casualty-driven. For property risks involving catastrophe exposures, premium rates in the foreseeable future are expected to become more firm. Competition is expected to remain strong, especially on large accounts, due primarily to standard market insurance companies insuring businesses that previously were written by excess and surplus lines insurers. Firming is expected to continue for specific classes of business where loss costs are exceeding rates, such as habitational for property coverages, liquor liability for general liability coverages and hired and non-owned for auto liability coverages.

Industry reports suggest that there are opportunities for profitability and growth through greater use of technology. Technology and data are also being used by excess and surplus lines insurance companies to identify new exposures in emerging businesses that need insurance protection or other value-added services.

Our strategy of providing superior service is expected to continue to grow our excess and surplus lines insurance segment and to achieve profitability despite challenging market conditions. We intend to keep carefully selecting and pricing risks, providing prompt delivery of insurance quotes and policies and giving outstanding claims and loss control service from local field representatives who also handle the standard lines business for their assigned agencies. These local representatives are supported by headquarters underwriters and claims managers who specialize in excess and surplus lines.

Life Insurance Results

Overview – Three-Year Highlights

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Earned premiums	$250	$232	$228	8	2
Fee revenues	4	5	5	(20)	0
Total revenues	254	237	233	7	2
Contract holders' benefits incurred	267	252	246	6	2
Investment interest credited to contract holders	(96)	(93)	(90)	(3)	(3)
Underwriting expenses incurred	75	79	76	(5)	4
Total benefits and expenses	246	238	232	3	3
Life insurance segment (loss) profit	$8	$(1)	$1	nm	nm

Performance highlights for the life insurance segment include:

- Revenues – Earned premiums rose 8 percent for the year 2018, as shown in the table below that includes details by major line of business. Our largest life insurance product line, term life insurance, rose 9 percent. Net in-force policy face amounts rose 8 percent to $66.142 billion at year-end 2018 from $61.177 billion at year-end 2017 and $56.808 billion at year-end 2016.
- Profitability – The life insurance segment frequently reports only a small profit or loss because most of its investment income is included in the investments segment results. We include only investment income credited to contract holders (interest assumed in life insurance policy reserve calculations) in life insurance segment results. The segment reported a $8 million profit in 2018, following a loss of $1 million in 2017 and a profit of $1 million in 2016. It has averaged a profit of less than $1 million over the past five years.

Earned premiums rose $18 million in 2018, primarily due to growth in our term life insurance business, as shown in the table below. Growth in 2017 was also primarily due to term life insurance.

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Term life insurance	$172	$158	$149	9	6
Universal life insurance	37	38	37	(3)	3
Other life insurance and annuity products	41	36	42	14	(14)
Net earned premiums	$250	$232	$228	8	2

We market term, whole and universal life products and fixed annuities. In addition, we offer term and whole life insurance to employees at their worksite. These products provide our property casualty agency force with excellent cross-serving opportunities for both commercial and personal accounts.

Over the past several years, we have worked to maintain a portfolio of simple, yet competitive, products primarily under the LifeHorizons banner. Our product development efforts emphasize death benefit protection and guarantees. Distribution expansion within our property casualty insurance agencies remains a high priority. Our 35 life field marketing representatives work in partnership with our 142 property casualty field marketing representatives. Approximately 59 percent of our term and other life insurance product premiums were generated through our property casualty insurance agency relationships.

Life insurance segment expenses consist principally of:

- Contract holders' benefits incurred, related to traditional life and interest-sensitive products, accounted for 78.1 percent of 2018 total benefits and expenses compared with 76.1 percent in 2017 and 76.4 percent in 2016. Total contract holders' benefits increased as net death claims were higher in 2018, compared with 2017. Net death claims increased in 2018 and were slightly above our mortality projections while remaining within our range of pricing expectations.

- Underwriting expenses incurred, net of deferred acquisition costs, accounted for 21.9 percent of 2018 total benefits and expenses compared with 23.9 percent in 2017 and 23.6 percent in 2016. Expenses in 2018 decreased 5 percent, compared with 8 percent growth in earned premiums. Expenses decreased in 2018 due to the impact of unlocking of actuarial assumptions for our universal life insurance contracts. In 2017, the percentage increase for expenses was 2 percentage points more than growth in earned premiums.

Life insurance segment profitability depends largely on premium levels, the adequacy of product pricing, underwriting skill and operating efficiencies. This segment's results include only investment interest credited to contract holders (interest assumed in life insurance policy reserve calculations). The remaining investment income is reported in the investments segment results. The life investment portfolio is managed to earn target spreads between earned investment rates on general account assets and rates credited to policyholders. We consider the value of assets under management and investment income for the life investment portfolio as key performance indicators for the life insurance segment.

We seek to maintain a competitive advantage with respect to benefits paid and reserve increases by consistently achieving better than average claims experience due to skilled underwriting. Commissions paid by the life insurance operation are on par with industry averages.

We recognize that assets under management, capital appreciation and investment income are integral to evaluation of the success of the life insurance segment because of the long duration of life products. On a basis that includes investment income and investment gains or losses from life insurance-related invested assets, our life insurance subsidiary reported net income of $48 million in 2018, compared with net income of $155 million in 2017 and $48 million in 2016. Net income in 2017 included a nonrecurring item, a $111 million benefit from net deferred income tax liability revaluation due to U.S. tax reform. The life insurance subsidiary portfolio had an after-tax net investment loss of $4 million in 2018, compared with after-tax net investment gains of $4 million in 2017 and $5 million in 2016. Investment gains and losses are discussed under Investments Results. We exclude most of our life insurance company investment income from investments segment results.

Life Insurance Outlook

We believe the life insurance market remains attractive due to our quality agency force. As the market continues to evolve and companies begin to debate the wisdom of pursuing direct-to-consumer models on new digital platforms, we are convinced that our distribution will benefit over the long term. We believe that technology should be leveraged to support the agent and enhance the buying experience, and we have several initiatives underway in that regard.

Principle-based reserves had a noticeable impact on our statutory operating results and we look forward to the positive statutory results accelerating into 2019. Such results will allow us more options with respect to capital management.

We continue to view the new tax environment as very favorable. We look forward to competing in 2019, and beyond, on a more level playing field from a tax perspective, in what is still a very competitive term market.

Interest rates and regulatory action are the biggest sources of risk for our segment of the life insurance industry. The volatility in bond yields in the fourth quarter of 2018 highlight this risk. If rates revert to lower levels and remain there, companies will be motivated to look for higher premium to offset lower investment income. From a regulatory standpoint, there is a risk of overly aggressive suitability rules creeping over into the life insurance domain from the current focus on annuities. Such activity could be a significant headwind to future life insurance sales.

Investments Results

Overview – Three-Year Highlights

Investments Results

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Total investment income, net of expenses	$619	$609	$595	2	2
Investment interest credited to contract holders'	(96)	(93)	(90)	(3)	(3)
Investment gains and losses, net	(402)	148	124	nm	19
Investments profit, pretax	$121	$664	$629	(82)	6

The investments segment contributes investment income and investments gains and losses to results of operations. Investments provide our primary source of pretax and after-tax profits.

- Investment income – Pretax investment income grew $10 million, or 2 percent, in 2018, primarily due to an increase from dividends. Dividend income reflected rising dividend rates and net purchases of equity securities from available funds. Interest income for 2018 matched 2017, as net purchases of fixed-maturity securities offset the continuing effects on bond yields of the low interest rate environment. Pretax investment income rose 2 percent in 2017, reflecting increases in both dividend income and interest income. Average yields in the investment income table below are based on the average invested asset and cash amounts indicated in the table using fixed-maturity securities valued at amortized cost and all other securities at fair value.
- Investment gains and losses – We reported an investment loss in 2018, primarily due to unfavorable changes in fair values of equity securities even though we continue to hold the securities or as otherwise required by GAAP. For both 2017 and 2016, we reported investment gains largely due to investment sales that were discretionary in timing and amount. Those gains were reduced by other-than-temporary impairment (OTTI) charges.

We believe it is useful to analyze our overall investment performance by using total investment return over several years. Total investment return considers changes in unrealized gains and losses that are not included in net income, in addition to net investment income and investment gains and losses that are included in net income. Changes in unrealized gains and losses shown in the table below include other invested assets. Considering total investment gains and losses over several years helps evaluate performance since gains and losses may experience typical variability during shorter periods of time.

The table below shows total return based on assumptions that simplify cash flow timing that is commonly used in total return measures. This simplified calculation uses data shown in our consolidated financial statements or notes to those statements. Added to invested asset amounts from our consolidated balance sheets are 50 percent of annual amounts pertaining to invested asset categories included in net cash used in investing activities from our consolidated statements of cash flows. The cash flow amounts are reduced by net gains from investment portfolio securities sales or called bonds, with the net result reduced by 50 percent to represent estimated new cash invested during each respective year. All new cash is assumed to be invested at the midpoint of the year.

Total investment return of negative 0.7 percent in 2018 was significantly less than in 2017. The 2018 contribution from the investment income component was offset by the net unfavorable effect of the investment gains and losses components. Comparing contributions for 2018 with 2017, investment income rose $10 million, investment gains decreased by $550 million and the invested assets net change in unrealized gains and losses decreased by $1.252 billion. The base component of the return calculation, annual average invested assets, was up 9 percent in 2018. For 2017 compared with 2016, total investment return rose 2.0 percentage points, reflecting an increase in the contributions of investment income, investment gains and the net change in unrealized gains and losses. The base component of the return calculation, annual average invested assets, increased 8 percent in 2017.

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Invested assets beginning balance:					
Fixed maturities	$10,699	$10,085	$9,650	6	5
Equity securities	6,249	5,334	4,706	17	13
Other invested assets	103	81	67	27	21
Invested assets beginning balance	17,051	15,500	14,423	10	7
Average acquisitions (dispositions), net	215	341	291	(37)	17
Annual average invested assets	$17,266	$15,841	$14,714	9	8
Total investment return:					
Investment income, net of expenses	$619	$609	$595	2	2
Investment gains and losses, net	(402)	148	124	nm	19
Total invested assets change in unrealized gains and losses	(339)	913	525	nm	74
Total	$(122)	$1,670	$1,244	nm	34
Total return on invested assets, pretax	(0.7)%	10.5%	8.5%		

Investment Income

The primary drivers of investment income are highlighted below, followed by investments results additional details.

- Interest income of $445 million in 2018 matched 2017. The average fixed-maturity pretax yield declined by approximately 17 basis points but was offset by a larger average fixed-maturity portfolio that rose 4 percent on an amortized cost basis. Interest income increased 1 percent in 2017 when that yield declined by approximately 18 basis points while the portfolio rose 5 percent on an amortized cost basis.
- Dividend income rose $11 million, or 6 percent, in 2018, after also rising 6 percent in 2017. Increases in dividend payment rates for most of the holdings in our common stock portfolio during both 2018 and 2017 drove the increases in dividend income. An increase in funds invested in that portfolio during 2018, and a small net decrease in 2017, also affected dividend income.

