



radian

2019 Annual Report

OUR CORE VALUES

AT RADIAN, OUR CULTURE IS BUILT AROUND A SET OF CORE ORGANIZATIONAL VALUES THAT WE LIVE BY, AND DEFINE WHO WE ARE AS AN ENTERPRISE



Deliver the Brand Promise

We are a customer-centric enterprise striving to be the market leading brand as defined by our customers.



Our People are the Difference

We recognize that our people make the difference in our franchise.



Innovate for the Future

We embrace innovative technologies to strategically differentiate the delivery of our products and services.



Do What's Right

We will always do the right thing, without compromise.



Create Shareholder Value

We build long-term shareholder value through sustainable growth and profitability.



Partner to Win

We recognize that we cannot reach our goals alone, so we will develop intelligent strategic alliances with best in class partners.

Radian Group Inc. is a diversified mortgage and real estate services business. We provide mortgage insurance and products and services to the real estate and mortgage finance industries. The company is listed on the New York Stock Exchange under the symbol RDN.



CHIEF EXECUTIVE OFFICER'S LETTER TO OUR STOCKHOLDERS

As a diversified mortgage and real estate services business, our products and services have responsibly helped millions of families achieve their dream of homeownership in a sustainable way for nearly 45 years. Today, we are powered by technology, informed by data and driven to deliver new and better ways to manage mortgage risk and execute mortgage and real estate transactions.

During our first full year of operating under our *ONE Radian* brand in 2019, we continued the strategic transformation of our mortgage insurance business model, our real estate businesses and our capital structure. Our excellent results were driven by the hard work of the entire Radian team across the company, as well as the support of our customers, investors, business partners and Board of Directors.

(continued on the next page)

I AM PLEASED TO SHARE SOME OF THE HIGHLIGHTS FROM ANOTHER OUTSTANDING YEAR:



We wrote \$71 billion of flow new mortgage insurance written, which set a company record for the highest flow volume in our company's history. This marked our fourth consecutive year of record-breaking annual volume.



We grew our primary insurance in force by 9% year-over-year to \$241 billion. Our mortgage insurance portfolio, which is one of the largest in our industry, is the primary driver of future earnings for our company.



We strategically transformed our mortgage insurance pricing approach through the roll-out of RADAR® Rates combined with other innovative pricing structures. Our focus is on meeting the needs of our customers balanced with maximizing the economic value of our mortgage insurance portfolio.



We continued to strategically transform our mortgage insurance business from a *buy and hold* model to an *aggregate, manage and distribute* model, lowering the risk profile and potential through-the-cycle volatility of the business through the use of mortgage insurance-linked notes and quota share reinsurance.



For our Services segment, we reported total revenues for the full year 2019 of \$170 million, a 9% increase compared to 2018. Consistent with the strategic positioning of these businesses and our focus on our core products and capabilities, which include title, valuation, asset management and other digital real estate services, we sold Clayton Services in early 2020.



We took several steps during the year to optimize our capital and liquidity position, including by

- returning \$375 million in capital from Radian Guaranty to Radian Group;
- repurchasing 13.5 million shares of Radian Group common stock, returning \$300 million to stockholders; and
- reducing our total debt outstanding, lowering our cost of financing and improving our debt maturity profile.



We received an upgrade by Moody's Investors Service to the senior unsecured debt rating of Radian Group to Ba1 from Ba2.



For the second consecutive year we earned a position on the Bloomberg Gender-Equality Index for our commitment to supporting gender equality across the organization.



To further underscore our commitment to our stakeholders and employees, we launched formal programs for Environmental, Social and Governance (ESG) and for Inclusion and Diversity.

“I am proud of all that we accomplished in 2019. We made significant progress by strategically transforming our business.”

In terms of our 2019 financial performance:

We earned net income of \$672 million, or \$3.20 per diluted share, in 2019, compared to \$606 million, or \$2.77 per diluted share, in 2018. Net income for 2019 included a pretax gain on investments and other financial instruments of \$51.7 million, compared to net losses of \$42.5 million in 2018. Additionally, net income for the full year 2018 included the impact of tax benefits of \$73.6 million, reflecting both the impact of our settlement with the IRS as well as the reversal of certain previously accrued state and local tax liabilities.

Adjusted pretax operating income* for 2019 was \$855 million, or adjusted diluted net operating income per share* of \$3.21, compared to adjusted pretax operating income* of \$746 million, or adjusted diluted net operating income per share* of \$2.69, for 2018.

Book value per share grew to \$20.13 at December 31, 2019, an increase of 23% compared to \$16.34 at December 31, 2018.

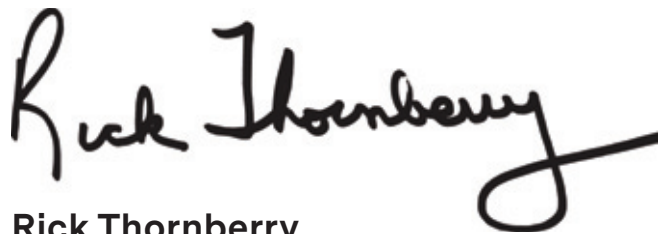
Return on equity was 17.8% for the year ended December 31, 2019, compared to 18.7% for the year ended December 31, 2018.

With regard to PMIERS, in 2019 we successfully increased Radian Guaranty's excess of Available Assets over our Minimum Required Assets to \$804 million, which represents a cushion of 28% as of December 31, 2019.

In terms of credit quality, 95% of our primary mortgage insurance risk in force consists of business written in the strong underwriting years after 2008.

For our real estate services, we made progress throughout 2019 in focusing on our core products and capabilities through a data-driven, digital transformation that has come to define our *ONE Radian* strategy.

I am proud of all that we accomplished in 2019. We made significant progress by strategically transforming our business with a focus on leveraging data, analytics and technology across our businesses, including through granular risk-based pricing, risk distribution, strategic capital management and execution of our real estate services strategy. Thank you for your continued support and confidence.



Rick Thornberry


Chief Executive Officer

***Non-GAAP Financial Measures**

On a consolidated basis, adjusted pretax operating income and adjusted diluted net operating income per share are non-GAAP financial measures. See pages 74 through 76 for our definitions of these and our other non-GAAP financial measures, including reconciliations of the most comparable GAAP measures of consolidated pretax income and diluted net income per share to our non-GAAP financial measures for the consolidated company of adjusted pretax operating income and adjusted diluted net operating income per share.

2019 HIGHLIGHTS

FINANCIAL HIGHLIGHTS

 **\$672.3 mm**
Net Income

 **\$240.6 mm**
Primary Insurance In Force

 **9% growth**
in Primary Insurance in Force
(Year-Over-Year)

 **\$71.3 bn**
New Insurance Written

 **17.8%**
Return on Equity

 **13.5 mm**
Shares Repurchased
(6% of Outstanding Shares Repurchased)

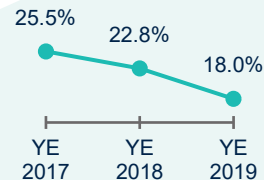
 **\$20.13**
Book Value Per Share

 **\$3.21**
Adjusted Diluted Net Operating Income Per Share*

Stockholders' Equity (\$ in billions)



Debt-to-Capital Ratio



RATINGS

RADIAN GROUP

Ba1 Moody's Investor Service

BB+ Standard & Poor's

RADIAN GUARANTY

Baa1 Moody's Investor Service

BBB+ Standard & Poor's

WORKPLACE INITIATIVES

INCLUSION AND DIVERSITY



CEO ACT!ON FOR DIVERSITY & INCLUSION

EMPLOYEE EXPERIENCE SURVEY

 **72%**
Favorability Engagement
(vs 60% benchmark)

 **90%+**
Organizational Pride
(vs 60% benchmark)

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

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file number 1-11356



RADIAN GROUP INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)
1500 Market Street , Philadelphia , PA
(Address of principal executive offices)

23-2691170
(I.R.S. Employer Identification No.)
19102
(Zip Code)

(215) 231-1000
(Registrant's telephone number, including area code)
Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$.001 par value per share	RDN	New York Stock Exchange

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

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

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

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

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

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

Large Accelerated Filer Accelerated Filer Non-Accelerated Filer Smaller Reporting Company Emerging Growth Company

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

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

As of June 30, 2019, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was \$4,680,943,971 based on the closing sale price as reported on the New York Stock Exchange. Excluded from this amount is the value of all shares beneficially owned by executive officers and directors of the registrant. These exclusions should not be deemed to constitute a representation or acknowledgment that any such individual is, in fact, an affiliate of the registrant or that there are not other persons or entities who may be deemed to be affiliates of the registrant.

The number of shares of common stock, \$.001 par value per share, of the registrant outstanding on February 25, 2020 was 198,640,237 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Definitive Proxy Statement for the Registrant's 2020 Annual Meeting of Stockholders

Form 10-K
Reference Document

Part III
(Items 10 through 14)

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

The following list defines various abbreviations and acronyms used throughout this report, including the Business Section, Management’s Discussion and Analysis of Financial Condition and Results of Operations, Consolidated Financial Statements, the Notes to Consolidated Financial Statements and the Financial Statement Schedules.

Term	Definition
1995 Equity Plan	The Radian Group Inc. 1995 Equity Compensation Plan, as amended
2008 Equity Plan	The Radian Group Inc. 2008 Equity Compensation Plan, as amended
2014 Equity Plan	The Radian Group Inc. 2014 Equity Compensation Plan
2014 Master Policy	Radian Guaranty’s master insurance policy, setting forth the terms and conditions of our mortgage insurance coverage, which became effective October 1, 2014
2020 Master Policy	Radian Guaranty’s master insurance policy, setting forth the terms and conditions of our mortgage insurance coverage, which becomes effective for applications received on or after March 1, 2020
2016 Single Premium QSR Agreement	Quota share reinsurance agreement entered into with a panel of third-party reinsurance providers in the first quarter of 2016 and subsequently amended in the fourth quarter of 2017
2018 Single Premium QSR Agreement	Quota share reinsurance agreement entered into with a panel of third-party reinsurance providers in October 2017 to cede a portion of Single Premium NIW beginning January 1, 2018
2020 Single Premium QSR Agreement	Quota share reinsurance agreement entered into with a panel of third-party reinsurance providers in January 2020 to cede a portion of Single Premium NIW beginning January 1, 2020
ABS	Asset-backed securities
Alt-A	Alternative-A loans, representing loans for which the underwriting documentation is generally limited as compared to fully documented loans (considered a non-prime loan grade)
Amended and Restated Equity Compensation Plan	The Radian Group Inc. Equity Compensation Plan, which amended and restated the 2014 Equity Plan and was approved by our stockholders on May 10, 2017
Amended and Restated Radian Group Inc. ESPP	The Radian Group Inc. Employee Stock Purchase Plan, as approved by our stockholders on May 9, 2018
Available Assets	As defined in the PMIERS, assets primarily including the liquid assets of a mortgage insurer, and reduced by premiums received but not yet earned
CCF	Conservatorship Capital Framework
CFPB	Consumer Financial Protection Bureau
Claim Curtailment	Our legal right, under certain conditions, to reduce the amount of a claim, including due to servicer negligence
Claim Denial	Our legal right, under certain conditions, to deny a claim
Claim Severity	The total claim amount paid divided by the original coverage amount
Clayton	Clayton Services LLC, an indirect subsidiary of Radian Group, which was sold on January 21, 2020
Clayton Intercompany Note	A \$300 million note payable from Radian Mortgage Services Inc. (formerly Clayton Group Holdings Inc.) to Radian Group (with terms consistent with the terms of our Senior Notes due 2019 that were used to fund our purchase of Clayton)
CMBS	Commercial mortgage-backed securities
Convertible Senior Notes due 2017	Our 3.000% convertible unsecured senior notes due November 2017 (\$450 million original principal amount)
Convertible Senior Notes due 2019	Our 2.250% convertible unsecured senior notes due March 2019 (\$400 million original principal amount)

Term	Definition
Cures	Loans that were in default as of the beginning of a period and are no longer in default because payments were received such that the loan is no longer 60 or more days past due
Default to Claim Rate	The percentage of defaulted loans that are assumed to result in a claim
Discrete Item(s)	For tax calculation purposes, certain items that are required to be accounted for in the provision for income taxes as they occur and are not considered components of the estimated annualized effective tax rate for purposes of reporting interim results. Generally, these are items that are: (i) clearly defined (such as changes in tax rate or tax law); (ii) infrequent or unusual in nature; or (iii) gains or losses that are not components of continuing operating income, such as income from discontinued operations or losses reflected as components of other comprehensive income. These items impact the difference between the statutory rate and Radian's effective tax rate.
Dodd-Frank Act	Dodd-Frank Wall Street Reform and Consumer Protection Act, as amended
Eagle Re 2018-1	Eagle Re 2018-1 Ltd., an unaffiliated special purpose reinsurer (a VIE) domiciled in Bermuda
Eagle Re 2019-1	Eagle Re 2019-1 Ltd., an unaffiliated special purpose reinsurer (a VIE) domiciled in Bermuda
Eagle Re 2020-1	Eagle Re 2020-1 Ltd., an unaffiliated special purpose reinsurer (a VIE) domiciled in Bermuda
Eagle Re Issuer(s)	Eagle Re 2018-1 Ltd. and Eagle Re 2019-1 Ltd. Effective February 2020, this also includes Eagle Re 2020-1 Ltd.
Equity Plans	The 1995 Equity Plan, the 2008 Equity Plan and the Amended and Restated Equity Compensation Plan, together
ERM	Enterprise Risk Management
Excess-of-Loss Program	The credit risk protection obtained by Radian Guaranty in the form of excess-of-loss reinsurance, which indemnifies the ceding company against loss in excess of a specific agreed limit, up to a specified sum. The program includes reinsurance agreements with Eagle Re 2018-1 and Eagle Re 2019-1, in connection with the issuance by the Eagle Re Issuers of mortgage insurance-linked notes in November 2018 and April 2019, respectively. The program also includes a separate agreement with a third-party reinsurer, representing a pro rata share of the credit risk alongside the risk assumed by Eagle Re 2018-1. Effective February 2020, the program also includes the new credit protection obtained through an excess-of-loss reinsurance agreement with Eagle-Re 2020-1.
Exchange Act	Securities Exchange Act of 1934, as amended
Extraordinary Distribution	A dividend or distribution of capital that is required to be approved by an insurance company's primary regulator that is greater than would be permitted as an ordinary distribution (which does not require regulatory approval)
Fannie Mae	Federal National Mortgage Association
FASB	Financial Accounting Standards Board
FEMA	Federal Emergency Management Agency, an agency of the U.S. Department of Homeland Security
FEMA Designated Area	Generally, an area that has been subject to a disaster, designated by FEMA as an individual assistance disaster area for the purpose of determining eligibility for various forms of federal assistance
FHA	Federal Housing Administration
FHFA	Federal Housing Finance Agency
FHLB	Federal Home Loan Bank of Pittsburgh
FICO	Fair Isaac Corporation ("FICO") credit scores, for Radian's portfolio statistics, represent the borrower's credit score at origination and, in circumstances where there are multiple borrowers, the lowest of the borrowers' FICO scores is utilized
Five Bridges	Radian acquired the assets of Five Bridges Advisors, LLC in December 2018
Flow Basis	With respect to mortgage insurance, includes mortgage insurance policies that are written on an individual loan basis as each loan is originated or on an aggregated basis (in which each individual loan in a group of loans is insured in a single transaction, typically shortly after the loans have been originated). Among other items, Flow Basis business excludes Pool Insurance, which we originated prior to 2009.

Term	Definition
Foreclosure Stage Default	The stage of default of a loan in which a foreclosure sale has been scheduled or held
Freddie Mac	Federal Home Loan Mortgage Corporation
Freddie Mac Agreement	The Master Transaction Agreement between Radian Guaranty and Freddie Mac entered into in August 2013
GAAP	Generally accepted accounting principles in the U.S., as amended from time to time
GSE(s)	Government-Sponsored Enterprises (Fannie Mae and Freddie Mac)
HAMP	Homeowner Affordable Modification Program
HARP	Home Affordable Refinance Program
HARP Replacement Programs	Fannie Mae's High LTV Refinance Option and Freddie Mac's Enhanced Relief Refinance Programs
HPA	Homeowners Protection Act of 1998
IBNR	Losses incurred but not reported
IIF	Insurance in force, equal to the aggregate unpaid principal balances of the underlying loans
Independent Settlement Services	Independent Settlement Services, LLC, an indirect subsidiary of Radian Group
IRS	Internal Revenue Service
IRS Matter	Our dispute with the IRS that we settled and fully resolved in the second quarter of 2018 that was related to the assessed tax liabilities, penalties and interest from the IRS's examination of our 2000 through 2007 consolidated federal income tax returns
LAE	Loss adjustment expenses, which include the cost of investigating and adjusting losses and paying claims
Loss Mitigation Activity/Activities	Activities such as Rescissions, Claim Denials, Claim Curtailments and cancellations
LTV	Loan-to-value ratio, calculated as the percentage of the original loan amount to the original value of the property
Master Policies	The Prior Master Policy and the 2014 Master Policy, together
Minimum Required Assets	A risk-based minimum required asset amount, as defined in the PMIERs, calculated based on net RIF (RIF, net of credits permitted for reinsurance) and a variety of measures related to expected credit performance and other factors
Model Act	Mortgage Guaranty Insurance Model Act, as issued by the NAIC to establish minimum capital and surplus requirements for mortgage insurers
Monthly and Other Recurring Premiums (or Recurring Premium Policies)	Insurance premiums or policies, respectively, where premiums are paid on a monthly or other installment basis, in contrast to Single Premium Policies
Monthly Premium Policies	Insurance policies where premiums are paid on a monthly installment basis
Moody's	Moody's Investors Service
Mortgage Insurance	Radian's mortgage insurance and risk services business segment, which provides credit-related insurance coverage, principally through private mortgage insurance on residential first-lien mortgage loans, as well as other credit risk management solutions to mortgage lending institutions and mortgage credit investors
MPP Requirement	Certain states' statutory or regulatory risk-based capital requirement that the mortgage insurer must maintain a minimum policyholder position, which is calculated based on both risk and surplus levels
NAIC	National Association of Insurance Commissioners
NIW	New insurance written

Term	Definition
NOL	Net operating loss; for tax purposes, accumulated during years a company reported more tax deductions than taxable income. NOLs may be carried back or carried forward a certain number of years, depending on various factors which can reduce a company's tax liability.
PDR	Premium deficiency reserve
Persistence Rate	The percentage of IIF that remains in force over a period of time
PMIERS	Private Mortgage Insurer Eligibility Requirements issued by the GSEs under oversight of the FHFA to set forth requirements an approved insurer must meet and maintain to provide mortgage guaranty insurance on loans acquired by the GSEs
PMIERS 1.0	The original PMIERS effective on December 31, 2015
PMIERS 2.0	The revised PMIERS issued by the GSEs on September 27, 2018, which became effective on March 31, 2019
Pool Insurance	Pool Insurance differs from primary insurance in that our maximum liability is not limited to a specific coverage percentage on an individual mortgage loan. Instead, an aggregate exposure limit, or "stop loss," and/or deductible is applied to the initial aggregate loan balance on a group or "pool" of mortgages.
Prior Master Policy	Radian Guaranty's master insurance policy, setting forth the terms and conditions of our mortgage insurance coverage, which was in effect prior to the effective date of the 2014 Master Policy
QM	A mortgage that possesses certain low-risk characteristics that enable it to qualify for lender protection under the ability to repay rule instituted by the Dodd-Frank Act
QSR Program	The quota share reinsurance agreements entered into with a third-party reinsurance provider in the second and fourth quarters of 2012, collectively
Radian	Radian Group Inc. together with its consolidated subsidiaries
Radian Group	Radian Group Inc.
Radian Guaranty	Radian Guaranty Inc., a Pennsylvania domiciled insurance subsidiary of Radian Group
Radian Mortgage Assurance	Radian Mortgage Assurance Inc., a Pennsylvania domiciled insurance subsidiary of Radian Group
Radian Reinsurance	Radian Reinsurance Inc., a Pennsylvania domiciled insurance subsidiary of Radian Group
Radian Settlement Services	Radian Settlement Services Inc., formerly known as ValuAmerica, Inc., an indirect subsidiary of Radian Group
Radian Title Insurance	Radian Title Insurance Inc., formerly known as EnTitle Insurance Company, an Ohio domiciled insurance company and an indirect subsidiary of Radian Group
RBC States	Risk-based capital states, which are those states that currently impose a statutory or regulatory risk-based capital requirement
Red Bell	Red Bell Real Estate, LLC, an indirect subsidiary of Radian Group
Reinstatements	Reversals of previous Rescissions, Claim Denials and Claim Curtailments
REO	Real estate owned
Rescission	Our legal right, under certain conditions, to unilaterally rescind coverage on our mortgage insurance policies if we determine that a loan did not qualify for insurance
RESPA	Real Estate Settlement Procedures Act of 1974, as amended
RIF	Risk in force; for primary insurance, RIF is equal to the underlying loan unpaid principal balance multiplied by the insurance coverage percentage, whereas for Pool Insurance, it represents the remaining exposure under the agreements
Risk-to-capital	Under certain state regulations, a maximum ratio of net RIF calculated relative to the level of statutory capital
RMBS	Residential mortgage-backed securities
RSU	Restricted stock unit
S&P	Standard & Poor's Financial Services LLC
SAFE Act	Secure and Fair Enforcement for Mortgage Licensing Act, as amended

Term	Definition
SAP	Statutory accounting principles and practices, including those required or permitted, if applicable, by the insurance departments of the respective states of domicile of our insurance subsidiaries
SEC	United States Securities and Exchange Commission
Senior Notes due 2017	Our 9.000% unsecured senior notes due June 2017 (\$195.5 million original principal amount)
Senior Notes due 2019	Our 5.500% unsecured senior notes due June 2019 (\$300 million original principal amount)
Senior Notes due 2020	Our 5.250% unsecured senior notes due June 2020 (\$350 million original principal amount)
Senior Notes due 2021	Our 7.000% unsecured senior notes due March 2021 (\$350 million original principal amount)
Senior Notes due 2024	Our 4.500% unsecured senior notes due October 2024 (\$450 million original principal amount)
Senior Notes due 2027	Our 4.875% unsecured senior notes due March 2027 (\$450 million original principal amount)
Services	Radian's business segment that is primarily a fee-for-service business that offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain
Single Premium NIW / IIF	NIW or IIF, respectively, on Single Premium Policies
Single Premium Policy / Policies	Insurance policies where premiums are paid in a single payment, which includes policies written on an individual basis (as each loan is originated) and on an aggregated basis (in which each individual loan in a group of loans is insured in a single transaction, typically shortly after the loans have been originated)
Single Premium QSR Program	The 2016 Single Premium QSR Agreement and the 2018 Single Premium QSR Agreement, together. Effective January 2020, the program also includes the 2020 Single Premium QSR Agreement.
Stage of Default	The stage a loan is in relative to the foreclosure process, based on whether a foreclosure sale has been scheduled or held
Statutory RBC Requirement	Risk-based capital requirement imposed by the RBC States, requiring a minimum surplus level and, in certain states, a minimum ratio of statutory capital relative to the level of risk
Surplus Notes	Collectively: (i) a \$100 million 0.000% intercompany surplus note issued by Radian Guaranty to Radian Group, due December 31, 2027 and (ii) a \$200 million 3.0% intercompany surplus note issued by Radian Guaranty to Radian Group, due January 31, 2030
TCJA	H.R. 1, known as the Tax Cuts and Jobs Act, signed into law on December 22, 2017
Time in Default	The time period from the point a loan reaches default status (based on the month the default occurred) to the current reporting date
VA	U.S. Department of Veterans Affairs
VIE	Variable interest entity