(Dollars in millions)	Years ended December 31, 2018	2017	2016	2018-2017 Change %	2017-2016 Change %
Investment income:					
Interest	$445	$445	$440	—	1
Dividends	181	170	161	6	6
Other	5	4	3	25	33
Less investment expenses	12	10	9	20	11
Investment income, pretax	619	609	595	2	2
Less income taxes	95	142	141	(33)	1
Total investment income, after-tax	$524	$467	$454	12	3
Investment returns:					
Average invested assets plus cash and cash equivalents	$17,397	$16,657	$15,316		
Average yield pretax	3.56 %	3.66 %	3.88 %		
Average yield after-tax	3.01	2.80	2.96		
Effective tax rate	15.4	23.4	23.8		
Fixed-maturity returns:					
Average amortized cost	$10,479	$10,057	$9,562		
Average yield pretax	4.25 %	4.42 %	4.60 %		
Average yield after-tax	3.55	3.24	3.35		
Effective tax rate	16.4	26.7	27.3		

In 2018, we continued to invest available cash flow in both fixed income and equity securities in a manner that we believe balances current income needs with longer-term invested asset growth goals. While our bond portfolio more than covers our insurance reserve liabilities, we believe our diversified common stock portfolio of mainly blue chip, dividend-paying companies represents one of our best investment opportunities for the long term. We position our portfolio with consideration to both the challenges presented by the current low interest rate environment and the risks presented by potential future inflation. As bonds in our generally laddered portfolio mature or are called over the near term, we will be challenged to replace their current yield. The table below summarizes pretax yield to amortized costs excluding any book value adjustments due to impairment for bonds in our fixed-maturity portfolio by various maturity periods.

At December 31, 2018	% Yield	Principal redemptions
Fixed-maturity yield profile:		
Expected to mature during 2019	5.92%	$ 588
Expected to mature during 2020	4.75	656
Expected to mature during 2021	4.40	971
Average yield and total expected redemptions from 2019 through 2021	4.91	$ 2,215

The average pretax yield of 4.38 percent for fixed-maturity securities acquired during 2018, shown in the table below, was higher than the 4.20 percent average yield-to-amortized cost of the fixed-maturity securities portfolio at the end of 2018.

	Years ended December 31,	
	2018	2017
Average pretax yield-to-amortized cost on new fixed-maturities:		
Acquired taxable fixed-maturities	4.48 %	3.88 %
Acquired tax-exempt fixed-maturities	3.69	3.29
Average total fixed-maturities acquired	4.38	3.61

We discussed our portfolio strategies in Item 1, Investments Segment. We discuss risks related to our investment income and our fixed-maturity and equity investment portfolios in Item 7a, Quantitative and Qualitative Disclosures About Market Risk.

Total Investment Gains and Losses

Investment gains and losses are recognized on the sales of investments, for certain changes in fair values of securities even though we continue to hold the securities or as otherwise required by GAAP. New accounting requirements adopted in 2018 resulted in reporting, through net income, the change in fair value for equity securities still held, as disclosed in Note 1, Summary of Significant Accounting Policies, and Note 2, Investments. Net investment gains and losses included $404 million of losses in 2018, from the recognition of fair value changes of equity securities still held that prior to 2018 would have been reported in other comprehensive income instead of net income. Change in unrealized gains or losses for fixed-maturity securities are included as a component of other comprehensive income (OCI). Accounting requirements for OTTI charges for the fixed-maturity portfolio are disclosed in Item 8, Note 1, Summary of Significant Accounting Policies. The factors we consider when evaluating impairments are also discussed in Critical Accounting Estimates, Asset Impairment.

The timing of gains or losses from sales can have a material effect on results in any given period. However, such gains or losses usually have little, if any, effect on total shareholders' equity because most equity and fixed-maturity investments are carried at fair value.

As appropriate, we buy, hold or sell both fixed-maturity and equity securities on an ongoing basis to help achieve our portfolio objectives. We generally purchase fixed-maturity securities with the intention to hold until maturity. If they no longer meet our investment criteria, they are divested. Sales of fixed-maturity securities are usually due to a change in credit fundamentals. Pretax net investment losses in 2018 were primarily due to unfavorable changes in fair values of equity securities even though we continue to hold the securities, and net gains in both 2017 and 2016 were largely due to rising fair values or sales of equity holdings. Additional information about investment gains or losses is included in Item 8, Note 2 of the Consolidated Financial Statements.

The table below summarizes total investment gains and losses, before taxes.

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Investment gains and losses			
Equity securities:			
Investment gains and losses on securities sold, net	$9	$—	$—
Unrealized gains and losses on securities still held, net	(404)	—	—
Gross realized gains	—	195	152
Gross realized losses	—	(72)	(53)
Other-than-temporary impairments	—	(3)	—
Subtotal	(395)	120	99
Fixed maturities:			
Gross realized gains	12	25	26
Gross realized losses	(2)	—	(1)
Other-than-temporary impairments	(5)	(6)	(2)
Subtotal	$5	$19	$23
Other	(12)	9	2
Total investment gains and losses reported in net income	(402)	148	124
Change in unrealized investment gains and losses			
Fixed maturities	(339)	99	(40)
Equity securities	—	816	571
Total realized investment gains and losses reported in OCI	(339)	915	531
Total	$(741)	$1,063	$655

OTTI charges from the investment portfolio by the asset classes we described in Item 1, Our Segments, Investments Segment, are summarized below:

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Taxable fixed maturities:			
Impairment amount	$5	$6	$2
New amortized cost	$8	$—	$1
Percent to total amortized cost owned	— %	— %	— %
Number of securities other-than-temporarily impaired	1	1	2
Percent to number of securities owned	— %	— %	— %
Tax-exempt fixed maturities:			
Impairment amount	$—	$—	$—
New amortized cost	$—	$—	$1
Percent to total amortized cost owned	— %	— %	— %
Number of securities other-than-temporarily impaired	—	—	2
Percent to number of securities owned	— %	— %	— %
Common equities:			
Impairment amount	$—	$3	$—
New cost	$—	$19	$—
Percent to total cost owned	— %	1 %	— %
Number of securities other-than-temporarily impaired	—	5	—
Percent to number of securities owned	— %	7 %	— %
Totals:			
Impairment amount	$5	$9	$2
New cost or amortized cost	$8	$19	$2
Percent to total cost or amortized cost owned	— %	— %	— %
Number of securities other-than-temporarily impaired	1	6	4
Percent to number of securities owned	— %	— %	— %

OTTI charges from the investment portfolio by industry are summarized as follows:

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Fixed maturities:			
Energy	$5	$ —	$ —
Banks	—	6	—
Utilities	—	—	2
Total fixed maturities	5	6	2
Common equities:			
Energy	—	3	—
Total common equities	—	3	—
Total	$5	$ 9	$ 2

Investments Outlook

Bond prices were under pressure in 2018 as interest rates rose and corporate credit spreads widened. While in recent quarters we have been able to purchase fixed income securities at yields exceeding the average of the existing portfolio, we continue to experience redemptions of higher coupon bonds purchased during and shortly after the financial crisis that we cannot replace in the current market with similar quality and coupon levels.

We continue to focus on portfolio strategies to balance near-term income generation and long-term book value growth. In 2019, we expect to continue to allocate a portion of cash available for investment to equity securities, taking into consideration corporate liquidity and income requirements, as well as insurance department regulations and rating agency comments. We discuss our portfolio strategies in Item 1, Our Segments, Investments Segment.

We believe that a reversal of the slow but steady improvement in economic conditions could heighten the risk of renewed pressure on securities markets, which could lead to additional OTTI charges. Our asset impairment committee continues to monitor the investment portfolio. The current asset impairment policy is described in Critical Accounting Estimates, Asset Impairment.

Other

Total revenues in 2018 for our Other operations increased, compared with 2017, primarily due to earned premiums of Cincinnati Re, our reinsurance assumed operation. Other also includes noninvestment operations of the parent company and its commercial leasing and financial services subsidiary, CFC Investment Company. Total expenses for Other also increased in 2018, primarily due to losses and loss expenses and underwriting expenses from Cincinnati Re.

Other loss in the table below represents losses before income taxes. For each year shown, Other loss was largely driven by interest expense from debt of the parent company. Net results of Cincinnati Re were an underwriting loss of approximately $8 million in 2018 and an underwriting loss of approximately $20 million in 2017, reflecting significant amounts of natural catastrophe losses, following a 2016 underwriting profit of approximately $8 million.

(Dollars in millions)	Years ended December 31,			2018-2017	2017-2016
	2018	2017	2016	Change %	Change %
Interest and fees on loans and leases	$4	$4	$4	0	0
Earned premiums	132	107	49	23	118
Other revenues	1	1	1	0	0
Total revenues	137	112	54	22	107
Interest expense	53	53	53	0	0
Loss and loss expenses	98	92	25	7	268
Underwriting expenses	42	35	16	20	119
Operating expenses	16	13	12	23	8
Total expenses	209	193	106	8	82
Other loss	$(72)	$(81)	$(52)	11	(56)

Taxes
We had a $36 million income tax benefit in 2018 compared with a $315 million income tax benefit in 2017 and $221 million of income tax expense in 2016. Our corporate effective tax rate for 2018 was negative 14.3 percent compared with negative 43.2 percent in 2017 and 27.2 percent in 2016.

The change in our effective tax rate between years is largely driven by the significant non-recurring income tax benefit recorded during 2017 as a result of enactment of the Tax Cuts and Jobs Act (the “Tax Act”) on December 22, 2017. The 2017 effective tax rate was reduced as a result of the revaluation of our net deferred tax liability to account for the decrease in the federal tax rate from 35 percent to 21 percent. In addition, as a result of adoption of ASU 2016-01 in 2018, the change in our effective tax rate was impacted due to large net unrealized losses included in 2018 income versus only net realized gains included in income for the prior-year periods. Finally, our change in the effective tax rate for the current year included a reduction of 19.9 percent as a result of Internal Revenue Service (“IRS”) approved changes to our tax accounting methods, primarily related to the valuation of our tax base unpaid losses.

Historically, we have pursued a strategy of investing some portion of cash flow in tax-advantaged, fixed-maturity and equity securities to minimize our overall tax liability and maximize after-tax earnings. See Item 1, Our Segments, Fixed-Maturity Security Investments, for further discussion on municipal bond purchases in our fixed-maturity investment portfolio. For tax years 2017 and earlier, for our property casualty insurance subsidiaries, approximately 85 percent of interest from tax-advantaged fixed-maturity investments and approximately 60 percent of dividends from qualified equities were exempt from federal tax after applying proration from the 1986 Tax Reform Act. Our noninsurance companies own an immaterial amount of tax-advantaged, fixed-maturity investments. For our noninsurance companies, the dividend received deduction exempted 70 percent of dividends from qualified equities. Our life insurance company does not own tax-advantaged, fixed maturity investments or equities subject to the dividend received deduction.

The Tax Act, which took effect on January 1, 2018, lowered the U.S. corporate income tax rate from a top marginal rate of 35 percent to a flat rate of 21 percent and changed the amount of dividends received deduction and proration. For tax years after 2017, for our property casualty insurance subsidiaries, approximately 75 percent of interest from tax-advantaged, fixed-maturity investments and approximately 40 percent of dividends from qualified equities are exempt from federal tax after applying proration. For our noninsurance companies, the dividend received deduction exempts 50 percent of dividends from qualified equities.

Our effective tax rate reconciliation is found in Item 8, Note 11 of the Consolidated Financial Statements.