Cautionary Note Regarding Forward-Looking Statements—Safe Harbor Provisions

All statements in this report that address events, developments or results that we expect or anticipate may occur in the future are “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Exchange Act and the U.S. Private Securities Litigation Reform Act of 1995. In most cases, forward-looking statements may be identified by words such as “anticipate,” “may,” “will,” “could,” “should,” “would,” “expect,” “intend,” “plan,” “goal,” “contemplate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “seek,” “strategy,” “future,” “likely” or the negative or other variations on these words and other similar expressions. These statements, which may include, without limitation, projections regarding our future performance and financial condition, are made on the basis of management’s current views and assumptions with respect to future events. Any forward-looking statement is not a guarantee of future performance and actual results could differ materially from those contained in the forward-looking statement. These statements speak only as of the date they were made, and we undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. We operate in a changing environment where new risks emerge from time to time and it is not possible for us to predict all risks that may affect us. The forward-looking statements, as well as our prospects as a whole, are subject to risks and uncertainties that could cause actual results to differ materially from those set forth in the forward-looking statements. These risks and uncertainties include, without limitation:

- changes in economic and political conditions that impact the size of the insurable market, the credit performance of our insured portfolio, and our business prospects;
- changes in the way customers, investors, ratings agencies, regulators or legislators perceive our performance, financial strength and future prospects;
- Radian Guaranty’s ability to remain eligible under the PMIERS and other applicable requirements imposed by the FHFA and by the GSEs to insure loans purchased by the GSEs, including potential future changes to the PMIERS which, among other things, may be impacted by the general economic environment and housing market, as well as the proposed CCF that would establish capital requirements for the GSEs once finalized;
- our ability to successfully execute and implement our capital plans, including our risk distribution strategy through the capital markets and reinsurance markets, and to maintain sufficient holding company liquidity to meet our liquidity needs;
- our ability to successfully execute and implement our business plans and strategies, including plans and strategies that require GSE and/or regulatory approvals and various licenses and complex compliance requirements;
- our ability to maintain an adequate level of capital in our insurance subsidiaries to satisfy existing and future regulatory requirements, including potential changes to the NAIC Model Act currently under consideration;
- changes in the charters or business practices of, or rules or regulations imposed by or applicable to, the GSEs, which may include changes in the requirements to remain an approved insurer to the GSEs, the GSEs’ interpretation and application of the PMIERS, as well as changes impacting loans purchased by the GSEs, such as whether GSE eligible loans meet the QM loan requirements under applicable law, requirements regarding mortgage credit and loan size and the GSEs’ pricing;
- changes in the current housing finance system in the U.S., including the role of the FHA, the GSEs and private mortgage insurers in this system;
- uncertainty from the expected discontinuance of LIBOR and transition to another interest rate benchmark that could cause interest rate volatility and, among other things, impact our investment portfolio, cost of debt and cost of reinsurance through mortgage insurance-linked notes transactions;
- any disruption in the servicing of mortgages covered by our insurance policies, as well as poor servicer performance;
- a decrease in the Persistency Rates of our mortgage insurance on monthly premium products;
- competition in our mortgage insurance business, including price competition and competition from the FHA and VA as well as from other forms of credit enhancement, including GSE sponsored alternatives to traditional mortgage insurance;
- the effect of the Dodd-Frank Act on the financial services industry in general, and on our businesses in particular, including future changes to the QM loan requirements which currently are being considered by the CFPB;
- legislative and regulatory activity (or inactivity), including the adoption of (or failure to adopt) new laws and regulations, or changes in existing laws and regulations, or the way they are interpreted or applied;

- legal and regulatory claims, assertions, actions, reviews, audits, inquiries and investigations that could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief that could require significant expenditures, new or increased reserves or have other effects on our business;
- the amount and timing of potential settlements, payments or adjustments associated with federal or other tax examinations;
- the possibility that we may fail to estimate accurately the likelihood, magnitude and timing of losses in establishing loss reserves for our mortgage insurance business or to accurately calculate and/or project our Available Assets and Minimum Required Assets under the PMIERS, which will be impacted by, among other things, the size and mix of our IIF, the level of defaults in our portfolio, the level of cash flow generated by our insurance operations and our risk distribution strategies;
- volatility in our financial results caused by changes in the fair value of our assets and liabilities, including our investment portfolio;
- potential future impairment charges related to our goodwill and other acquired intangible assets;
- changes in GAAP or SAP rules and guidance, or their interpretation;
- our ability to attract and retain key employees; and
- legal and other limitations on amounts we may receive from our subsidiaries, including dividends or ordinary course distributions under our internal tax- and expense-sharing arrangements.

For more information regarding these risks and uncertainties as well as certain additional risks that we face, you should refer to the Risk Factors detailed in Item 1A, and to subsequent reports and registration statements filed from time to time with the SEC. We caution you not to place undue reliance on these forward-looking statements, which are current only as of the date on which we issued this report. We do not intend to, and we disclaim any duty or obligation to, update or revise any forward-looking statements to reflect new information or future events or for any other reason.

PART I

Item 1. Business.

General

We are a diversified mortgage and real estate services business. We provide mortgage insurance and products and services to the real estate and mortgage finance industries through our two business segments—Mortgage Insurance and Services. Our Mortgage Insurance segment provides credit-related insurance coverage, principally through private mortgage insurance, as well as other credit risk management solutions to mortgage lending institutions and mortgage credit investors. Our Services segment is primarily a fee-for-service business that offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain. We offer these services primarily to mortgage lenders, financial institutions, investors and government entities. In addition, we provide title insurance and settlement services to mortgage lenders as well as directly to consumers. Prior to our January 2020 sale of Clayton, our mortgage services included transaction management services such as loan review, RMBS securitization and distressed asset reviews as well as servicer and loan surveillance. See Note 7 of Notes to Consolidated Financial Statements for additional information on the sale of Clayton.

Radian Group serves as the holding company for our insurance and other subsidiaries, through which we offer our products and services, and does not have any operations of its own.

2019 Highlights. Below are highlights of our key accomplishments that furthered our strategic objectives and contributed to our financial and operating results during 2019.

Key Accomplishments for 2019

- Wrote \$71.3 billion of NIW on a Flow Basis, the highest flow volume in Radian's 40+ year history
 - Represents a 26% increase over 2018
 - Grew primary IIF by 9%, from \$221.4 billion at December 31, 2018 to \$240.6 billion at December 31, 2019
- Earned pretax income of \$849.0 million in 2019, an increase of 24% compared to \$684.2 million in 2018
- Grew adjusted pretax operating income to \$854.6 million, an increase of 15% compared to \$745.5 million for 2018 ⁽¹⁾
- Improved composition of mortgage insurance portfolio
 - 95% of our primary RIF consists of business written after 2008, including loans refinanced under HARP
 - Fully implemented RADAR Rates, our black box pricing framework and digital delivery platform, which expands our risk-based pricing granularity and allows us to more dynamically shape and manage our mortgage insurance portfolio
- Took steps to optimize our capital and liquidity position
 - Repurchased over 13 million shares of Radian Group's common stock
 - Added \$375 million to Radian Group liquidity as a result of Radian Guaranty's return of capital to Radian Group in April 2019
 - Reduced our total debt outstanding and improved our debt maturity profile through a series of transactions, which also helped to reduce our debt-to-capital ratio from 22.8% at December 31, 2018 to 18.0% at December 31, 2019
- Expanded our risk distribution strategy to optimize the amounts and types of capital and risk distribution deployed against insured risk and reduce future loss volatility
 - Radian Guaranty executed the Eagle Re 2019-1 mortgage insurance-linked notes transaction, which provides for up to \$562.0 million aggregate excess-of-loss reinsurance coverage for mortgage insurance losses
- Increased the excess of Available Assets over Minimum Required Assets under PMIERS to \$804 million, or 28% more than the Minimum Required Assets under PMIERS

(1) Adjusted pretax operating income is a non-GAAP measure. See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Consolidated—Use of Non-GAAP Financial Measures" for the definition and reconciliation of this measure to the most comparable GAAP measure, pretax income.

For additional information regarding these items as well as other factors impacting our business and financial results in 2019, see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

Business Strategy. We are strategically focused on supporting the American dream of homeownership by delivering new levels of service and innovation to our customers across the residential mortgage and real estate spectrum through the combination of our mortgage insurance and risk services business and our comprehensive suite of real estate, title and mortgage services. Our objectives include driving strong growth, increasing value creation and providing attractive stockholder returns. Consistent with these objectives, our business strategy, as highlighted below, is focused on growing our businesses and diversifying our revenue sources, while at the same time leveraging our operational excellence and the strength of our “One Radian” brand.

Radian’s Long-Term Strategic Objectives

- Maximize the long-term economic value of our insured portfolio to drive future earnings by writing profitable NIW and effectively maintaining the portfolio’s health, balance and profitability, including by using risk distribution strategies to manage our retained exposure
- Leverage the strength of our One Radian brand and core competencies and increase our competitive differentiation in order to:
 - Grow our mortgage insurance business in innovative ways
 - Expand our presence in the mortgage and real estate value chain beyond mortgage insurance
 - Maintain strong comprehensive enterprise risk management and risk/return discipline based on sound data and analytics
 - Enhance the quality and performance of our operations and delivery of products and services
- Manage our capital to build strategic financial flexibility and increase stockholder value

We utilize various tools to assess the long-term economic value of our insured portfolio in order to identify opportunities to create stockholder value. For our mortgage insurance business, we evaluate the long-term economic value of our existing and future insured portfolio by using a measure that incorporates expected lifetime returns for our insurance policies, taking into consideration projected premiums, credit losses, investment income, operating expenses, taxes and an assumed cost of capital. This projected economic value is present-valued to arrive at an estimated long-term economic value of our portfolio. We use this economic value to assist us in evaluating various portfolio strategies.

A key element of our business strategy is to build competitive differentiation across our mortgage insurance business and use our Services segment to diversify our business and revenue streams by increasing our participation in multiple facets of the residential real estate and mortgage finance markets. Beginning in 2017, we initiated a review of the strategic direction of our Services business and made several decisions with respect to the business strategy that are designed to reposition this business to drive future growth and profitability. As a further step in repositioning the Services business, we initiated a process in 2019 to evaluate a potential sale of Clayton, through which we provided mortgage services related to loan acquisition, RMBS securitization and distressed asset reviews and servicer and loan surveillance. This sale was completed in January 2020, and we currently are focused on growing our real estate, title and remaining mortgage services, including our title insurance and settlement services, valuation and asset management services that support our REO and single family rental businesses, as well as our other digital real estate services. See “Services—Services Business Overview.”

Corporate Background. Radian Group has been incorporated as a business corporation under the laws of the State of Delaware since 1991. Our principal executive offices are located at 1500 Market Street, Philadelphia, Pennsylvania 19102, and our telephone number is (215) 231-1000.

Additional Information. Our website address is www.radian.biz. Copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, as well as any amendments to those reports, are available free of charge through our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. In addition, our guidelines of corporate governance, code of business conduct and ethics (which includes the code of ethics applicable to our chief executive officer, principal financial officer and principal accounting officer) and the governing charters for each standing committee of Radian Group’s board of directors are available free of charge on our website, as well as in print, to any stockholder upon request.

The public may read materials we file with the SEC, including reports, proxy and information statements, and other information, on the Internet site maintained by the SEC. The address of that site is www.sec.gov.

The above references to our website and the SEC’s website do not constitute incorporation by reference of the information contained on the websites and such information should not be considered part of this document.

Operating Environment

As a seller of mortgage credit protection and other credit risk management solutions, as well as a provider of real estate, title and mortgage services, the demand for our products and services is largely driven by the macroeconomic environment generally, and more specifically by the health of the housing, mortgage finance and related real estate markets.

Mortgage Insurance. Our mortgage insurance business is impacted by specific macroeconomic conditions and events that impact the mortgage origination environment and the credit performance of our portfolio of insured loans. The improvement in macroeconomic conditions since the financial crisis of 2007-2008, together with tighter credit requirements on new loans and an improvement in loan servicing, has contributed to the positive credit trends in our mortgage insurance portfolio, including a lower level of new defaults and a higher level of defaulted loans becoming current, or “curing.”