Liquidity and Capital Resources

We seek to maintain prudent levels of liquidity and financial strength for the protection of our policyholders, creditors and shareholders. We manage liquidity at two levels to meet the short- and long-term cash requirements of business obligations and growth needs. The first is the liquidity of the parent company. The second is the liquidity of our insurance subsidiary. Management of liquidity at both levels is essential because each has different funding needs and sources, and each is subject to certain regulatory guidelines and requirements.

Parent Company Liquidity

At December 31, 2018, the parent company had $2.478 billion in cash and marketable securities, providing strong liquidity to fund cash outflows, as needed. The payment of dividends to shareholders is largely based upon receiving subsidiary dividends. Alternatively, we could sell investments or use our line of credit to support the dividend payment.

The parent company's primary sources of cash inflows are dividends from our insurance subsidiary, investment income and sale proceeds from investments. The parent company's cash outflows are primarily interest and principal payments on long- and short-term debt, dividends to shareholders, common stock repurchases and general operating expenses. The table below shows a summary, by the direct cash flow method, of the major sources and uses of cash flow of the parent company.

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Sources of liquidity:			
Insurance subsidiary dividends received	$500	$465	$475
Investment income received	65	62	56
Proceeds from stock options exercised	9	13	21
Uses of liquidity:			
Shareholders' dividend payments	$336	$400	$306
Debt interest payments	52	52	52
Share repurchases	125	92	39
Pension contribution	15	12	13

Dividends received from the subsidiary in 2018 were $35 million more than 2017 while shareholder's dividend payments decreased by $64 million, largely as a result of a special dividend declared and paid in 2017. We expect 2019 parent company sources of cash flow to be similar to 2018. Use of liquidity for share repurchases are discretionary depending on cash availability and capital management decisions. The majority of expenditures for the parent company have been fairly consistent during the last three years, and we expect future expenditures to remain consistent except for the acquisition of MSP Underwriting Limited (MSP) as disclosed in Item 8, Note 1 of the Consolidated Financial Statements. We entered into a foreign exchange forward contract that provides for an economic hedge for the agreed upon purchase price. The acquisition transaction is expected to close during the first quarter of 2019.

Insurance Subsidiary Liquidity

The parent company's insurance subsidiary is largely the operations of the property casualty segments. The primary sources of cash inflows are collection of premiums, investment income, maturity of fixed-income securities and sale proceeds from investments. Property casualty insurance premiums generally are received before losses are paid under the policies purchased with those premiums. Cash outflows are primarily loss and loss expenses, commissions, salaries, taxes, operating expenses and investment purchases. Over the three-year period ended December 31, 2018, premium receipts and investment income have been more than sufficient to pay claims and operating expenses. Excess cash flows were partially used to pay dividends to the parent company. We are not aware of any known trends that would materially change historical cash flow results other than fluctuations in catastrophe claims and other large losses either individually or in aggregate.

The table below shows a summary of operating cash flow for property casualty insurance (direct method). Historically, annual variation in operating cash flow has been largely related to changes in amounts of catastrophe losses.

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Premiums collected	$5,028	$4,846	$4,466
Loss and loss expenses paid	(2,847)	(2,843)	(2,503)
Commissions and other underwriting expenses paid	(1,549)	(1,471)	(1,375)
Cash flow from underwriting	632	532	588
Investment income received	428	411	397
Cash flow from operations	$1,060	$943	$985

Other Sources of Liquidity

Cash in excess of operating requirements is invested in fixed-maturity and equity securities. Cash generated from investment income provides an important investment contribution to cash flow and liquidity. The sale of investments could provide an additional source of liquidity at either the parent company or insurance subsidiary level, if required. In addition to possible sales of investments, proceeds of call or maturities of fixed-maturity securities also can provide liquidity. During the five-year period beginning in 2019, fair value of $3.504 billion, or 32.8 percent, of our fixed-maturity portfolio is scheduled to mature. At December 31, 2018, we had $5.742 billion of common stock securities, with $2.233 billion, or 38.9 percent, held by the parent company.

Financial resources of the parent company also could be made available to our insurance subsidiaries, if circumstances required it. This flexibility would include our ability to access the capital markets and short-term bank borrowings. We generally have minimized our reliance on debt financing, although we may use the line of credit to fund short-term cash needs.

Long-Term Debt

We provide details of our three long-term notes in Item 8, Note 8 of the Consolidated Financial Statements. None of the notes are encumbered by rating triggers. The total principal amount of our long-term debt at December 31, 2018, was $793 million and included:

- $28 million aggregate principal amount of 6.900% senior debentures due 2028.
- $391 million aggregate principal amount of 6.920% senior debentures due 2028.
- $374 million aggregate principal amount of 6.125% senior debentures due 2034.

The company's senior debt is rated investment grade by independent rating firms. None of the four rating agencies made changes to our debt ratings in 2018. Our debt ratings at February 21, 2019, were: a- from A.M. Best, A- from

Fitch, A3 from Moody’s and BBB+ from S&P.

Note Payable

At December 31, 2018, we had a $225 million line of credit with commercial banks, with $32 million borrowed. That line of credit had a $24 million balance at December 31, 2017. During 2018, we borrowed a net $8 million as part of routine cash management. That line of credit was due to expire on May 13, 2019. Effective February 4, 2019, we amended our unsecured revolving line of credit to $300 million with an accordion feature giving us the option to double that amount under the same terms and conditions. The agreement was extended for five years, amending the expiration to February 4, 2024, with the option of two one-year extensions. Terms and conditions are similar to the former agreement except the net worth covenant has been eliminated and debt-to-total capital maximum is now 35 percent.

We are in compliance with all covenants under the credit agreement and believe we will remain in compliance. The credit agreement provides alternative interest charges based on the type of borrowing and our debt rating. The interest rate charged is adjusted LIBOR plus an applicable margin.

Capital Resources

Capital resources consisting of shareholders’ equity and total debt represent our overall financial strength to support current obligations and growth in our insurance businesses. At December 31, 2018, we had total capital of $8.653 billion. Shareholders’ equity was $7.833 billion, a decrease of $410 million, or 5 percent, from the prior year. Our total debt was $820 million, up $9 million from a year ago. We seek to maintain a solid financial position and provide capital flexibility by keeping our ratio of debt to total capital moderate. At year-end 2018, the ratio was 9.5 percent, compared with 9.0 percent at year-end 2017.

At the discretion of the board of directors, the company can return capital directly to shareholders as discussed below.

- Dividends to shareholders – The ability of our company to continue paying cash dividends is subject to factors the board of directors deem relevant. While the board and management believe there is merit to sustaining the company’s long record of dividend increases, our first priority is the company’s financial strength. Over the past 10 years, the company has paid an average of 73 percent of net income as dividends. Through 2018, the board had increased our cash dividend for 58 consecutive years. The board decision in February 2019 to increase the dividend demonstrated confidence in the company’s strong capital, liquidity, financial flexibility and initiatives to grow earnings.
- Common stock repurchase – Generally, our board believes that share repurchases can help fulfill our commitment to enhancing shareholder value. Consequently, the board has authorized the repurchase of outstanding shares, giving management discretion to purchase shares at reasonable prices in light of circumstances at the time of purchase. Our approach has been to hold capital adequate to support future growth of our insurance operations and repurchase shares at management's discretion. Repurchases are intended to offset the issuance of shares through equity compensation plans, primarily due to vesting of service-based restricted stock units of equity awards granted in the past. The amount of future repurchases may be more, or less, than the past, depending on circumstances and discretion exercised by management. Our corporate Code of Conduct restricts repurchases during certain time periods. The details of the repurchase authorizations and activity are described in Item 5, Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Obligations

We pay obligations to customers, suppliers and associates in the normal course of our business operations. Some are contractual obligations that define the amount, circumstances and/or timing of payments. We have other commitments for business expenditures; however, the amount, circumstances and/or timing of our other commitments are not dictated by contractual arrangements.

Contractual Obligations

At December 31, 2018, we estimated our future contractual obligations as follows:

(Dollars in millions) Payment due by period	Year 2019	Years 2020-2021	Years 2022-2023	There-after	Total
Gross property casualty loss and loss expense payments	$1,910	$ 1,981	$ 809	$946	$5,646
Gross life policyholder obligations	133	166	208	5,080	5,587
Interest on long-term debt	52	104	104	371	631
Long-term debt	—	—	—	793	793
Short-term debt	32	—	—	—	32
Profit-sharing commissions	140	—	—	—	140
Capital lease obligations	16	21	10	2	49
Other liabilities	104	17	5	10	136
Total	$2,387	$ 2,289	$ 1,136	$7,202	$13,014

Other Commitments

At December 31, 2018, we believe our most significant other commitments were:

- Commissions – We expect commission payments to generally track with written premiums.
- Other operating expenses – Many of our operating expenses are not contractual obligations but reflect the ongoing expenses of our business. For example, we anticipate capitalizing development costs for approximately $7 million in spending for key technology initiatives in 2019, compared with actual capitalization totaling $7 million in 2018 and $7 million in 2017. These activities are conducted at our discretion, and we have no material contractual obligations for activities planned as part of these projects.
- Other invested assets – We expect to fund approximately $71 million for our private equity and real estate investments over the next several years.

Liquidity and Capital Resources Outlook

At December 31, 2018, we had $784 million in cash and cash equivalents. During 2019, our insurance subsidiary can declare $626 million in dividends to our parent company without regulatory approval. That strong liquidity and our consistent cash flows give us the flexibility to meet current obligations and commitments while building value by prudently investing where we see potential for both current income and long-term return. Our cash and cash equivalents provide adequate financial cushion when short-term operating results do not meet our objectives.

A long-term perspective governs our liquidity and capital resources decisions, with the goal of benefiting our policyholders, agents, shareholders and associates over time. Our underwriting philosophy and initiatives can drive performance to achieve our underwriting profitability target of a GAAP combined ratio over any five-year period that consistently averages within the range of 95 percent to 100 percent. Our GAAP combined ratio averaged 95.1 percent over the five-year period 2014 through 2018, resulting in strong underwriting profits.

In any year, we consider the most likely source of pressure on liquidity would be an unusually high level of catastrophe loss payments within a short period of time. There could be additional obligations for our insurance operations due to increasing severity or frequency of noncatastrophe claims. To address the risk of unusually large insurance loss obligations including catastrophe events, we maintain property casualty reinsurance contracts with highly rated reinsurers, as discussed under 2019 Reinsurance Ceded Programs. We also monitor the financial condition of our reinsurers because their insolvency could jeopardize a portion of our $484 million reinsurance recoverable asset at December 31, 2018. Parent-company liquidity could also be constrained by Ohio regulatory requirements that restrict the dividends insurance subsidiaries can pay.

Economic weakness also has the potential to affect our liquidity and capital resources in a number of different ways, including delinquent payments from agencies, defaults on interest payments by fixed-maturity holdings in our portfolio, dividend reductions by holdings in our equity portfolio or declines in the market value of holdings in our portfolio.

Off-Balance-Sheet Arrangements

We do not use any special-purpose financing vehicles or have any undisclosed off-balance-sheet arrangements (as that term is defined in applicable SEC rules) that are reasonably likely to have a current or future material effect on the company's financial condition, results of operation, liquidity, capital expenditures or capital resources.