Among other factors, private mortgage insurance industry volumes are impacted by total mortgage origination volumes and the mix between mortgage originations that are for home purchases versus refinancings of existing mortgages, with the penetration rate for private mortgage insurance being generally three to five times higher for purchase transactions than for refinancings. In 2019, the total mortgage origination market was larger than anticipated, driven by an increase in purchase transactions as well as stronger than anticipated refinancings due to low mortgage interest rates. As a result of the larger overall mortgage origination market, and in particular the strong purchase market, the private mortgage insurance market increased in 2019 as compared to 2018. The most recently available industry reports currently project the mortgage origination market to be lower in 2020 in comparison to 2019, with purchase loan volume expected to increase, but to be more than offset by a significant decrease in refinancings. Based on these industry projections and our expected mortgage insurance penetration rates, we are projecting that the private mortgage insurance market in 2020 will be lower in comparison to 2019, and we currently expect our NIW for 2020 to be approximately \$60 billion.

The environment for private mortgage insurers is highly competitive, with private mortgage insurers competing primarily on the basis of price, underwriting guidelines, overall service, customer relationships, perceived financial strength and reputation. In addition to other private mortgage insurers, we compete with governmental agencies, principally the FHA and the VA. See “Mortgage Insurance—Competition.”

In 2019, the mortgage insurance industry migrated away from a predominantly rate-card-based pricing model, and various pricing methodologies are now being deployed with differing degrees of risk-based granularity, including the increased use of “black box” pricing frameworks. The shift away from a predominantly rate-card-based pricing model and the increase in “black box” pricing frameworks provides a more dynamic pricing capability that has led to an increase in the frequency of pricing changes throughout the mortgage insurance industry and a reduction in pricing transparency. See “Mortgage Insurance—Mortgage Insurance Business Overview—Premium Rates.”

In addition to the transformation of pricing frameworks, in recent years, participants in the private mortgage insurance industry have engaged in a range of risk distribution strategies. In our mortgage insurance business, Radian uses reinsurance as a capital and risk management tool to lower the risk profile and financial volatility of our mortgage insurance portfolio through economic cycles. Among other benefits, risk distribution reduces our required capital, lowers our overall cost of capital and enhances our projected return on capital. As the industry continues to evolve from a model where private mortgage insurers “originate and hold” risk to an “aggregate, manage and distribute” risk model, we expect to continue to utilize multiple forms of risk distribution, subject to cost, availability and other factors. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Overview—Risk Distribution.”

Services. The macroeconomic conditions and other events that impact the housing, mortgage finance and related real estate markets also affect the demand for the services we offer through our Services business segment. Sales volume in our Services business varies based on the overall activity in the housing and mortgage finance markets and the health of related industries. We believe that the combination of our mortgage insurance business with the unique set of diversified services provided through our Services segment provides us with an opportunity to become increasingly more relevant to our customers and that this combination serves as a competitive differentiator for us compared to other private mortgage insurance companies.

Mortgage Insurance

Mortgage Insurance Business Overview

Overview

Our Mortgage Insurance segment provides credit-related insurance coverage, principally through private mortgage insurance, as well as other credit risk management solutions, to mortgage lending institutions and mortgage credit investors. Private mortgage insurance plays an important role in the U.S. housing finance system because it promotes affordable home ownership and helps protect mortgage lenders, investors and other beneficiaries by mitigating default-related losses on residential mortgage loans. Generally, these loans are made to home buyers who make down payments of less than 20% of the purchase price for their home or, in the case of refinancings, have less than 20% equity in their home. Private mortgage insurance also facilitates the sale of these loans in the secondary mortgage market, most of which are currently sold to the GSEs.

See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Mortgage Insurance*.”

Mortgage Insurance Products

Primary Mortgage Insurance. Primary mortgage insurance provides protection against mortgage defaults at a specified coverage percentage. When there is a valid claim under primary mortgage insurance, the maximum liability is determined by multiplying the claim amount, which consists of the unpaid loan principal, plus past due interest and certain expenses associated with the default, by the coverage percentage. Claims may be settled for the maximum liability or for other amounts. See “—Claims Management” below.

We mainly provide primary mortgage insurance on an individual loan basis as each mortgage is originated, but we also can provide primary mortgage insurance on individual loans in an aggregate group of mortgages after they have been originated. We primarily write insurance in a “first loss” position, where we are responsible for the first losses incurred on an insured loan subject to a policy limit. See “—Mortgage Insurance Portfolio—*Mortgage Loan Characteristics*.”

The terms of our primary mortgage insurance coverage are set forth in a Master Policy that we enter into with each of our customers. Among other things our Master Policies set forth the applicable terms and conditions of our mortgage insurance coverage, including: loan eligibility requirements; premium payment requirements; coverage term; provisions for policy administration, servicing standards and requirements; exclusions or reductions in coverage; claims payment and settlement procedures; and dispute resolution procedures. We file our Master Policies in each of the jurisdictions in which we conduct business.

Radian Guaranty and the other private mortgage insurers have prepared new master policy forms based on updated requirements issued by the FHFA and the GSEs. See “—Claims Management—*Rescissions*.” Radian Guaranty’s new master policy, the 2020 Master Policy, will be effective for applications received on or after March 1, 2020 and is approved for use by the GSEs and in all 50 states and the District of Columbia. Applications received through February 29, 2020 will continue to be administered under Radian Guaranty’s 2014 Master Policy.

Although the primary mortgage insurance we write protects lenders from a portion of losses resulting from mortgage defaults, it generally does not provide protection against property loss or physical damage, including damage caused by hurricanes or other severe weather events or natural disasters.

We wrote \$71.3 billion and \$56.5 billion of first-lien primary mortgage insurance in 2019 and 2018, respectively. Substantially all of our primary mortgage insurance written during 2019 and 2018 was written on a Flow Basis. Our 2019 NIW, partially offset by cancellations and amortization within our existing portfolio, resulted in an increase in IIF to \$240.6 billion at December 31, 2019, compared to \$221.4 billion at December 31, 2018. Our total direct primary mortgage insurance RIF was \$60.9 billion at December 31, 2019, compared to \$56.7 billion at December 31, 2018.

Other Mortgage Insurance Products. We also have other mortgage insurance products that had RIF of \$0.6 billion at December 31, 2019, as described below:

- *GSE Credit Risk Transfer.* Part of our business strategy includes leveraging our core expertise in credit risk management and expanding our presence in the mortgage finance industry. We participate in credit risk transfer programs developed by Fannie Mae and Freddie Mac as part of their initiative to distribute mortgage credit risk and increase the role of private capital in the mortgage market. Our total RIF under the credit risk transfer transactions was \$275.2 million as of December 31, 2019, compared to \$196.8 million as of December 31, 2018.

We will only experience claims under these credit risk transfer transactions if the borrower's equity, any existing primary mortgage insurance (if applicable) and the GSEs' retained risk are depleted. In participating in these GSE transactions, we assume incremental risk (beyond that which we typically cover in our traditional mortgage insurance business) associated with the risk of defaults caused by physical damage, including natural disasters such as hurricanes and wildfires, which is not covered by the underlying primary mortgage insurance. We regularly evaluate this risk, including the geographic diversity of the loans included in these transactions and our remote risk position, in assessing our participation in these transactions.

- *Pool Insurance.* Prior to 2008, we wrote Pool Insurance on a limited basis. At December 31, 2019, Pool Insurance made up only \$313.5 million of our total direct first-lien insurance RIF, as compared to \$324.6 million at December 31, 2018. With respect to our Pool Insurance, an aggregate exposure limit, or "stop loss" (usually between 1% and 10%), is generally applied to the initial aggregate loan balance on a group or "pool" of mortgages. In addition, an insured pool of mortgages may contain mortgages that are already covered by primary mortgage insurance. In these transactions, Pool Insurance is secondary to any primary mortgage insurance that exists on mortgages within the pool. Our Pool Insurance policies are privately negotiated and are separate from the Master Policies that we use for our primary mortgage insurance.
- *Non-Traditional Risk.* In the past, we provided non-traditional products that included mortgage insurance on second-lien residential mortgage loans and mortgage insurance on an international basis. Our total amount of non-traditional risk was \$10.4 million at December 31, 2019, which consisted entirely of second-lien RIF, as compared to \$15.2 million at December 31, 2018.

Premium Rates

Primary Mortgage Insurance. A premium rate is determined when insurance coverage is requested on a mortgage, which is generally near the time of loan origination. Premiums for our mortgage insurance products are established based on performance models that consider a broad range of borrower, loan and property characteristics as well as current and projected market and economic conditions. Our premium rates are subject to regulation, and in most states where our insurance subsidiaries are licensed, our premiums must be filed, and in some cases approved, before their use. See "Regulation—State Regulation."

Our pricing strategy is to set our premium levels to manage the risk/return profile and long-term economic value of our insured portfolio. Our premium levels are designed to maximize the long-term economic value of our mortgage insurance portfolio by balancing credit risk, profitability and volume considerations, and achieve an overall risk-adjusted rate of return on capital given our modeled performance expectations. Our actual returns may differ from our expectations based on changing market conditions and other factors. Among other factors, we set our premium rates based on competitive and economic conditions, as well as assumptions about policy performance, including, without limitation, our expectations and assumptions about: (i) the likelihood of default; (ii) how long the policy will remain in place; (iii) the costs of acquiring and maintaining the insurance; (iv) taxes; and (v) the capital that is required to support the insurance.

Premiums on our mortgage insurance products generally are written on either: (i) a recurring basis, either as monthly or annual premiums, pursuant to our Monthly and Other Recurring Premium Policies or (ii) on a multi-year basis as a single premium generally paid at the time of loan origination pursuant to our Single Premium Policies. There are also alternative products where premiums may be paid on an annual installment basis or as a combination of up-front premium at origination plus a monthly installment. In addition, premiums may be paid after loan origination or may include a refundable component. Some programs, subject to certain conditions, provide coverage for the life of the loan while others terminate when certain criteria are met. There are many factors that influence the types of premiums we receive, including: (i) the percentage of mortgage originations derived from refinancing transactions versus new home purchases; (ii) the customers with whom we do business (e.g., mix of Single Premium Policies and Monthly and Other Recurring Premium Policies varies by customer); and (iii) the relative premium levels we and our competitors set for the various forms of premiums offered.

Mortgage insurance premiums can be funded through a number of methods, and while the coverage remains for the benefit of the insured or third-party beneficiary, the premiums may be paid by the borrower or by the lender. Borrower-paid Monthly and Other Recurring Premiums are generally paid as part of the borrower's monthly mortgage payment, while borrower-paid Single Premiums are paid at the time of closing either as part of the settlement charges or financed as a component of the mortgage loan amount. Lender-paid mortgage insurance premiums are paid by the lender and are typically passed through to the borrower in the form of additional origination fees or a higher interest rate on the mortgage note. The majority of our Monthly and Other Recurring Premiums are established as a fixed percentage of the initial loan balance for a set period of time (typically 10 years), after which the premium declines to a lower fixed percentage for the remaining life of the

policy. Our remaining Monthly and Other Recurring Premiums are established as a fixed percentage of the loan's amortizing balance over the life of the policy.

The impact of market conditions on our returns will vary based on, among other factors, whether the insurance is borrower-paid or lender-paid, and whether the payments are made monthly or on another recurring basis, or in a single premium payment at the time of origination. See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Mortgage Insurance—Premiums.*" A change in capital requirements on insured loans can also affect our returns. See "Regulation—GSE Requirements—*PMIERS—Private Mortgage Insurer Eligibility Requirements.*"

In 2019, the mortgage insurance industry migrated away from a predominantly rate-card-based pricing model, and various pricing methodologies are being deployed with differing degrees of risk-based granularity. Although the current pricing frameworks are based upon the same general risk attributes as have been considered in mortgage insurance pricing historically; more granular risk-based pricing factors are now being incorporated into pricing tools. The shift away from a predominantly rate-card-based pricing model and the increase in "black box" pricing frameworks provides a more dynamic pricing capability that has led to an increase in the frequency of pricing changes throughout the mortgage insurance industry and a reduction in pricing transparency. Further, this shift in risk-based, granular pricing methodologies, as well as the development of enhanced digital technologies for delivering and receiving price quotes, has led to an increasing number of customers making their choice of mortgage insurance providers based on the lowest price available for any particular loan, without consideration of other factors.