Property Casualty Loss and Loss Expense Obligations and Reserves

Our estimate of future gross property casualty loss and loss expense payments of $5.646 billion is lower than loss and loss expense reserves of $5.707 billion reported on our balance sheet at December 31, 2018. The $61 million difference is due to certain life and health loss reserves. Reserving practices are discussed in Critical Accounting Estimates, Property Casualty Insurance Loss and Loss Expense Reserves.

For the business lines in the commercial and personal lines insurance segments, and in total for the excess and surplus lines insurance segment, the following table details gross reserves among case, IBNR and loss expense reserves, net of salvage and subrogation. The $427 million increase in total gross reserves was primarily due to a $180 million increase in case loss reserves and a $174 million increase in IBNR loss reserves. Total gross reserves for our commercial casualty line of business rose $161 million, for Cincinnati Re they rose $71 million, for our homeowner line of business they rose $65 million and for our commercial auto line of business they rose $50 million.

Property Casualty Gross Loss and Loss Expense Reserves

(Dollars in millions)	Loss reserves		Loss	Total	
	Case reserves	IBNR reserves	expense reserves	gross reserves	Percent of total
At December 31, 2018					
Commercial lines insurance:					
Commercial casualty	$ 981	$ 647	$ 604	$ 2,232	39.5 %
Commercial property	270	12	60	342	6.1
Commercial auto	402	152	141	695	12.3
Workers' compensation	384	542	92	1,018	18.0
Other commercial	99	7	73	179	3.2
Subtotal	2,136	1,360	970	4,466	79.1
Personal lines insurance:					
Personal auto	240	50	72	362	6.3
Homeowner	152	9	40	201	3.6
Other personal	46	65	5	116	2.1
Subtotal	438	124	117	679	12.0
Excess and surplus lines	118	96	84	298	5.3
Cincinnati Re	32	169	2	203	3.6
Total	$ 2,724	$ 1,749	$ 1,173	$ 5,646	100.0 %
At December 31, 2017					
Commercial lines insurance:					
Commercial casualty	$ 890	$ 611	$ 570	$ 2,071	39.7 %
Commercial property	232	18	65	315	6.0
Commercial auto	401	119	125	645	12.4
Workers' compensation	393	533	96	1,022	19.5
Other commercial	108	14	61	183	3.5
Subtotal	2,024	1,295	917	4,236	81.2
Personal lines insurance:					
Personal auto	240	35	70	345	6.6
Homeowner	101	2	33	136	2.6
Other personal	55	46	5	106	2.1
Subtotal	396	83	108	587	11.2
Excess and surplus lines	104	87	73	264	5.1
Cincinnati Re	20	110	2	132	2.5
Total	$ 2,544	$ 1,575	$ 1,100	$ 5,219	100.0 %

Asbestos and Environmental Loss and Loss Expense Reserves
We carried $89 million of net loss and loss expense reserves for asbestos and environmental claims and $44 million of reserves for mold claims at year-end 2018, compared with $84 million and $45 million, respectively, for such claims at year-end 2017. The asbestos and environmental claims amounts for each respective year constituted 1.6 percent and 1.7 percent of total net loss and loss expense reserves at these year-end dates.

We believe our exposure to asbestos and environmental claims is limited, largely because our reinsurance retention was $500,000 or below prior to 1987. We also were predominantly a personal lines company in the 1960s and 1970s, when asbestos and pollution exclusions were not widely used by commercial lines insurers. During the 1980s and early 1990s, commercial lines grew as a percentage of our overall business and our exposure to asbestos and environmental claims grew accordingly. Over that period, we endorsed to or included in most policies an asbestos and environmental exclusion.

Additionally, since 2002, we have revised policy terms where permitted by state regulation to limit our exposure to mold claims prospectively and further reduce our exposure to other environmental claims generally. Finally, we have not engaged in any mergers or acquisitions through which such a liability could have been assumed. We continue to monitor our claims for evidence of material exposure to other mass tort classes, but we have found no such credible evidence to date.

Reserving data for asbestos and environmental claims has characteristics that limit the usefulness of the methods and models used to analyze loss and loss expense reserves for other claims. Specifically, asbestos and environmental loss and loss expenses for different accident years do not emerge independently of one another as loss development and Bornhuetter-Ferguson methods assume. In addition, asbestos and environmental loss and loss expense data available to date did not reflect a well-defined tail, greatly complicating the identification of an appropriate probabilistic trend family model. At year-end 2018, we used a weighted average of a paid survival ratio method and report year method to estimate reserves for IBNR asbestos and environmental claims. Our exposure to such claims is limited; we believe a weighted average of both methods produces a sufficient level of reserves.

Gross Property Casualty Loss and Loss Expense Payments
While we believe that historical performance of property casualty and life loss payment patterns is a reasonable source for projecting future claim payments, there is inherent uncertainty in this estimate of contractual obligations. We believe that we could meet our obligations under a significant and unexpected change in the timing of these payments because of the liquidity of our invested assets, strong financial position and access to lines of credit.

Our estimates of gross property casualty loss and loss expense payments do not include reinsurance receivables or ceded losses. As discussed in 2019 Reinsurance Ceded Programs, we purchase reinsurance to mitigate our property casualty risk exposure. Ceded property casualty reinsurance unpaid receivables of $238 million at year-end 2018 are an offset to our gross property casualty loss and loss expense obligations. Our reinsurance program mitigates the liquidity risk of a single large loss or an unexpected rise in claim severity or frequency due to a catastrophic event. Reinsurance does not relieve us of our obligation to pay covered claims. The financial strength of our reinsurers is important because our ability to recover losses under our reinsurance agreements depends on the financial viability of the reinsurers.

We direct our associates and agencies to settle claims and pay losses as quickly as is practical, and we made $2.847 billion of net claim payments during 2018. At year-end 2018, total net property casualty reserves of $5.408 billion reflected $2.578 billion in unpaid amounts on reported claims (case reserves), $1.161 billion in loss expense reserves and $1.669 billion in estimates of claims that were incurred but had not yet been reported (IBNR). The specific amounts and timing of obligations related to case reserves and associated loss expenses are not set contractually. The amounts and timing of obligations for IBNR claims and related loss expenses are unknown.

We discuss our methods of establishing loss and loss expense reserves and our belief that reserves are adequate in Critical Accounting Estimates, Property Casualty Insurance Loss and Loss Expense Reserves.

The historical pattern of using premium receipts for the payment of loss and loss expenses has enabled us to extend slightly the maturities of our investment portfolio beyond the estimated settlement date of the loss reserves.
The effective duration of our consolidated property casualty fixed-maturity portfolio was 5.2 years at year-end 2018. By contrast, the duration of our loss and loss expense reserves was approximately 3.8 years. We believe this difference in duration does not affect our ability to meet current obligations because cash flow from operations is sufficient to meet these obligations. In addition, investment holdings could be sold, if necessary, to meet higher than anticipated loss and loss expenses.

Range of Reasonable Reserves
The company established a reasonably likely range for net loss and loss expense reserves of $5.037 billion to $5.481 billion at year-end 2018, with the company carrying net reserves of $5.408 billion. The likely range was $4.709 billion to $5.155 billion at year-end 2017, with the company carrying net reserves of $5.032 billion. Our loss and loss expense reserves are not discounted for the time-value of money, but we have reduced the reserves by an estimate of the amount of salvage and subrogation payments we expect to recover.

The low point of each year's range corresponds to approximately one standard error below each year's mean reserve estimate, while the high point corresponds to approximately one standard error above each year's mean reserve estimate. We discussed management's reasons for basing reasonably likely reserve ranges on standard errors in Critical Accounting Estimates, Reserve Estimate Variability.

The ranges reflect our assessment of the most likely unpaid loss and loss expenses at year-end 2018 and 2017. However, actual unpaid loss and loss expenses could nonetheless fall outside of the indicated ranges.

Management's best estimate of total loss and loss expense reserves as of year-end 2018 and 2017 was consistent with the corresponding actuarial best estimate.

Property Casualty Insurance Development of Estimated Reserves by Accident Year

The following table shows net reserve changes at year-end 2018, 2017 and 2016 by property casualty segment and accident year:

(Dollars in millions)	Commercial lines	Personal lines	E&S lines	Cincinnati Re	Totals
As of December 31, 2018					
2017 accident year	$ (68)	$ 11	$ (8)	$ 3	$ (62)
2016 accident year	(34)	2	(3)	(2)	(37)
2015 accident year	(31)	3	(7)	—	(35)
2014 accident year	(3)	(1)	(5)	—	(9)
2013 accident year	(9)	—	—	—	(9)
2012 accident year	(10)	(1)	(1)	—	(12)
2011 and prior accident years	(2)	(1)	—	—	(3)
(Favorable)/unfavorable	$ (157)	$ 13	$ (24)	$ 1	$ (167)
As of December 31, 2017					
2016 accident year	$ (35)	$ (8)	$ (5)	$ (3)	$ (51)
2015 accident year	(4)	2	(8)	—	(10)
2014 accident year	(10)	(2)	(11)	—	(23)
2013 accident year	(12)	(5)	(4)	—	(21)
2012 accident year	11	1	(1)	—	11
2011 accident year	(20)	—	—	—	(20)
2010 and prior accident years	(3)	(2)	—	—	(5)
(Favorable)/unfavorable	$ (73)	$ (14)	$ (29)	$ (3)	$ (119)
As of December 31, 2016					
2015 accident year	$ (64)	$ (12)	$ (15)	$ (1)	$ (92)
2014 accident year	(41)	7	(7)	—	(41)
2013 accident year	(21)	2	(9)	—	(28)
2012 accident year	(2)	(1)	(2)	—	(5)
2011 accident year	(4)	1	(1)	—	(4)
2010 accident year	(2)	1	—	—	(1)
2009 and prior accident years	5	(2)	—	—	3
(Favorable)/unfavorable	$ (129)	$ (4)	$ (34)	$ (1)	$ (168)

Overall favorable development for consolidated property casualty reserves of $167 million in 2018 illustrated the potential for revisions inherent in estimating reserves, especially for long-tail lines such as commercial casualty and workers' compensation. As noted in Critical Accounting Estimates, Key Assumptions Loss Reserving, our models predict that actual loss and loss expense emergence will differ from projections, and we do not attempt to monitor or identify such normal variations. The table in Property Casualty Loss and Loss Expense Obligations and Reserves shows reserves by segment and lines of business and the components of gross reserves among case, IBNR and loss expense reserves.

Favorable reserve development of $58 million for our workers' compensation line accounted for approximately 37 percent of our commercial lines insurance segment net total in 2018, while favorable reserve development was $47 million for our commercial casualty line of business and $47 million for our commercial property line of business. Our homeowner line of business experienced $24 million of unfavorable reserve development on prior accident years recorded during 2018, and that 2018 measure for our commercial auto line of business was also unfavorable at $14 million. Drivers of significant reserve development typically reflect loss emergence on known claims that was more favorable or less favorable than previously anticipated for various lines of business and are discussed below.