Overall, our approach to pricing is customer-centric and flexible, as we offer a spectrum of risk-based pricing solutions for our customers with varying degrees of granularity and transparency. This approach represents a continuation of our strategy to pursue multiple pricing delivery options that can be customized to a lender's loan origination process and balanced with our own objectives for managing our volume of NIW and the risk/return profile of our mortgage insurance portfolio. These solutions range from more traditional pricing forms (i.e., standard rate card) to RADAR Rates, our "black box" pricing framework and digital delivery platform that utilizes Radian's proprietary RADAR risk model and analyzes credit risk inputs to customize a rate quote to a borrower's individual risk profile, loan attributes and property characteristics. See "Item 1A. Risk Factors—*Our mortgage insurance business faces intense competition.*"

GSE Credit Risk Transfer Transactions. Credit risk transfer premium rates are established through a sealed-bid auction process in which potential insurers/reinsurers provide their desired allocation of the offering(s) at a specified premium rate. We evaluate each transaction and determine our bid based on performance models that consider a broad range of borrower, loan and property characteristics as well as market and forecasted future economic conditions. The GSEs set a uniform premium based on an assessment of the bids received and, based on their desired counterparty exposure, assign allocations to insurers/reinsurers.

Underwriting

Mortgage loan applications are underwritten to determine whether they are eligible for our mortgage insurance. We perform this function directly or, alternatively, we delegate to our insured lenders the ability to underwrite the mortgage loans based on compliance with our underwriting guidelines.

Delegated Underwriting. Through our delegated underwriting program, we approve insured lenders to underwrite mortgage loan applications based on our mortgage insurance underwriting guidelines. Each lender participating in the delegated underwriting program must be approved by our risk management group. Utilization of our delegated underwriting program enables us to meet lenders' demands for immediate insurance coverage and increases the efficiency of the underwriting process. We use quality control sampling and performance monitoring to manage the risks associated with delegated underwriting. Under the terms of the program, we have certain rights to rescind coverage if there has been a deviation from our underwriting guidelines. For a discussion of these limited Rescission rights, see "—Claims Management—*Rescissions.*" As of December 31, 2019 and 2018, 63% of our total first-lien IIF had been originated on a delegated basis.

Non-Delegated Underwriting. Insured lenders may submit mortgage loan applications to us and we will perform the mortgage insurance underwriting. Some customers prefer our non-delegated underwriting program because we assume responsibility for underwriting the mortgage insurance and, subject to the terms of our Master Policies, are less likely to rescind coverage if we make an underwriting error. We use quality control sampling, loan performance monitoring and training to manage the risks associated with our non-delegated underwriting program.

Contract Underwriting. We also provide third party contract underwriting services to our mortgage insurance customers. To manage the risks associated with contract underwriting, we train our underwriters, require them to complete continuing education and routinely audit performance to monitor the accuracy and consistency of underwriting practices. See "Services—

Services Business Overview—*Services Offered—Mortgage Services.*” During 2019, mortgage loans underwritten through contract underwriting accounted for 5.0% of insurance certificates issued on a Flow Basis, as compared to 3.8% in 2018.

Mortgage Insurance Portfolio

Direct Risk in Force

Exposure in our mortgage insurance business is measured by RIF, which for primary insurance is equal to the underlying loan unpaid principal balance multiplied by our insurance coverage percentage. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Mortgage Insurance—*NIW, IIF, RIF*” for additional information about the composition of our primary RIF. See “—Mortgage Insurance Business Overview—*Mortgage Insurance Products*” for additional information regarding other mortgage insurance RIF.

We analyze our mortgage insurance portfolio in a number of ways to identify any concentrations or imbalances in risk dispersion. We believe that, among other factors, the credit performance of our mortgage insurance portfolio is affected significantly by:

- general economic conditions (in particular, interest rates, home prices and unemployment);
- the age and performance history of the loans insured;
- the geographic dispersion and other characteristics of the properties securing the insured loans and the condition of local housing markets;
- the quality of loan underwriting and servicing; and
- the credit characteristics of the borrower(s) and the characteristics of the loans insured.

Direct Primary RIF by Year of Policy Origination and Persistency

The following table shows our direct primary mortgage insurance RIF by year of origination and selected information related to that risk as of December 31, 2019:

(\$ in millions)	December 31, 2019					
	RIF	Number of Defaults	Delinquency Rate	Percentage of Reserve for Losses	Average FICO (1) at Origination (2)	Original Average LTV (2)
2008 and prior	\$ 4,772	10,876	8.7%	61.4%	696	89.9%
2009 - 2013	4,559	1,376	1.5	6.2	756	91.9
2014	2,644	1,047	2.0	4.3	741	92.6
2015	4,528	1,353	1.7	5.7	744	92.3
2016	7,620	1,744	1.3	7.2	746	92.0
2017	9,728	2,325	1.4	8.1	743	92.5
2018	10,881	2,107	1.2	6.3	739	92.7
2019	16,189	438	0.2	0.8	749	91.6
Total	<u>\$ 60,921</u>	<u>21,266</u>		<u>100.0%</u>		

(1) Represents the borrower’s credit score at origination. In circumstances where there is more than one borrower, the lowest of the borrowers’ FICO score is used.

(2) Average FICO at origination and original average LTV are weighted averages based on the unpaid principal balances of the underlying mortgage loans in our portfolio at December 31, 2019.

The amount of time that our insurance certificates remain in force, which is affected by loan repayments and terminations of our insurance, has a significant impact on our revenues and our results of operations. Our Persistency Rate is the measure that assesses the impact that insurance terminations resulting in certificate cancellations have on our IIF, which is one of the primary drivers of future premiums that we expect to earn over time. Because our insurance premiums are earned over time, higher Persistency Rates on Monthly Premium Policies increase the premiums we receive and generally result in increased profitability and returns. Conversely, assuming all other factors remain constant, higher Persistency Rates on Single Premium business lower the overall returns from our insured portfolio, as the premium revenue for our Single Premium Policies is the

same regardless of the actual life of the insurance policy and we are required to maintain regulatory capital and Available Assets supporting the insurance for the life of the policy. The Persistency Rate of our primary mortgage insurance was 78.2% at December 31, 2019, compared to 83.1% at December 31, 2018. Historically, there is a close correlation between interest rates and Persistency Rates. Lower interest rate environments generally increase refinancings that increase the cancellation rate of our insurance and negatively affect our Persistency Rates.

Although subject to uncertainty, we expect our IIF to generate substantial earnings in future periods, due to the high credit quality of our current mortgage insurance portfolio and our expected Persistency Rate over multiple years. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Mortgage Insurance—IIF; Persistency Rate; Mix of Business*” for more information.

Geographic Dispersion

The following table shows, as of December 31, 2019 and 2018, the percentage of our direct primary mortgage insurance RIF and the associated percentage of our mortgage insurance reserve for losses (by location of property) for the top 10 states in the U.S. (as measured by our direct primary mortgage insurance RIF as of December 31, 2019):

	December 31,			
	2019		2018	
	RIF	Reserve for Losses	RIF	Reserve for Losses
Top Ten States				
California	11.2%	9.5%	12.3%	7.1%
Texas	9.1	6.1	8.9	6.6
Florida	7.1	11.2	7.0	11.8
Illinois	4.8	5.2	5.2	4.9
Georgia	3.8	3.6	4.0	3.9
Virginia	3.7	1.8	3.5	1.6
Maryland	3.3	3.3	3.0	3.6
Arizona	3.2	2.1	3.2	1.6
North Carolina	3.1	2.3	2.9	2.2
Washington	3.0	1.4	2.6	1.5
Total	52.3%	46.5%	52.6%	44.8%

The following table shows, as of December 31, 2019 and 2018, the percentage of our direct primary mortgage insurance RIF and the associated percentage of our mortgage insurance reserve for losses (by location of property) for the top 10 Core Based Statistical Areas, referred to as “CBSAs,” in the U.S. (as measured by our direct primary mortgage insurance RIF as of December 31, 2019):

	December 31,			
	2019		2018	
	RIF	Reserve for Losses	RIF	Reserve for Losses
Top Ten CBSAs (1)				
Chicago, IL-IN-WI	4.5%	5.0%	4.9%	4.7%
Washington, DC-MD-VA	3.9	2.5	3.7	2.7
New York, NY-NJ-PA	3.8	12.3	4.0	16.6
Dallas, TX	3.5	2.6	3.4	2.1
Atlanta, GA	3.0	2.8	3.2	2.9
Los Angeles - Long Beach, CA	3.0	2.4	3.4	1.8
Phoenix/Mesa, AZ	2.4	1.3	2.4	1.1
Philadelphia, PA-NJ-DE-MD	2.3	2.6	2.3	3.0
Miami, FL	2.2	4.3	2.2	4.4
Houston, TX	2.2	2.7	2.2	2.5
Total	30.8%	38.5%	31.7%	41.8%

(1) CBSAs are metropolitan areas and include a portion of adjoining states as noted above.

Mortgage Loan Characteristics

In addition to geographic dispersion, other factors also contribute significantly to our overall risk diversification and the credit quality of our RIF, including product distribution, underwriting and our risk management practices. We consider the following borrower, loan and property characteristics in evaluating the credit quality of our portfolio and developing our pricing and risk management strategies.

LTV. An important indicator of claim incidence in our mortgage insurance business is the relative amount of a borrower’s equity that exists in a home. Generally, absent other mitigating factors such as high FICO scores and other credit factors, loans with higher LTVs at inception (i.e., smaller down payments) are more likely to result in a claim than lower LTV loans. The average original LTV of our primary NIW in 2019 was 91.6%, compared to 92.5% and 92.2% in 2018 and 2017, respectively.

Loan Grade/FICO Score. The risk of claim on non-prime loans is significantly higher than that on prime loans. We use our proprietary models to classify a loan as either prime or non-prime on the basis of a borrower’s FICO score, the level of loan file documentation and other factors. In general, we consider a loan to be a prime loan if the borrower’s FICO score is 620 or higher and the loan file meets “fully documented” standards of our credit guidelines and/or the GSE guidelines for fully documented loans. Loans that we categorize as Alt-A or A minus and below are considered non-prime loans due to lower FICO scores, reduced loan file documentation, and/or the presence of other risk characteristics. The average FICO score at origination for our primary NIW in 2019 was 750, compared to 741 and 743 in 2018 and 2017, respectively.

Loan Size. Relatively higher-priced properties with larger mortgage loan amounts generally have experienced wider fluctuations in value than more moderately priced residences, and these higher priced residences have been more likely to result in a claim. The average loan size of our direct primary mortgage IIF as of December 31, 2019, 2018 and 2017 was \$223 thousand, \$217 thousand and \$210 thousand, respectively.

We also consider a number of other factors, including number of borrowers, debt-to-income ratio, property type, occupancy type and loan purpose in assessing our risk of loss.

See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Mortgage Insurance—*NIW, IIF, RIF*” for additional information about the credit quality and characteristics of our direct primary mortgage insurance.

Defaults and Claims

Defaults. In our Mortgage Insurance segment, the default and claim cycle begins with the receipt of a default notice from the loan servicer. We consider a loan to be in default for financial statement and internal tracking purposes upon receipt of notification by servicers that a borrower has missed two monthly payments. Defaults can occur due to a variety of specific events affecting borrowers, including death or illness, divorce or other family problems, unemployment, factors impacting regional economic conditions (e.g., hurricanes, floods, wildfires or other natural disasters) or other events.

The default rate in our mortgage insurance business is subject to seasonality. Historically, our mortgage insurance business experiences a fourth quarter seasonal increase in the number of defaults and a first quarter seasonal decline in the number of defaults and increase in the number of Cures. While historically this has been the case, macroeconomic factors in any given period may influence the default rate in our mortgage insurance business more than seasonality.

The loans from our origination years after 2008 possess significantly improved credit characteristics compared to our portfolio originated in the years prior to and including 2008, including higher average FICO scores for the borrowers of these insured mortgages. In addition, refinancings under the HARP or HARP Replacement Programs have positively impacted the overall credit quality and composition of our mortgage insurance portfolio because the refinancing generally results in terms under which a borrower has a greater ability to pay and more financial flexibility to cover the loan obligations. Our portfolio of business written after 2008 is now the predominant portion of our total primary RIF. The sum of our policies written after 2008 through 2019 and our refinancings under HARP accounted for approximately 95% of our total primary RIF at December 31, 2019, compared to 94% at December 31, 2018.

The following table shows the states that have generated the highest number of primary insurance defaults (measured as of December 31, 2019) in our insured portfolio and the corresponding percentage of total defaults as of the dates indicated:

	December 31,					
	2019		2018		2017	
States with highest number of defaults:						
Texas (1)	2,063	9.7%	1,779	8.4%	2,885	10.3%
Florida (1)	1,853	8.7	2,023	9.6	5,337	19.1
California	1,343	6.3	1,214	5.8	1,264	4.5
Illinois.	1,282	6.0	1,230	5.8	1,283	4.6
New York	1,076	5.1	1,241	5.9	1,588	5.7

- (1) Certain areas within these states were FEMA Designated Areas associated with Hurricanes Harvey and Irma and, as a result, defaults in these states were elevated at December 31, 2017.

Claims. Defaulted loans that fail to become current, or “cure,” may result in a claim under our mortgage insurance policies. Mortgage insurance claim volume is influenced by the circumstances surrounding the default. The rate at which defaults cure, or do not go to claim, depends in large part on a borrower’s financial resources and circumstances (including whether the borrower is eligible for a loan modification), local housing prices (i.e., whether borrowers are able to cure defaults by selling the property in full satisfaction of all amounts due under the mortgage), interest rates, unemployment and factors impacting regional economic conditions. In our first-lien primary insurance business, the insured must acquire title to the property (typically through a foreclosure proceeding) before submitting a claim. The time for a lender to acquire title to a property through foreclosure varies depending on the state, and in particular whether a state requires a lender to proceed through the judicial system in order to complete the foreclosure. Following the financial crisis, the time between a default and a request for claim payment increased, largely as a result of foreclosure delays due to, among other factors, increased scrutiny within the mortgage servicing industry and foreclosure process. These delays have lessened as the economy has recovered from the financial crisis. For Pool Insurance, which represents less than 1% of our RIF at December 31, 2019, our policies typically require the insured to not only acquire title but also to actively market and ultimately liquidate the real estate asset before filing a claim, which generally lengthens the time between a default and a claim submission.

Claim activity is not spread evenly throughout the coverage period of a book of business. Historically, for prime business relatively few claims are received during the first two years following issuance of a policy. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Mortgage Insurance—NIW, IIF, RIF—Provision for Losses” for additional detail on net claims paid.

In addition to claim volume, Claim Severity is another significant factor affecting losses. We calculate the Claim Severity by dividing the claim paid amount by the original coverage amount. Factors that impact the severity of a claim include, but are not limited to, the size of the loan, the amount of mortgage insurance coverage placed on the loan, the amount of time between default and claim during which we are expected to cover certain interest (capped at two years under our Prior Master Policy and capped at three years under our 2014 and 2020 Master Policies) and expenses, and the impact of our Loss Mitigation and other loss management activities with respect to the loan. Pre-foreclosure sales, acquisitions and other early workout efforts help to reduce overall Claim Severity, as do actions we may take to reduce a claim payment due to servicer negligence, as discussed below in “Claims Management.” See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Mortgage Insurance—*NIW, IIF, RIF—Provision for Losses.*”

Claims Management

Our claims management process is focused on analyzing and processing claims to ensure that we pay valid claims in accordance with our policies. Our mortgage insurance claims management department pursues opportunities to mitigate losses both before and after claims are received.

Claims. In our mortgage insurance business, upon receipt of a valid claim, we have a range of settlement options, as set forth in our Master Policies. Most frequently, we settle a valid claim with the “Percentage Option” by paying the maximum liability and allowing the insured lender to keep title to the property. For this purpose, the maximum liability is determined by multiplying (x) the claim amount (which consists of the unpaid loan principal, plus past due interest for a period of time specified in our Master Policies and certain expenses associated with the default) by (y) the applicable coverage percentage. In addition, we have the following settlement options:

- (i) Approved Sale Option: Pay the claim amount required to make the lender whole (not to exceed our maximum liability), taking into account the net proceeds received by the lender following an approved sale;
- (ii) Acquisition Option: Pay the entire claim amount and acquire title to the property; or
- (iii) Anticipated Loss Option: In certain circumstances, as outlined in our Master Policies, the claim calculation can include the claim amount minus the net proceeds we reasonably anticipate would be generated if the property, in its original condition on the effective insurance commitment date, reasonable wear and tear excepted, were sold to a third party for fair market value.

Approved sales in which the underlying property has been sold for less than the outstanding loan amount are commonly referred to as “short sales.” Although short sales may have the effect of reducing our ultimate claim obligation, in many cases, a short sale will result in the payment of a claim in an amount that is equal to the maximum liability amount. Under our Master Policies, we retain the right to consent prior to the consummation of any short sales. We have entered into agreements with each of the GSEs, pursuant to which we delegated to the GSEs our prior consent rights with respect to short sales on loans owned by the GSEs, as long as the short sales meet applicable GSE guidelines and processes for short sales and subject to certain other factors set forth in these agreements. We also provide for limited delegation authority to certain loan servicers for short sales under specific circumstances. For loans that are not owned by the GSEs and for which we have not granted specific delegation authority to the loan servicer, we perform an individual analysis of each proposed short sale and provide our consent to these sales when appropriate. Historically, we have consented to a short sale only after reviewing various factors, including among other items, the sale price relative to market and the ability of the borrower to contribute to any shortfall in the sale proceeds as compared to the outstanding loan amount.

After a claim is received, our loss management specialists may focus on:

- a review to determine compliance with applicable loan origination programs and our mortgage insurance policy requirements, including: (i) whether the loan qualified for insurance at the time the certificate of coverage was issued; (ii) whether the insured has satisfied its obligation in meeting all necessary conditions in order for us to pay a claim, including submitting all necessary documentation in connection with the claim (commonly referred to as “claim perfection”); and (iii) whether the loan was appropriately serviced in accordance with the standards set forth in our Master Policies;
- analysis and prompt processing to ensure that valid claims are paid in an accurate and timely manner;
- responses to loss mitigation opportunities presented by the insured; and
- management and disposal of acquired real estate.

Radian Guaranty has entered into a Factored Claim Administration Agreement with Fannie Mae that applies to certain loans owned by Fannie Mae that were insured under our Master Policies for which a claim is submitted on or after October 1, 2018. Pursuant to the agreement, for the loans subject to the agreement, Radian Guaranty will determine the amount of covered expenses forming part of a loss (other than unpaid principal balance and delinquent interest) using pre-negotiated expense factors. The expense factors are based on certain characteristics of each covered loan, including the unpaid principal balance at the time of default, property type and location, and property disposition.

Claim Denials. We have the legal right under our Master Policies to deny a claim under certain conditions, such as when the loan servicer does not produce documents necessary to perfect a claim, including evidence that the insured has acquired title to the property, within the time period specified in our Master Policies. Most often, a Claim Denial is the result of a servicer's failure to provide the loan origination file or other critical servicing documents for review. If, after requests by us, the loan origination file or other servicing documents are not provided to us, we generally deny the claim. If we deny a claim, we continue to allow the insured the ability to perfect the claim for a period of time specified in our Master Policies. If the insured successfully perfects the claim on a timely basis, we will process the claim, including a review of the loan to ensure appropriate underwriting and loan servicing. If, after completion of this process, we determine that the claim was not perfected, the insurance claim is denied and we consider the Claim Denial to be final and resolved. Although we may make a final determination internally with respect to a Claim Denial, it is possible that after we have a denied coverage a legal challenge to our decision to deny coverage may be brought within a period of time specified under the terms of our Master Policies.

Rescissions. Under the terms of our Master Policies, we have the legal right, under certain conditions, to unilaterally rescind coverage on our mortgage insurance policies. Typical events that may give rise to our right to rescind coverage include: (i) we insure a loan under one of our Master Policies in reliance upon an application for insurance that contains a material misstatement, misrepresentation or omission, whether intentional or otherwise, or that was issued as a result of an act of fraud or (ii) we find that there was negligence in the origination of a loan that we insured. We also have rights of Rescission arising from a breach of the insured's representations and warranties that are contained in our Master Policies or endorsements thereto and are required with our delegated underwriting program.

If we rescind coverage based on a determination that a loan did not qualify for insurance, we provide the insured with a period of time to challenge, or rebut, our decision. If a rebuttal to our Rescission is received and the insured provides additional information supporting the continuation (i.e., non-rescission) of coverage, we have the claim re-examined internally by a separate, independent investigator. If the additional information supports the continuation of coverage, the insurance is reinstated and if there is a claim, it proceeds to the next step in our claims review process. After completion of this process, if we determine that the loan did not qualify for coverage, the insurance certificate is rescinded (and we issue a premium refund under the terms of our Master Policies) and we consider the Rescission to be final and resolved. Although we may make a final determination internally with respect to a Rescission, it is possible that a legal challenge to our decision to rescind coverage may be brought after we have rescinded coverage during a period of time that is specified under the terms of our Master Policies.

In 2012, we began offering a limited rescission waiver program under our Prior Master Policy for our delegated underwriting customers, in which we agree not to rescind coverage due to non-compliance with our underwriting guidelines so long as the borrower makes 36 consecutive payments (commencing with the initial required payment) from his or her own funds. This program does not restrict our rights to rescind coverage in the event of fraud or misrepresentation in the origination of the loans we insure.

Following the financial crisis, the FHFA and the GSEs identified specific requirements to be included by all private mortgage insurers in their master policies for new mortgage insurance applications received on or after October 1, 2014. Among others, these included specific requirements related to loss mitigation and claims processing activities that limited the potential for Loss Mitigation Activity throughout the private mortgage insurance industry. Radian Guaranty incorporated these principles into its 2014 Master Policy. Radian Guaranty also offers 12-month and 36-month rescission relief programs in accordance with the specified terms and conditions set forth in the 2014 Master Policy. Loans that were already insured prior to the October 1, 2014 effective date of the 2014 Master Policy continue to be subject to the terms and conditions of Radian Guaranty's Prior Master Policy.

In 2017, the GSEs proposed revised GSE Rescission Relief Principles to, among other things, further clarify the circumstances under which mortgage insurers may rescind coverage, and required mortgage insurers to implement these principles into their master policies. Radian Guaranty incorporated these principles into its 2020 Master Policy. Under the 2020 Master Policy, a loan will remain eligible to qualify for 36-month rescission relief on the same terms as are set forth in the 2014 Master Policy. Under the 2020 Master Policy, Radian Guaranty has also included a new 60-month rescission relief program that provides that a loan may be eligible to qualify for rescission relief even if the loan failed to meet the conditions required to

receive 36-month rescission relief. Applications received prior to March 1, 2020, the effective date of the 2020 Policy, will continue to be administered under Radian Guaranty's 2014 Master Policy.

Claim Curtailments. We also have rights under our Master Policies to curtail, and in some circumstances, deny claims due to servicer negligence. Examples of servicer negligence may include, without limitation:

- a failure to report information to us on a timely basis as required under our Master Policies;
- a failure to pursue loss mitigation opportunities presented by borrowers, realtors and/or any other interested parties;
- a failure to pursue loan modifications and/or refinancings through programs available to borrowers or an undue delay in presenting claims to us (including as a result of improper handling of foreclosure proceedings), which increases the interest or other components of a claim we are required to pay; and
- a failure to initiate and diligently pursue foreclosure or other appropriate proceedings within the timeframe specified in our Master Policies.