- Commercial casualty – During 2018, we experienced favorable development on prior accident years after seeing adverse development in 2017 for this line of business. We continue to watch this line so we can detect unfavorable trends should they reoccur.
- Workers' compensation – We continue to see favorable reserve development, for all prior accident years in aggregate. During 2018, the trend for estimated payments to be made in future calendar years was stable compared to 2017. However, we continue to monitor this line closely, as a sudden increase in trend for future payments has a highly leveraged effect.
- Commercial auto – Loss emergence continued to develop unfavorably during calendar year 2018. This line of business has been troublesome for the industry as a whole in recent years. As part of the U.S. economic recession of a few years ago, slowing business activity influenced our estimates of reserves for ultimate losses and loss expenses during that period. As the economy slowly recovered, we believe we were slow to recognize some of the higher loss cost effects in current accident year reserve estimates for at least part of that period. As claims that occurred during that period have become more mature, paid and reported loss cost trends resulted in us increasing our estimated ultimate losses. Initiatives to improve profitability of our commercial auto line of business are discussed in Commercial Lines Insurance Results.
- Personal auto – Loss emergence continued to develop unfavorably during calendar year 2018, for several older accident years. This line of business is subject to many of the same cost pressures related to the economic slowdown as commercial auto. Initiatives to improve profitability of our personal auto line of business are discussed in Personal Lines Insurance Results.

In consideration of the data's credibility, we analyze commercial and personal umbrella liability reserves together and then allocate the derived total reserve estimate to the commercial and personal coverages. Consequently, all of the umbrella factors that contributed to commercial lines reserve development also contributed to personal lines reserve development through the other personal line, of which personal umbrella coverages are a part.

For the excess and surplus lines insurance segment, the table showing reserves by segment and lines of business in Property Casualty Loss and Loss Expense Obligations and Reserves, shows the components of gross reserves among case, IBNR and loss expense reserves. Total gross reserves were up $34 million from year-end 2017 primarily due to the increase in premiums and exposures for this segment, as we discussed in Excess and Surplus Lines Insurance Results. Favorable development during 2018 of $24 million for excess and surplus lines insurance segment reserves, shown in the table above, illustrates the potential for revisions inherent in estimating reserves.

Life Insurance Policyholder Obligations and Reserves

Gross Life Insurance Policyholder Obligations

Our estimates of life, annuity and disability policyholder obligations reflect future estimated cash payments to be made to policyholders for future policy benefits, policyholders' account balances and separate account liabilities. These estimates include death and disability income claims, policy surrenders, policy maturities, annuity payments, minimum guarantees on separate account products, commissions and premium taxes offset by expected future deposits and premiums on in-force contracts. Further, these estimates are based on mortality, morbidity and lapse assumptions reflective of our recent experience and expectations of future payment obligations.

Our estimates of gross life, annuity and disability obligations do not reflect net recoveries from reinsurance agreements. Ceded life reinsurance receivables were $240 million at year-end 2018. As discussed in 2018 Reinsurance Programs, we purchase reinsurance to mitigate our life insurance risk exposure. At year-end 2018, ceded death benefits represented approximately 36.8 percent of our total gross policy face amounts in force.

These estimated cash outflows are undiscounted with respect to interest. As a result, the sum of the cash outflows for all years of $5.587 billion (total of life insurance obligations) exceeds the liabilities recorded in life policy and investment contract reserves and separate accounts for future policy benefits and claims of $3.576 billion (total of life insurance policy reserves and separate account policy reserves). A significant portion of the difference can be attributed to time value of money and changes in mortality, morbidity and lapse assumptions between the date the liabilities were originally established and the current date.

We have made significant assumptions to determine the estimated undiscounted cash flows of these policies and contracts that include mortality, morbidity, timing of claims, future lapse rates and interest crediting rates. Due to the significance of the assumptions used, the amounts presented could materially differ from actual results.

Life Insurance Reserves

Gross life policy reserves were $2.779 billion at year-end 2018, compared with $2.729 billion at year-end 2017. The increase was primarily due to reserves for traditional life insurance contracts. We establish reserves for traditional life insurance policies based on expected expenses, mortality, morbidity, withdrawal rates and investment yields, including a provision for uncertainty. Once these assumptions are established, they generally are maintained throughout the lives of the contracts. We use both our own experience and industry experience adjusted for historical trends in arriving at our assumptions for expected mortality and morbidity. We use our own experience and historical trends for setting our assumptions for expected withdrawal rates and expenses. We base our assumptions for expected investment income on our own experience adjusted for current and future expected economic conditions.

We establish reserves for our universal life, deferred annuity and investment contracts equal to the cumulative account balances, which include premium deposits plus credited interest less charges and withdrawals. Some of our universal life insurance policies contain no-lapse guarantee provisions. For these policies, we establish a reserve in addition to the account balance based on expected no-lapse guarantee benefits and expected policy assessments.

We regularly review our life insurance business to ensure that any deferred acquisition cost associated with the business is recoverable and that our actuarial liabilities (life insurance segment reserves) make sufficient provision for future benefits and related expenses.

2019 Reinsurance Ceded Programs

A single large loss or an unexpected rise in claims severity or frequency due to a catastrophic event is a risk to the company's liquidity and financial strength. In an effort to control such losses, we limit marketing property casualty insurance in specific geographic areas and monitor our exposure in certain coastal regions. An example of this is the reduction in recent years of our homeowner policies in the southeastern U.S. coastal region. Loss exposures in that area had been identified as a major contributor to our catastrophe probable maximum loss estimates shown in the table below. Those estimates were subsequently reduced, in large part due to less exposure from southeastern U.S. homeowner policies. We also continually review aggregate exposures to huge disasters and purchase reinsurance protection to cover these exposures. For business other than Cincinnati Re, we use the Risk Management Solutions (RMS) and Applied Insurance Research (AIR) models to evaluate exposures to a once-in-a-100-year and a once-in-a-250-year event to help determine appropriate reinsurance coverage programs. In conjunction with these activities, we also continue to evaluate information provided by our reinsurance broker. Examples include deterministic modeling of probable maximum loss contribution from growth in new geographic territories.

To help determine appropriate reinsurance coverage for hurricane, earthquake and tornado/hail exposures, for business other than Cincinnati Re we use the RMS and AIR models to estimate the probable maximum loss from a single event or multiple events occurring in a one-year period. The models are proprietary in nature, and the vendors that provide them periodically update the models, sometimes resulting in significant changes to their estimate of probable maximum loss. As of the end of 2018, both models indicated that a hurricane event represents our largest amount of exposure to losses. The table below summarizes estimated probabilities and the corresponding probable maximum loss from a single hurricane event occurring in a one-year period, for business other than Cincinnati Re, and indicates the effect of such losses on consolidated shareholders' equity at December 31, 2018. Net losses are net of reinsurance and income taxes, assuming a 21 percent federal tax rate, and assume our 2019 reinsurance programs apply.

(Dollars in millions)	RMS Model			AIR Model		
Probability at December 31, 2018	Gross losses	Net losses	Percent of total equity	Gross losses	Net losses	Percent of total equity
2.0% (1 in 50 year event)	$349	$ 89	1.1 %	$361	$ 89	1.1 %
1.0% (1 in 100 year event)	558	97	1.2	524	95	1.2
0.4% (1 in 250 year event)	932	350	4.5	814	252	3.2
0.2% (1 in 500 year event)	1,291	632	8.1	1,076	451	5.8

The modeled losses according to RMS in the table are based on its RiskLink version 18.0 catastrophe model and use a long-term storm catalog methodology. The modeled losses according to AIR in the table are based on its AIR Touchstone® version 6.0 catastrophe model and use a long-term methodology. The AIR and RMS storm catalogs include decades of documented weather events used in simulations for probable maximum loss projections.

Reinsurance mitigates the risk of highly uncertain exposures and limits the maximum net loss that can arise from large risks or risks concentrated in areas of exposure. Management's decisions about the appropriate structure of reinsurance protection and level of risk retention are affected by various factors, including changes in our underwriting practices, capacity to retain risks and reinsurance market conditions.

Reinsurance does not relieve us of our obligation to pay covered claims. The financial strength of our reinsurers is important because our ability to recover for losses covered under any reinsurance agreement depends on the financial viability of the reinsurer.

For 2019, the primary participants on our standard market property and casualty per-risk and per-occurrence reinsurance ceded programs include Hannover Reinsurance Company, Munich Reinsurance America, Partner Reinsurance Company of the U.S. and Swiss Reinsurance America Corporation, all of which had A.M. Best insurer financial strength ratings of A (Excellent) or better as of December 31, 2018. Our property catastrophe program is subscribed through a broker by reinsurers from the United States, Bermuda, London and the European markets. The largest participant in our property catastrophe program, representing approximately 47 percent of total participation, is the Lloyd's of London placement that features numerous syndicates, with AXA XL and Liberty taking the largest participations. Other primary participants in our property catastrophe program include Amlin Underwriting Limited, Axis and Fidelis.

The following table shows our five largest property casualty reinsurance receivable amounts by reinsurer at year-end 2018 and 2017. Michigan Catastrophic Claims Association is a mandatory nonprofit association which runs a reinsurance program funded by an annual premium assessment per vehicle. This assessment covers Michigan’s automobile no-fault policies which provide unlimited lifetime coverage for medical expenses resulting from auto accidents. Third Point Reinsurance is one of several reinsurers that Cincinnati Re transacts business with to cede part of its risk to unaffiliated reinsurance companies through retrocessions. The A.M. Best insurer financial strength ratings as of the end of the two most recent years are also shown for each of those reinsurers that are rated by Best.

(Dollars in millions)	2018		2017	
Name of reinsurer	Total receivable	A.M. Best Rating	Total receivable	A.M. Best Rating
Michigan Catastrophic Claims Association	$44	NA	$40	NA
Swiss Reinsurance America Corporation	42	A+	36	A+
General Reinsurance Corporation	31	A++	30	A++
Munich Reinsurance America	27	A+	21	A+
Third Point Reinsurance	25	A-	34	A-

Primary components of the 2019 property and casualty reinsurance program are summarized below. The premium estimates below occurred near the beginning of each respective year, when direct written premiums that were subject to applicable reinsurance treaties were also estimated.