Although we could seek post-claim recoveries from the beneficiaries of our policies if we later determine that a claim was not valid, because our loss mitigation process is designed to ensure compliance with our policies prior to payment of a claim, historically we have not sought recoveries from the beneficiaries of our mortgage insurance policies once a claim payment has been made.

From time to time, claims management may result in disputes with our customers that ultimately produce litigation or other legal proceedings. See "Item 3. Legal Proceedings."

Customers

The principal customers of our mortgage insurance business are mortgage originators such as mortgage bankers, commercial banks, savings institutions, credit unions and community banks.

Our largest single mortgage insurance customer (including branches and affiliates) measured by primary NIW, accounted for 7.2% of NIW during 2019, compared to 4.7% and 6.8% in 2018 and 2017, respectively. No customer had earned premiums that accounted for more than 10% of our consolidated revenues in 2019, 2018 or 2017.

Since 2009, we have taken steps to diversify our customer base. As a result of these efforts, the percentage of NIW generated by our top 10 customers has decreased from 62.3% in 2009 to 34.3% in 2019. Since 2010, we have added over 900 net new customers and significantly increased the amount of business derived from mid-sized mortgage banks. See "Item 1A. Risk Factors—*Our NIW and franchise value could decline if we lose business from significant customers.*"

Competition

We operate in the highly competitive U.S. mortgage insurance industry. Our competitors primarily include other private mortgage insurers and federal and state governmental agencies, principally the FHA and VA.

In addition to Radian Guaranty, the private mortgage insurers that are currently approved and eligible to write business for the GSEs are:

- Arch MI (includes both Arch Mortgage Insurance Company and United Guaranty Residential Insurance Company);
- Essent Guaranty, Inc.;
- Genworth Financial, Inc.;
- Mortgage Guaranty Insurance Corporation; and
- NMI Holdings, Inc.

We compete directly with other private mortgage insurers primarily on the basis of price, underwriting guidelines, overall service, customer relationships, perceived financial strength (including comparative credit ratings) and reputation. Overall service competition is based on, among other things, effective and timely delivery of products, timeliness of claims payments, customer service, timely and accurate servicing of policies, training, loss mitigation efforts and management and field service expertise. We also believe that service includes our ability to offer services to customers through our Services business that complement our mortgage insurance products.

Pricing has always been and continues to be competitive in the mortgage insurance industry. We monitor various competitive and economic factors while seeking to enhance the long-term value of our portfolio by balancing credit risk, profitability, and volume and capital considerations in developing our pricing and origination strategies. We take a disciplined approach to establishing our premium rates and writing a mix of business that we expect to produce our desired level of NIW and our targeted level of returns on a blended basis. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Mortgage Insurance—Premiums.*” As demonstrated by our strong NIW generated in 2019, we believe we remain well positioned to compete for the NIW being originated today, while at the same time maintaining projected returns on NIW within our targeted ranges. Based on publicly available information, we estimate that our share of NIW within the private mortgage insurance market (excluding refinancings under HARP) was approximately 18.6% for 2019.

Certain of our private mortgage insurance competitors currently have better financial strength ratings than we have and/or are subsidiaries of larger corporations, which may give them access to greater amounts of capital and financial resources than we do at a lower cost of capital (including via off-shore reinsurance vehicles). As a result, they may be better positioned to compete outside of traditional mortgage insurance, including in the private label securitization market or if the GSEs expand their use of, or pursue alternative forms of, credit enhancement outside of private mortgage insurance. In addition, because of tax advantages associated with being off-shore, certain of our competitors have been able to reinsure to their offshore affiliates and achieve higher after-tax rates of return on the NIW they write compared to mortgage insurers such as Radian Guaranty that do not have access to offshore affiliates, which could allow these off-shore competitors to leverage reduced pricing to gain market share while continuing to achieve acceptable returns on NIW.

We also compete with governmental agencies, principally the FHA and the VA. We compete with the FHA and VA on the basis of loan limits, pricing, credit guidelines, terms of our insurance policies and loss mitigation practices. Beginning in 2008, the FHA, which historically had not been a significant competitor, substantially increased its share of the mortgage insurance market to a high of approximately 74% in 2009. Since then, the private mortgage insurance industry generally has been recapturing market share from the FHA, primarily due to: (i) improvements in the financial strength of private mortgage insurers; (ii) the development of new products and marketing efforts directed at competing with the FHA; (iii) increases in the FHA’s pricing; (iv) the U.S. government’s pursuit of legal remedies against FHA-approved lenders related to loans insured by the FHA; and (v) various policy changes at the FHA, including the general elimination of the premium cancellation provision. We believe that better execution for borrowers with higher FICO scores, lender preference and the inability to cancel FHA insurance for certain loans are factors that continue to provide a competitive advantage for private mortgage insurers. Based on these factors and our current pricing strategies, we believe we are well-positioned to continue to effectively compete with the FHA. The FHA’s share of the total insured mortgage market (which includes FHA, VA and private mortgage insurers) was 29% in 2019, compared to 31% in 2018. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Mortgage Insurance—NIW; Origination Market; Penetration Rate.*”

If the competitive position of the FHA is enhanced, it could have a negative effect on our ability to compete with the FHA. See “Regulation—Federal Regulation—*Housing Finance Reform*” for a discussion of several recent developments and proposals that could impact the FHA’s competitive position, including reforms to the process for pursuing legal remedies against lenders, efforts to reduce the market overlap between the FHA and the GSEs and proposed changes to the QM Rule that the CFPB is considering that could result in a broader QM definition for FHA loans than for GSE purchased loans, which could make the FHA a more attractive execution option.

We also have faced increasing competition from the VA. Based on publicly available information, the VA’s share of the total insured mortgage market was 26% in 2019, compared to 25% in 2018. We believe that the VA’s market share has generally been increasing because the VA offers 100% LTV loans and charges a one-time funding fee that can be included in the loan amount with no additional monthly expense, and because of an increase in the number of borrowers that are eligible for the VA’s program.

In addition, as market conditions change, alternatives to traditional private mortgage insurance may become more prevalent, which could reduce the demand for private mortgage insurance. These alternatives include structures commonly referred to as “investor paid mortgage insurance” in which affiliates of traditional mortgage insurers who are not subject to the PMIERS directly insure the GSEs against loss. For additional information about these structures, see “Regulation—Federal Regulation—*Housing Finance Reform.*” It is difficult to predict what other types of credit risk transfer transactions and structures might be used by the GSEs in the future. If any of the credit risk transfer transactions and structures that are being developed were to displace standard primary loan level private mortgage insurance, the amount of insurance we write may be reduced.

See “Item 1A. Risk Factors—*Our mortgage insurance business faces intense competition.*”

Services

Services Business Overview

Overview

Our Services segment is primarily a fee-for-service business that offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain, as described below. These services are primarily provided to mortgage lenders, financial institutions, investors and government entities. In addition, we provide title insurance and settlement services to mortgage lenders as well as directly to consumers.

A key element of our overall business strategy is to use our Services segment to diversify our business and revenue streams by increasing our participation in multiple facets of the residential real estate and mortgage finance markets. We believe that the combination of our mortgage insurance business with our unique set of diversified real estate, title and mortgage services capabilities provides us with an opportunity to become increasingly more relevant to our customers and is a competitive differentiator for us compared to other private mortgage insurance companies.

Beginning in 2017, we initiated a review of the strategic direction of the Services segment and made several decisions with respect to the business strategy that were designed to reposition this business to drive future growth and profitability. As a further step in repositioning the Services segment, we initiated a process in 2019 to evaluate a potential sale of Clayton, through which we provided mortgage services related to loan acquisition, RMBS securitization and distressed asset reviews and servicer and loan surveillance. This sale was completed in January 2020. See Note 7 of Notes to Consolidated Financial Statements for additional information on the Clayton sale and the related financial impacts of the repositioning of our Services segment.

See also “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Services*.”

Services Offered

Real Estate Services. Our real estate services help lenders, investors and real estate agents evaluate, manage, monitor and sell properties. These real estate services include software as a service solutions and platforms, as well as managed services. We provide asset management services, real estate valuation services and real estate brokerage services. Our asset management services and solutions are designed to support the management of the entire REO disposition process, including management of the eviction and redemption process, as well as property preservation and repairs. Our real estate valuation products include: full appraisal products; appraisal review products; hybrid/ancillary appraisal products; automated valuation products; interactive valuation products; and broker price opinions (BPOs). Our real estate brokerage services include technology solutions, real estate data products and real estate transaction services.

Title Services. We also offer a comprehensive suite of insurance and non-insurance title, closing and settlement services for residential mortgage loans. We offer title insurance as well as a full complement of title services that include tax and title data services; centralized recording services; document retrieval; default curative title services; deed reports; and property reports. Our closing and settlement services include electronic execution of some or all mortgage loan closing documents in a digital environment (eClosing), including full eClosing, hybrid eClosing and remote eClosing, as well as more traditional signing services, centralized closing and settlement services and local closing and settlement services.

Mortgage Services. Following the sale of Clayton in January 2020, our mortgage services primarily consist of services related to our single family rental business and contract underwriting to support our mortgage insurance customers.

We offer a full range of services to support the single family rental asset class. Our comprehensive single family rental services provide a centralized, single point of contact for facilitating the valuation, diligence and underwriting services needed to support single family rental securitizations, multi-borrower transactions and warehouse facilities.

We also offer contract underwriting services and compliance reviews to verify that loan file documentation conforms to specified guidelines and regulatory requirements. In our contract underwriting business we underwrite our customers’ mortgage loan application files for secondary market compliance (e.g., for sale to the GSEs), and may concurrently assess the file for mortgage insurance eligibility. Generally, we offer limited indemnification to our contract underwriting customers. See “Mortgage Insurance—Mortgage Insurance Business Overview—*Underwriting—Contract Underwriting*.”

Prior to our January 2020 sale of Clayton, our mortgage services also included transaction management services such as loan review, RMBS securitization and distressed asset reviews as well as servicer and loan surveillance. We provided loan-level due diligence for various asset classes (residential, single family rental and non-residential) as well as servicer surveillance

services, risk management and servicing oversight solutions and asset representation review services in connection with securitizations.

Services Revenue Drivers

Due to the nature of the services provided, our Services arrangements with customers consist primarily of fixed-price contracts. Under fixed-price contracts, we agree to perform the specified services and deliverables for a pre-determined per-unit or per-file price or day rate. To a lesser extent, we utilize percentage-of-sale contracts, under which we are paid a contractual percentage of the sale proceeds upon the sale of each property. These contracts are only used for a portion of our REO management services and our real estate brokerage services. In addition to these fees for services, we earn net premiums on title insurance written by Radian Title Insurance.

In most cases, our contracts with our clients do not include minimum volume commitments and can be terminated at any time by our clients. Although some of our contracts and assignments are recurring in nature, and include repetitive monthly assignments, a significant portion of our engagements are transactional in nature and may be performed in connection with securitizations, loan sales, loan purchases or other transactions. Due to the transactional nature of our business, our Services segment revenues may fluctuate from period to period as transactions are commenced or completed. In addition, our segment revenues are impacted by the volume of real estate transactions in the marketplace, which may fluctuate from period to period.

For additional information on the most significant revenue drivers for our Services business, see “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Results—*Services*.”

Customers

We have a broad range of customers for our Services segment due to the breadth of services we are able to offer across the mortgage and real estate value chain. Our principal third-party customers are:

- Mortgage originators such as mortgage bankers, commercial banks, savings institutions, credit unions and community banks;
- Aggregators, issuers and investors in RMBS, whole loans, and other mortgage-related debt instruments, including the GSEs, private equity, hedge funds, real estate investment trusts and investment banks;
- Single family rental (SFR) lenders, warehouse line borrowers and SFR securitization issuers;
- Mortgage servicers; and
- Real estate brokers and agents.

Our customers include many of the largest financial institutions and participants in the mortgage sector and, as such, our services revenue is concentrated among our largest customers. For the year ended December 31, 2019, the top 10 Services customers generated approximately 33% of the Services segment’s services revenue.