- Property per risk treaty – The primary purpose of the property treaty is to provide capacity up to $50 million, adequate for the majority of the risks we write. It also includes protection for extra-contractual liability coverage losses. We retain the first $10 million of each loss. Losses between $10 million and $50 million are reinsured at 100 percent. The 2019 ceded premium estimate was $28 million, compared with $26 million for the 2018 estimate.
- Property excess treaty – We purchased a property reinsurance treaty that provides an additional $50 million in protection for property losses. This treaty, along with the property per risk treaty, provides a total of $100 million of protection. The 2019 ceded premium estimate was approximately $2 million, essentially unchanged from the 2018 estimate.
- Casualty per occurrence treaty – The casualty treaty provides capacity up to $25 million. Similar to the property treaty, it provides sufficient capacity to cover the vast majority of casualty accounts we insure and also includes protection for extra-contractual liability coverage losses. We retain the first $10 million of each loss. Losses between $10 million and $25 million are reinsured at 100 percent. The 2019 ceded premium estimate was $12 million, essentially unchanged from the 2018 estimate.
- Casualty excess treaty – We purchase a casualty reinsurance treaty that provides an additional $45 million in protection for certain casualty losses. This treaty, along with the casualty per occurrence treaty, provides a total of $70 million of protection for workers' compensation, extra-contractual liability coverage and clash coverage losses, which would apply when a single occurrence involves multiple policyholders of The Cincinnati Insurance Companies or multiple coverages for one insured. The 2019 ceded premium estimate was approximately $3 million, essentially unchanged from the 2018 estimate.
- Property catastrophe treaty – To protect against catastrophic events such as wind and hail, hurricanes or earthquakes, we purchased property catastrophe reinsurance with a limit up to $600 million. Losses from the same occurrence can now be aggregated into one limit over a 120-hour period and applied to the treaty towards recovery. The treaty contains one reinstatement provision. The 2019 ceded premium estimate was $43 million, essentially unchanged from the 2018 estimate. We retain the first $100 million of any loss, and a share of losses up to $600 million, as indicated below:

5.0 percent of losses between $100 million and $200 million
5.0 percent of losses between $200 million and $300 million
5.0 percent of losses between $300 million and $400 million
5.0 percent of losses between $400 million and $600 million

- Beginning in 2018, effective July 1, we added a new component to our property casualty reinsurance program, a property catastrophe occurrence and aggregate excess of loss treaty providing coverage not to exceed $50 million in aggregate. Key coverages include $50 million in excess of net $125 million per occurrence combining business written on a direct basis and by Cincinnati Re, $25 million in excess of $32 million for the aggregation of Cincinnati Re catastrophe occurrences subject to certain deductibles, $50 million in excess of $10 million for business written on a direct basis for the loss perils of earthquake, brushfire and wildfire in certain western states, or various combinations of occurrences with coverage up to the $50 million aggregate limit. The aggregate limit is $25 million if covered losses pertain only to Cincinnati Re. Ceded premiums for the first year of coverage from this treaty are estimated to be approximately $7 million.
- Beginning in 2013 we added an alternative reinsurance structure to protect against certain catastrophic events, and a similar structure is in place for 2017 through 2019. For certain exposures in the United States, we arranged for the purchase of collateralized reinsurance funded through the issuance of collateralized risk-linked securities, known as catastrophe bonds with Skyline Re Ltd ("Skyline"). The catastrophe bond arrangements generally provide reinsurance coverage for specific types of losses in specific geographic locations. They are generally designed to supplement coverage provided under the property catastrophe treaty. Effective January 2017, we have a catastrophe bond arrangement providing up to $200 million in earthquake reinsurance protection or $80 million in severe convective storm coverage or various combinations of those coverages. It expires in January 2020 and meets the requirements to be accounted for as reinsurance in accordance with the guidance for reinsurance contracts. The earthquake coverage is countrywide, excluding California, and the severe convective storm coverage territory is also countrywide, excluding Florida. The storm coverage provides loss recovery when storm losses for all events in aggregate exceed $190 million, after an $8 million deductible per event.

After reinsurance, and before any applicable benefit from our catastrophe bond, our maximum exposure to a catastrophic event that causes $600 million in covered losses in 2019 would be $125 million, matching our retention for 2018. The largest catastrophe loss event in our history occurred during 2011 from a May 20-27 storm system that included a tornado in Joplin, Missouri, and also significant losses from hail in the Dayton, Ohio, area. Our losses from that storm were estimated at December 31, 2017, to be $226 million before reinsurance.

Individual risks with insured values in excess of $100 million, as identified in the policy, are handled through a different reinsurance mechanism. We typically reinsure property coverage for individual risks with insured values between $100 million and $200 million under an automatic facultative agreement. For risks with property values exceeding $200 million, we negotiate the purchase of facultative coverage on an individual certificate basis.
For casualty coverage on individual risks with limits exceeding $25 million, facultative reinsurance coverage is placed on an individual certificate basis. For risks with casualty limits that are between $25 million and $27 million, we sometimes forego facultative reinsurance and retain an additional $2 million of loss exposure.

Terrorism coverage at various levels has been secured in most of our reinsurance agreements. The broadest coverage for this peril is found in the property and casualty working treaties, the property per risk treaty and the casualty per occurrence treaty, which provide coverage for commercial and personal risks. Our property catastrophe treaty provides terrorism coverage for personal risks, and coverage for commercial risks with total insured values of $15 million or less. For insured values between $15 million and $100 million, there also may be coverage in the property working treaty.

A form of reinsurance is also provided through The Terrorism Risk Insurance Act of 2002 (TRIA). TRIA was originally signed into law on November 26, 2002, and extended on several occasions, including the most recent extension on January 12, 2015. TRIA provides a temporary federal backstop for losses related to the writing of the terrorism peril in property casualty insurance policies. Under regulations promulgated under this statute, insurers are required to offer terrorism coverage for certain lines of property casualty insurance, including property, commercial multi-peril, fire, ocean marine, inland marine, liability, aircraft and workers' compensation. In the event of a terrorism event defined by TRIA, the federal government would reimburse terrorism claim payments subject to the insurer's deductible. The deductible is calculated as a percentage of subject written premiums for the preceding calendar year. Our deductible in 2018 was $541 million (20 percent of 2017 subject premiums), and we estimate it is $551 million (20 percent of 2018 subject premiums) for 2019.

Reinsurance protection for the company's surety business is covered under a separate treaty with many of the same reinsurers that write the property casualty working treaties.

The Cincinnati Specialty Underwriters Insurance Company has separate property and casualty reinsurance treaties for 2018 through its parent, The Cincinnati Insurance Company. Primary components of the treaties include:

- Property per risk treaty – The property treaty provides limits up to $5 million, which is adequate capacity for the risk profile we insure. It also includes protection for extra-contractual liability coverage losses. Cincinnati Specialty Underwriters retains the first $1 million of any policy loss. Losses between $1 million and $5 million are reinsured at 100 percent by The Cincinnati Insurance Company.
- Casualty treaties – The casualty treaty is written on an excess of loss basis and provide limits up to $6 million, which is adequate capacity for the risk profile we insure. A second treaty layer of $5 million excess of $6 million is written to provide coverage for extra contractual obligations or clash exposures. The maximum retention for any one casualty loss is $1 million by Cincinnati Specialty Underwriters. Losses between $1 million and $6 million are reinsured at 100 percent by The Cincinnati Insurance Company.
- Basket retention – Cincinnati Specialty Underwriters has purchased this coverage to limit our retention to $1 million in the event that the same occurrence results in both a property and a casualty loss.
-

Property catastrophe treaty – As a subsidiary of The Cincinnati Insurance Company, Cincinnati Specialty Underwriters is a named insured under our corporate property catastrophe treaty, and for our collateralized reinsurance funded through the issuance of catastrophe bonds. All terms and conditions of this reinsurance coverage apply to policies underwritten by Cincinnati Specialty Underwriters.

For property risks with limits exceeding $5 million or casualty risks with limits exceeding $6 million, underwriters place facultative reinsurance coverage on an individual certificate basis.

Cincinnati Life, our life insurance subsidiary, purchases reinsurance under separate treaties with many of the same reinsurers that write the property casualty working treaties. Our corporate retention is $1 million on a single life. For most of our core term life insurance line of business, we retain no more than a $500,000 exposure on a single policy, ceding the balance using excess over retention mortality coverage, and retaining the policy reserve. Because of the conservative nature of statutory reserving principles, retaining the policy reserve unduly depresses our statutory earnings and requires a large commitment of our capital. Effective November 1, 2015, we increased our retention to $1 million for issue ages up to 61 years on new term life insurance sales. For issue ages 61 years or older, our retention remains $500,000. For term life insurance business written prior to 2005, we retain 10 percent to 25 percent of each term policy, not to exceed $500,000, ceding the balance of mortality risk and policy reserve.

We also have catastrophe reinsurance coverage on our life insurance operations that reimburses us for covered net losses in excess of $12 million. Our recovery is capped at $75 million for losses involving our associates.

The following table shows our five largest life reinsurance receivable amounts by reinsurer at year-end 2018 and 2017. The A.M. Best insurer financial strength ratings are also shown.

(Dollars in millions)	2018		2017	
Name of reinsurer	Total receivable	A.M. Best Rating	Total receivable	A.M. Best Rating
Swiss Re Life & Health America, Inc.	$83	A+	$80	A+
General Re Life Corporation	38	A++	35	A++
Lincoln National Life Insurance Company	37	A+	38	A+
Security Life of Denver Insurance Company	27	A	27	A u
Pacific Life Insurance Company	14	A+	14	A+

Safe Harbor Statement

This is our "Safe Harbor" statement under the Private Securities Litigation Reform Act of 1995. Our business is subject to certain risks and uncertainties that may cause actual results to differ materially from those suggested by the forward-looking statements in this report. Some of those risks and uncertainties are discussed in Item 1A, Risk Factors.

Factors that could cause or contribute to such differences include, but are not limited to:

- The fact that the consummation of the transaction to acquire MSP Underwriting Ltd. and its subsidiaries is subject to closing conditions, one or more of which may not be satisfied, or that the transaction is not consummated for any other reason
- Our inability to integrate MSP and its subsidiaries into our on-going operations, or disruptions to our on-going operations due to such integration
- Unusually high levels of catastrophe losses due to risk concentrations, changes in weather patterns, environmental events, terrorism incidents or other causes
- Increased frequency and/or severity of claims or development of claims that are unforeseen at the time of policy issuance
- Inadequate estimates, assumptions or reliance on third-party data used for critical accounting estimates
- Declines in overall stock market values negatively affecting the company's equity portfolio and book value
- Prolonged low interest rate environment or other factors that limit the company's ability to generate growth in investment income or interest rate fluctuations that result in declining values of fixed-maturity investments, including declines in accounts in which we hold bank-owned life insurance contract assets
- Domestic and global events resulting in capital market or credit market uncertainty, followed by prolonged periods of economic instability or recession, that lead to:

Significant or prolonged decline in the fair value of a particular security or group of securities and impairment of the asset(s)

Significant decline in investment income due to reduced or eliminated dividend payouts from a particular security or group of securities

Significant rise in losses from surety and director and officer policies written for financial institutions or other insured entities

- Recession or other economic conditions resulting in lower demand for insurance products or increased payment delinquencies
- Difficulties with technology or data security breaches, including cyberattacks, that could negatively affect our ability to conduct business; disrupt our relationships with agents, policyholders and others; cause reputational damage, mitigation expenses and data loss and expose us to liability under federal and state laws
- Disruption of the insurance market caused by technology innovations such as driverless cars that could decrease consumer demand for insurance products
- Delays, inadequate data developed internally or from third parties, or performance inadequacies from ongoing development and implementation of underwriting and pricing methods, including telematics and other usage-based insurance methods, or technology projects and enhancements expected to increase our pricing accuracy, underwriting profit and competitiveness
- Increased competition that could result in a significant reduction in the company's premium volume
- Changing consumer insurance-buying habits and consolidation of independent insurance agencies that could alter our competitive advantages
- Inability to obtain adequate ceded reinsurance on acceptable terms, amount of reinsurance coverage purchased, financial strength of reinsurers and the potential for nonpayment or delay in payment by reinsurers
- Inability to defer policy acquisition costs for any business segment if pricing and loss trends would lead management to conclude that segment could not achieve sustainable profitability

- Inability of our subsidiaries to pay dividends consistent with current or past levels
- Events or conditions that could weaken or harm the company's relationships with its independent agencies and hamper opportunities to add new agencies, resulting in limitations on the company's opportunities for growth, such as:
  - Downgrades of the company's financial strength ratings
  - Concerns that doing business with the company is too difficult
  - Perceptions that the company's level of service, particularly claims service, is no longer a distinguishing characteristic in the marketplace
  - Inability or unwillingness to nimbly develop and introduce coverage product updates and innovations that our competitors offer and consumers expect to find in the marketplace
- Actions of insurance departments, state attorneys general or other regulatory agencies, including a change to a federal system of regulation from a state-based system, that:
  - Impose new obligations on us that increase our expenses or change the assumptions underlying our critical accounting estimates
  - Place the insurance industry under greater regulatory scrutiny or result in new statutes, rules and regulations
  - Restrict our ability to exit or reduce writings of unprofitable coverages or lines of business
  - Add assessments for guaranty funds, other insurance related assessments or mandatory reinsurance arrangements; or that impair our ability to recover such assessments through future surcharges or other rate changes
  - Increase our provision for federal income taxes due to changes in tax law
  - Increase our other expenses
  - Limit our ability to set fair, adequate and reasonable rates
  - Place us at a disadvantage in the marketplace
  - Restrict our ability to execute our business model, including the way we compensate agents
- Adverse outcomes from litigation or administrative proceedings
- Events or actions, including unauthorized intentional circumvention of controls, that reduce the company's future ability to maintain effective internal control over financial reporting under the Sarbanes-Oxley Act of 2002
- Unforeseen departure of certain executive officers or other key employees due to retirement, health or other causes that could interrupt progress toward important strategic goals or diminish the effectiveness of certain longstanding relationships with insurance agents and others
- Events, such as an epidemic, natural catastrophe or terrorism, that could hamper our ability to assemble our workforce at our headquarters location

Further, the company's insurance businesses are subject to the effects of changing social, global, economic and regulatory environments. Public and regulatory initiatives have included efforts to adversely influence and restrict premium rates, restrict the ability to cancel policies, impose underwriting standards and expand overall regulation. The company also is subject to public and regulatory initiatives that can affect the market value for its common stock, such as measures affecting corporate financial reporting and governance. The ultimate changes and eventual effects, if any, of these initiatives are uncertain.

ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk

Introduction

Market risk is the potential for a decrease in securities value resulting from broad yet uncontrollable forces such as inflation, economic growth, interest rates, world political conditions or other widespread unpredictable events. It is comprised of many individual risks that, when combined, create a macroeconomic impact. The company accepts and manages risks in its investment portfolio as part of the means of achieving portfolio objectives. Some of the risks are:

- Political – the potential for a decrease in value due to the real or perceived impact of governmental policies or conditions
- Regulatory – the potential for a decrease in value due to the impact of legislative proposals or changes in laws or regulations
- Economic – the potential for a decrease in value due to changes in general economic factors (recession, inflation, deflation, etc.)
- Revaluation – the potential for a decrease in value due to a change in relative value (change in market multiple) of the market brought on by general economic factors
- Interest-rate – the potential for a decrease in value of a security or portfolio due to its sensitivity to changes (increases or decreases) in the general level of interest rates

Company-specific risk is the potential for a particular issuer to experience a decline in value due to the impact of sector or market risk on the holding or because of issues specific to the firm:

- Fraud – the potential for a negative impact on an issuer's performance due to actual or alleged illegal or improper activity of individuals it employs
- Credit – the potential for deterioration in an issuer's financial profile due to specific company issues, problems it faces in the course of its operations or industry-related issues
- Default – the possibility that an issuer will not make a required payment (interest payment or return of principal) on its debt. Generally this occurs after its financial profile has deteriorated (credit risk) and it no longer has the means to make its payments

The investment committee of the board of directors monitors the investment risk management process primarily through its executive oversight of our investment activities. We take an active approach to managing market and other investment risks, including the accountabilities and controls over these activities. Actively managing these market risks is integral to our operations and could require us to change the character of future investments purchased or sold or require us to shift the existing asset portfolios to manage exposure to market risk within acceptable ranges.

Sector risk is the potential for a negative impact on a particular industry due to its sensitivity to factors that make up market risk. Market risk affects general supply or demand factors for an industry and affects companies within that industry to varying degrees.

Risks associated with the asset classes described in Item 1, Our Segments, Investments Segment, can be summarized as follows (H – high, A – average, L – low):

	Taxable fixed maturities	Tax-exempt fixed maturities	Common equities	Nonredeemable preferred equities
Political	A	H	A	A
Regulatory	A	A	A	A
Economic	A	A	H	A
Revaluation	A	A	H	A
Interest rate	H	H	A	H
Fraud	A	L	A	A
Credit	A	L	A	A
Default	A	L	A	A

Fixed-Maturity Securities Investments

For investment-grade corporate bonds, the inverse relationship between interest rates and bond prices leads to falling bond values during periods of increasing interest rates. We address this risk by attempting to construct a generally laddered maturity schedule that allows us to reinvest cash flows at prevailing rates. Although the potential for a worsening financial condition, and ultimately default, does exist with investment-grade corporate bonds, we address this risk by performing credit analysis and monitoring as well as maintaining a diverse portfolio of holdings.

The primary risk related to high-yield corporate bonds is credit risk. A weak financial profile can lead to rating downgrades from the credit rating agencies, which can put further downward pressure on bond prices. Interest rate risk, while significant, is less of a factor with high-yield corporate bonds, as valuation is related more directly to underlying operating performance than to general interest rates. This puts more emphasis on the financial results achieved by the issuer rather than on general economic trends or statistics within the marketplace. We address this concern by analyzing issuer- and industry-specific financial results and by closely monitoring holdings within this asset class.

The primary risks related to tax-exempt bonds are interest rate risk and political risk associated with the specific economic environment within the political boundaries of the issuing municipal entity. We address these concerns by focusing on municipalities' general-obligation debt and on essential-service bonds. Essential-service bonds derive a revenue stream from municipal services that are vital to the people living in the area (water service, sewer service, etc.). Another risk related to tax-exempt bonds is regulatory risk or the potential for legislative changes that would negate the benefit of owning tax-exempt bonds. We monitor regulatory activity for situations that may negatively affect current holdings and our ongoing strategy for investing in these securities.

The final, less significant risk is our exposure to credit risk for a portion of the tax-exempt portfolio that has support from corporate entities. Examples are bonds insured by corporate bond insurers or bonds with interest payments made by a corporate entity through a municipal conduit or authority. Our decisions regarding these investments primarily consider the underlying municipal situation. The existence of third-party insurance is intended to reduce risk in the event of default. In circumstances in which the municipality is unable to meet its obligations, risk would be increased if the insuring entity were experiencing financial duress. Because of our diverse exposure and selection of higher-rated entities with strong financial profiles, we do not believe this is a material concern as we discuss in Item 1, Our Segments, Investments Segment.

Interest Rate Sensitivity Analysis

Because of our strong shareholders' equity, long-term investment horizon and ability to hold most fixed-maturity investments to maturity, we believe the company is well positioned if interest rates were to rise. A higher rate environment would provide the opportunity to invest cash flow in higher-yielding securities, while reducing the likelihood of untimely redemptions of currently callable securities. While higher interest rates would be expected to increase the number of fixed-maturity holdings fair valued below 100 percent of amortized cost, we believe lower fixed-maturity security values due solely to interest rate changes would not signal a decline in credit quality.

Our dynamic financial planning model uses analytical tools to assess market risks. As part of this model, the effective duration of the fixed-maturity portfolio is continually monitored by our investment department to evaluate the theoretical impact of interest rate movements.

The table below summarizes the effect of hypothetical changes in interest rates on fair value of our fixed-maturity portfolio.

(Dollars in millions)	Effect from interest rate change in basis points				
	-200	-100	—	100	200

At December 31, 2018	$11,793	$11,245	$10,689	$10,121	$9,576
At December 31, 2017	$11,803	$11,249	$10,699	$10,133	$9,589

The effective duration of the fixed-maturity portfolio was 5.2 years at year-end 2018, matching year-end 2017. A 100-basis-point movement in interest rates would result in an approximately 5.3 percent change in the fair value of the fixed-maturity portfolio. Generally speaking, the higher a bond is rated, the more directly correlated movements in its fair value are to changes in the general level of interest rates, exclusive of call features. The fair values of average- to lower-rated corporate bonds are additionally influenced by the expansion or contraction of credit spreads.

In the dynamic financial planning model, the selected interest rate change of 100 to 200 basis points represents our views of a shift in rates that is quite possible over a one-year period. The rates modeled should not be considered a prediction of future events as interest rates may be much more volatile in the future. The analysis is not intended to provide a precise forecast of the effect of changes in rates on our results or financial condition, nor does it take into account any actions that we might take to reduce exposure to such risks.

Equity Securities Investments

Our equity portfolio is subject to a variety of risk factors encompassed under the umbrella of market risk. General economic swings influence the performance of the underlying industries and companies within those industries. Industry- and company-specific risks also have the potential to substantially affect the value of our portfolio. Our investment guidelines help address these risks by diversifying the portfolio and establishing parameters to help manage exposures.

The table below summarizes the effect of hypothetical changes in market prices on fair value of our equity portfolio.

(Dollars in millions)	Effect from market price change in percent						
	-30%	-20%	-10%	—	10%	20%	30%
At December 31, 2018	$4,144	$4,736	$5,328	$5,920	$6,512	$7,104	$7,696
At December 31, 2017	$4,374	$4,999	$5,624	$6,249	$6,874	$7,499	$8,124

Our equity holdings represented $5.920 billion in fair value and accounted for approximately 98 percent of the net unrealized gains and losses of the entire portfolio at year-end 2018. No holding had a fair value greater than 4.5 percent of our $5.742 billion publicly traded common stock portfolio. We had 23 holdings among eight different sectors each with a fair value greater than $100 million. See Item 1, Our Segments, Investments Segment and Item 8, Note 2 of the Consolidated Financial Statements, for additional details on our holdings.

The primary risks related to preferred stocks are similar to those related to investment-grade corporate bonds. Rising interest rates adversely affect market values due to the normal inverse relationship between interest rates and bond prices. Credit risk exists due to the subordinate position of preferred stocks in the capital structure. We minimize this risk by primarily purchasing investment-grade preferred stocks of issuers with a strong history of paying a common stock dividend.

Application of Asset Impairment Policy

As discussed in Item 7, Critical Accounting Estimates, Asset Impairment, our fixed-maturity investment portfolio is evaluated for other-than-temporary impairments. The company's asset impairment committee monitors a number of significant factors for indications of investments with a fair value below the carrying amount that may not be recoverable. The application of our impairment policy resulted in OTTI charges that reduced our income before income taxes by $5 million in 2018, $9 million in 2017 and $2 million in 2016. Impairments are discussed in Item 7, Investments Results.

We expect the number of fixed-maturity securities with a fair value below 100 percent of amortized cost to fluctuate as interest rates rise or fall and credit spreads expand or contract due to prevailing economic conditions. Further, cost or amortized cost for some securities have been revised due to impairment charges recognized in prior periods.
At year-end 2018, 1,262 of the 3,606 fixed-maturity securities we owned had a fair value below 100 percent of cost or amortized cost compared with 440 of the 3,598 fixed-maturity and equity securities we owned at year-end 2017 and 784 of the 3,315 fixed-maturity and equity securities we owned at year-end 2016.

The 1,262 holdings fair valued below cost or amortized cost at year-end 2018 represented 39.1 percent of our fixed-maturity portfolio and $128 million in unrealized losses.

- 1,233 of these holdings were fair valued between 90 percent and 100 percent of cost or amortized cost. The value of these securities fluctuates primarily because of changes in interest rates. The fair value of these 1,233 securities was $4.069 billion at year-end 2018, and they accounted for $106 million in unrealized losses.
- 29 of these holdings were fair valued between 70 percent and 90 percent of cost or amortized cost. The fair value of these holdings was $111 million, and they accounted for $22 million in unrealized losses.
- No fixed-maturity securities had a fair value below 70 percent of cost or amortized cost.

The following table summarizes the length of time securities in the investment portfolio have been in a continuous unrealized loss position.

(Dollars in millions)	Less than 12 months		12 months or more		Total	
At December 31, 2018	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
Fixed maturity securities:						
Corporate	$ 2,082	$ 51	$ 501	$ 36	$2,583	$ 87
States, municipalities and political subdivisions	823	18	340	13	1,163	31
Commercial mortgage-backed	77	—	64	2	141	2
Government-sponsored enterprises	49	1	211	6	260	7
United States government	—	—	33	1	33	1
Total	$ 3,031	$ 70	$ 1,149	$ 58	$4,180	$ 128
At December 31, 2017						
Fixed maturity securities:						
Corporate	$ 330	$ 4	$ 252	$ 9	$582	$ 13
States, municipalities and political subdivisions	88	1	264	5	352	6
Commercial mortgage-backed	33	—	36	1	69	1
Government-sponsored enterprises	96	1	124	3	220	4
Foreign government	10	—	—	—	10	—
United States government	23	—	6	—	29	—
Subtotal	580	6	682	18	1,262	24
Equity securities:						
Common equities	229	14	—	—	229	14
Subtotal	229	14	—	—	229	14
Total	$ 809	$ 20	$ 682	$ 18	$1,491	$ 38

The following table summarizes and classifies securities based on fair values relative to cost or amortized cost:

(Dollars in millions)	Number of issues	Cost or amortized cost	Fair value	Gross unrealized gain (loss)	Gross investment income
At December 31, 2018					
Taxable fixed maturities:					
Fair valued below 70% of amortized cost	—	$ —	$—	$ —	$ —
Fair valued at 70% to less than 100% of amortized cost	720	3,228	3,129	(99)	114
Fair valued at 100% and above of amortized cost	897	3,692	3,797	105	183
Investment income on securities sold in current year	—	—	—	—	19
Total	1,617	6,920	6,926	6	316
Tax-exempt fixed maturities:					
Fair valued below 70% of amortized cost	—	—	—	—	—
Fair valued at 70% to less than 100% of amortized cost	542	1,080	1,051	(29)	33
Fair valued at 100% and above of amortized cost	1,447	2,643	2,712	69	86
Investment income on securities sold in current year	—	—	—	—	9
Total	1,989	3,723	3,763	40	128
Fixed-maturities summary:					
Fair valued below 70% of cost or amortized cost	—	—	—	—	—
Fair valued at 70% to less than 100% of cost or amortized cost	1,262	4,308	4,180	(128)	147
Fair valued at 100% and above of cost or amortized cost	2,344	6,335	6,509	174	269
Investment income on securities sold in current year	—	—	—	—	28
Total	3,606	$ 10,643	$10,689	$ 46	$ 444
At December 31, 2017					
Portfolio summary:					
Fair valued below 70% of cost or amortized cost	—	$ —	$—	$ —	$ —
Fair valued at 70% to less than 100% of cost or amortized cost	440	1,529	1,491	(38)	37
Fair valued at 100% and above of cost or amortized cost	3,158	11,879	15,457	3,578	533
Investment income on securities sold in current year	—	—	—	—	45
Total	3,598	$ 13,408	$16,948	$ 3,540	$ 615

ITEM 8. Financial Statements and Supplementary Data

Responsibility for Financial Statements
We have prepared the consolidated financial statements of Cincinnati Financial Corporation and our subsidiaries for the year ended December 31, 2018, in accordance with accounting principles generally accepted in the United States of America (GAAP).

We are responsible for the integrity and objectivity of these financial statements. The amounts, presented on an accrual basis, reflect our best estimates and judgment. These statements are consistent in all material aspects with other financial information in the Annual Report on Form 10-K. Our accounting system and related internal controls are designed to assure that our books and records accurately reflect the company's transactions in accordance with established policies and procedures as implemented by qualified personnel.

Our board of directors has established an audit committee of independent outside directors. We believe these directors are free from any relationships that could interfere with their independent judgment as audit committee members.

The audit committee meets periodically with management, our independent registered public accounting firm and our internal auditors to discuss how each is handling its respective responsibilities. The audit committee reports its findings to the board of directors. The audit committee recommends to the board the annual appointment of the independent registered public accounting firm. The audit committee reviews with this firm the scope of the audit assignment and the adequacy of internal controls and procedures.

Deloitte & Touche LLP, our independent registered public accounting firm, audited the consolidated financial statements of Cincinnati Financial Corporation and subsidiaries for the year ended December 31, 2018. Deloitte & Touche LLP met with our audit committee to discuss the results of its examination. They have the opportunity to discuss the adequacy of internal controls and the quality of financial reporting without management present.

Management's Annual Report on Internal Control Over Financial Reporting

The management of Cincinnati Financial Corporation and its subsidiaries is responsible for establishing and maintaining adequate internal controls, designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America (GAAP). The company's internal control over financial reporting includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP and that receipts and expenditures of the company are being made only in accordance with authorizations of management and the directors of the company; and
- 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.

All internal control systems, no matter how well designed, have inherent limitations, including the possibility of human error and the circumvention of overriding controls. Accordingly, even effective internal control can provide only reasonable assurance with respect to financial statement preparation and presentation. Further, because of changes in conditions, the effectiveness of internal control may vary over time.

The company's management assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2018, as required by Section 404 of the Sarbanes Oxley Act of 2002. Management's assessment was based on the criteria established in the Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and was designed to provide reasonable assurance that the company maintained effective internal control over financial reporting as of December 31, 2018. The assessment led management to conclude that, as of December 31, 2018, the company's internal control over financial reporting was effective based on those criteria.

The company's independent registered public accounting firm has issued an audit report on our internal control over financial reporting as of December 31, 2018.

/S/ Steven J. Johnston
Steven J. Johnston, FCAS, MAAA, CFA, CERA
President and Chief Executive Officer

/S/ Michael J. Sewell
Michael J. Sewell, CPA
Chief Financial Officer, Senior Vice President and Treasurer
(Principal Accounting Officer)

February 22, 2019

Report of Independent Registered Public Accounting Firm
To the Shareholders and Board of Directors of Cincinnati Financial Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting
We have audited the accompanying consolidated balance sheets of Cincinnati Financial Corporation and subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and the schedules listed in the Index at Item 15(c) (collectively referred to as the "financial statements"). We also have audited the Company’s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by COSO.

Change in Accounting Principle
As discussed in Note 1 to the financial statements, the Company adopted Accounting Standards Update No. 2016-01, Financial Instruments - Overall (Subtopic 825-10) - Recognition and Measurement of Financial Assets and Liabilities, using the modified retrospective approach on January 1, 2018.

Basis for Opinions
The Company’s management is responsible for these financial statements, 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 these financial statements and an opinion on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/S/ DELOITTE & TOUCHE LLP
Cincinnati, Ohio
February 22, 2019

We have served as the Company's auditor since 1980.

Cincinnati Financial Corporation and Subsidiaries
Consolidated Balance Sheets

(Dollars in millions, except per share data)	December 31, 2018	December 31, 2017
Assets		
Investments		
Fixed maturities, at fair value (amortized cost: 2018—$10,643; 2017—$10,314)	$ 10,689	$ 10,699
Equity securities, at fair value (cost: 2018—$3,368; 2017—$3,094)	5,920	6,249
Other invested assets	123	103
Total investments	16,732	17,051
Cash and cash equivalents	784	657
Investment income receivable	132	134
Finance receivable	71	61
Premiums receivable	1,644	1,589
Reinsurance recoverable	484	432
Prepaid reinsurance premiums	44	42
Deferred policy acquisition costs	738	670
Land, building and equipment, net, for company use (accumulated depreciation: 2018—$265; 2017—$253)	195	185
Other assets	308	216
Separate accounts	803	806
Total assets	$ 21,935	$ 21,843
Liabilities		
Insurance reserves		
Loss and loss expense reserves	$ 5,707	$ 5,273
Life policy and investment contract reserves	2,779	2,729
Unearned premiums	2,516	2,404
Other liabilities	804	792
Deferred income tax	627	745
Note payable	32	24
Long-term debt and capital lease obligations	834	827
Separate accounts	803	806
Total liabilities	14,102	13,600
Commitments and contingent liabilities (Note 16)	—	—
Shareholders' Equity		
Common stock, par value—$2 per share; (authorized: 2018 and 2017—500 million shares; issued: 2018 and 2017—198.3 million shares)	397	397
Paid-in capital	1,281	1,265
Retained earnings	7,625	5,180
Accumulated other comprehensive income	22	2,788
Treasury stock at cost (2018—35.5 million shares and 2017—34.4 million shares)	(1,492)	(1,387)
Total shareholders' equity	7,833	8,243
Total liabilities and shareholders' equity	$ 21,935	$ 21,843

Accompanying Notes are an integral part of these Consolidated Financial Statements.

Cincinnati Financial Corporation and Subsidiaries
Consolidated Statements of Income

(Dollars in millions, except per share data)	Years ended December 31,		
	2018	2017	2016
Revenues			
Earned premiums	$5,170	$4,954	$4,710
Investment income, net of expenses	619	609	595
Investment gains and losses, net	(402)	148	124
Fee revenues	15	16	15
Other revenues	5	5	5
Total revenues	5,407	5,732	5,449
Benefits and Expenses			
Insurance losses and contract holders' benefits	3,490	3,390	3,107
Underwriting, acquisition and insurance expenses	1,597	1,546	1,465
Interest expense	53	53	53
Other operating expenses	16	13	12
Total benefits and expenses	5,156	5,002	4,637
Income Before Income Taxes	251	730	812
Provision (Benefit) for Income Taxes			
Current	11	129	183
Deferred	(47)	(444)	38
Total provision (benefit) for income taxes	(36)	(315)	221
Net Income	$287	$1,045	$591
Per Common Share			
Net income—basic	$1.76	$6.36	$3.59
Net income—diluted	1.75	6.29	3.55

Accompanying Notes are an integral part of these Consolidated Financial Statements.

Cincinnati Financial Corporation and Subsidiaries
Consolidated Statements of Comprehensive Income

(Dollars in millions)	Years ended December 31,		
	2018	2017	2016
Net Income	$287	$1,045	$591
Other Comprehensive Income (Loss)			
Change in unrealized gains and losses on investments, net of tax (benefit) of $(72), $317 and $186, respectively	(267)	598	345
Amortization of pension actuarial gains and losses and prior service cost, net of tax (benefit) of $(1), $7 and $6, respectively	(3)	7	10
Change in life deferred acquisition costs, life policy reserves and other, net of tax (benefit) of $2, $1 and $(4), respectively	7	(2)	(6)
Other comprehensive income (loss)	(263)	603	349
Comprehensive Income	$24	$1,648	$940

Accompanying Notes are an integral part of these Consolidated Financial Statements.

Cincinnati Financial Corporation and Subsidiaries
Consolidated Statements of Shareholders' Equity