Competition

We believe our Services business is uniquely positioned as a single provider of an array of services to participants across the residential mortgage and real estate value chain. We are not aware of any other mortgage insurance company that provides a comparable range of services to the residential mortgage and real estate industries. However, our Services business has multiple competitors within each of its individual lines of business. Our competitors mainly include small privately-held companies and subsidiaries of large publicly-traded companies.

Following the sale of Clayton in January 2020, our mortgage services primarily consist of single family rental services, for which there are limited competitors, and services related to contract underwriting to support our mortgage insurance customers. Significant competitors for our real estate and title services businesses include:

- *Real Estate Services* - ClearCapital.com, Inc., CoreLogic, Inc., Pro Teck Valuation Intelligence, HouseCanary, Inc., First American Financial Corporation, Black Knight, Inc., VRM Mortgage Services, Fidelity National Financial, Inc., Xome Inc. and ServiceLink
- *Title Services* - First American Financial Corporation, Fidelity National Financial, Inc., Stewart Title Guaranty Company, Old Republic Title Insurance Group, Inc., Westcor Land Title Insurance Company and WFG National Title Insurance Company

Across all business lines, we compete on the basis of industry expertise, price, technology, service levels and relationships. We believe that combining our mortgage insurance franchise with our diversified set of mortgage and real estate products and services provides us with an opportunity to become increasingly relevant to both our Mortgage Insurance and Services customers.

Sales and Marketing

Our sales and marketing efforts are focused on establishing, building and maintaining valuable customer relationships based on customer needs. We are focused on providing customized service and product expertise to our mortgage and real estate business partners, as well as enterprise sales and marketing support for customers who benefit from our spectrum of mortgage and real estate solutions. We expect that our enterprise approach to selling mortgage insurance together with the complementary products and services of our mortgage and real estate services businesses will strengthen our relationships with customers, attract new customers and enhance our ability to compete.

We offer sales and marketing support through a variety of channels:

- Our Mortgage sales team is focused on developing new mortgage insurance relationships and is responsible for supporting our existing mortgage insurance relationships.
- Our Real Estate sales teams are focused on developing new relationships and expanding and supporting existing customer relationship in three areas: title services, asset management services, and valuation services.
- Our Enterprise Sales team focuses on selling Radian's products and services across the mortgage and real estate value chain.

All sales efforts are supported by the following functional areas in order to provide various touch points for our customers, product education, risk management expertise and other customized support:

- Our *Telesales Team* serves customers using any and all of our products and services and is responsible for managing and growing customer relationships and promoting increased customer adoption.
- Our *Marketing and Communications Team* partners with sales and business leaders to develop products and programs that provide increased opportunities for customers and address targeted segments of the market. We work closely with customers to understand their strategic priorities and business objectives while identifying opportunities that will enhance and complement the customers' sales and marketing activities.
- Our *Customer Service and Training Teams* are both experienced and knowledgeable to provide service and educational sessions to our customers. We have designed training programs for our customers to help their employees develop the knowledge and skills to respond to changing market demands. Our learning solutions are provided to customers to promote the role of private mortgage insurance in the marketplace as well as to promote Radian's specific products and offerings. We offer three options for training: instructor-led classroom sessions, instructor-led webinars and self-directed on-demand learning.
- Our *Risk Management Team* offers periodic reviews with customers of their insured mortgage portfolio, including detailed loan performance metrics and servicing portfolio performance.

Our sales team consists of qualified mortgage and real estate professionals with significant experience and customer relationships. All sales personnel are compensated by salary and other incentive-based pay, which may be tied to the achievement of certain company and business objectives, as well as sales goals.

Investment Policy and Portfolio

Our investment portfolio is our primary source of claims paying resources. We seek to manage our investment portfolio to maintain sufficient liquidity within our risk and return tolerances and to satisfy our operating and other financial needs based on our current liabilities and business outlook.

We have developed an investment strategy that uses an asset allocation methodology that considers our business environment and consolidated risks as well as current investment conditions. With respect to our fixed income investments, the following internal investment policy guidelines, among others, are applied at the time of investment:

NAIC Designation	Ratings Equivalent	Internal Policy
1	“A-” and above	At least 75% of Portfolio Market Value
2	“BBB+” to “BBB-”	Not more than 25% of Portfolio Market Value
3 to 6	“BB+” and below	Not more than 10% of Portfolio Market Value

Our portfolio has been constructed to maximize long-term expected returns while maintaining an acceptable risk level. Our investment objectives are to utilize appropriate risk management oversight to optimize after-tax returns, while preserving capital. We target the level of our short-term investments to manage our expected short-term cash requirements.

Our investment policies and strategies are subject to change, depending on regulatory, economic and market conditions and our then-existing or anticipated financial condition and operating requirements, including our current and future tax positions. The investments held at our insurance subsidiaries are also subject to insurance regulatory requirements applicable to such insurance subsidiaries.

Oversight responsibility of our investment portfolio rests with management, and allocations are set by periodic asset allocation studies, calibrated by risk, return and after-tax considerations. The risks we consider include, among others, duration, liquidity, market, interest rate and credit risks. As of December 31, 2019, we internally manage 8.5% of the investment portfolio (the portion of the portfolio largely consisting of U.S. Treasury securities, money market funds and certain exchange-traded funds), with the remainder primarily managed by three external managers. External managers are selected by management based primarily upon the selected allocations, as well as factors such as historical returns and stability of their management teams. Management’s selections are presented to and approved by the Finance and Investment Committee of Radian Group’s board of directors.

At December 31, 2019, our investment portfolio had a cost basis of \$5.5 billion and a carrying value of \$5.7 billion. Our investment portfolio did not include any direct residential real estate or whole mortgage loans at December 31, 2019. At December 31, 2019, 97.2% of our investment portfolio was rated investment grade. The weighted-average duration of the assets in our investment portfolio as of December 31, 2019 was 4.0 years. For additional information about our investment portfolio, see the information that follows, as well as Notes 5 and 6 of Notes to Consolidated Financial Statements.

Investment Portfolio Diversification

The composition of our investment portfolio, presented as a percentage of overall fair value at December 31, 2019 and December 31, 2018, was as follows:

	Year Ended December 31,			
	2019		2018	
	Fair Value	Percent	Fair Value	Percent
(\$ in millions)				
Corporate bonds and commercial paper	\$ 2,554.8	44.6%	\$ 2,738.2	52.9%
Residential mortgage-backed securities	795.5	13.9	353.2	6.8
Other asset-backed securities	759.1	13.3	705.5	13.6
Commercial mortgage-backed securities	642.8	11.2	591.4	11.4
U.S. government and agency securities	342.1	6.0	227.7	4.4
State and municipal obligations (1)	260.4	4.5	324.8	6.3
Money market instruments and certificates of deposit	203.5	3.5	96.2	1.9
Equity securities	157.7	2.8	140.6	2.7
Other investments	9.3	0.2	3.4	—
Total	<u>\$ 5,725.2</u>	<u>100.0%</u>	<u>\$ 5,181.0</u>	<u>100.0%</u>

(1) Primarily consists of taxable state and municipal investments.

Investment Portfolio Scheduled Maturity

The following table shows the scheduled maturities of the securities held in our investment portfolio at December 31, 2019 and December 31, 2018:

	Year Ended December 31,			
	2019		2018	
	Fair Value	Percent	Fair Value	Percent
(\$ in millions)				
Short-term investments	\$ 533.4	9.3%	\$ 538.8	10.4%
Due in one year or less (1)	166.8	2.9	87.3	1.7
Due after one year through five years (1)	961.1	16.8	1,118.8	21.6
Due after five years through ten years (1)	1,134.1	19.8	1,125.5	21.7
Due after ten years (1)	570.6	10.0	517.3	10.0
RMBS (2)	795.5	13.9	353.2	6.8
CMBS (2)	642.8	11.2	591.4	11.4
Other ABS (2)	759.1	13.3	704.7	13.6
Other investments (3)	161.8	2.8	144.0	2.8
Total (4)	<u>\$ 5,725.2</u>	<u>100.0%</u>	<u>\$ 5,181.0</u>	<u>100.0%</u>

(1) Actual maturities may differ as a result of calls before scheduled maturity.

(2) RMBS, CMBS and other ABS are shown separately, as they are not due at a single maturity date.

(3) No stated maturity date.

(4) At December 31, 2019 and December 31, 2018, includes \$66.4 million and \$27.9 million, respectively, of securities loaned to third-party borrowers under securities lending agreements, classified as other assets in our consolidated balance sheets. See Note 6 of Notes to Consolidated Financial Statements for more information.

Investment Portfolio by Rating

The following table provides the ratings of our investment portfolio, presented as a percentage of overall fair value, as of December 31, 2019 and December 31, 2018:

	Year Ended December 31,			
	2019		2018	
	Fair Value	Percent	Fair Value	Percent
(\$ in millions)				
U.S. government / AAA	\$ 2,339.9	40.9%	\$ 1,711.7	33.0%
AA	932.6	16.3	878.8	17.0
A	1,506.5	26.3	1,498.9	28.9
BBB	784.4	13.7	936.0	18.1
Equity securities and other assets	161.8	2.8	155.6	3.0
Total	<u>\$ 5,725.2</u>	<u>100.0%</u>	<u>\$ 5,181.0</u>	<u>100.0%</u>

Enterprise Risk Management

Risk Philosophy, Vision and Appetite

As a financial services organization, risk management is a critical part of our business. The following goals guide our strategy and actions as a risk management organization:

- Embed and continually reinforce a disciplined, corporate-wide risk culture that utilizes an understanding of risk/return tradeoffs to drive quality decisions, utilizing a disciplined approach designed to achieve long-term, through-the-cycle profitability;
- Maintain credit, underwriting, pricing and risk/return disciplines based on sound data and analytics and continuous feedback throughout the organization;
- Proactively monitor origination, portfolio and market trends to identify and mitigate emerging risks;
- Continually refine analytical and technological capabilities, processes and systems to effectively identify, assess and manage risks; and
- Develop and leverage tools and capabilities to analyze the risk/return trade-offs of corporate strategy and business decisions in order to inform and optimize capital allocation.

Our risk appetite is driven by our business strategy, which is established by executive management and overseen by Radian Group's board of directors. Risk appetite is defined as the amount of risk, on a broad level, that an organization is willing to take on in pursuit of value. Based on our risk appetite, management then determines our risk tolerances. Risk tolerances represent the typical measures of risk used to monitor exposure in a particular risk category or for a specific initiative, compared with the stated risk appetite.

Risk Categories

We define our risk appetite qualitatively through the key risk categories where strategic execution can take place. Our key risk categories are credit, financial, strategic, operational, and regulatory and compliance. Rather than treat reputational risk as a distinct category of risk, we view reputational risk as pervasive throughout our entire risk portfolio, as each risk on its own can impact our reputation if not mitigated or managed properly.

Risk Governance

Board of Directors. Radian Group's board of directors is responsible for the general oversight of risks. Our board of directors seeks to understand and oversee the most critical risks relating to our business, allocates responsibilities for the oversight of risks among the full board and its committees, and reviews the systems and processes that management has in place to manage the current risks facing Radian, as well as those that could arise in the future.

The board regularly meets with management to receive reports derived from: (i) our ERM function regarding the most significant risks we are facing, and the steps being taken to assess, manage and mitigate those risks and (ii) the Company's information security function regarding cybersecurity risks and the Company's efforts to mitigate such risks. The full board further considers current and potential future strategic risks facing the Company as part of its annual strategic planning session with management.

Integrated ERM Framework. We have adopted an integrated approach to risk management, which includes, among other things: (i) a centralized ERM function that resides within the office of our Chief Financial Officer and is responsible for overseeing the process for risk identification, assessment, management and mitigation across the organization and (ii) an internal audit function that performs periodic, independent reviews and tests compliance with risk management policies, procedures and standards across the Company.

Our ERM framework is designed to provide executive management with the ability to identify and evaluate the most significant risks we face and to calibrate risk mitigation strategies to account for challenges in the current business environment, as well as external factors that may negatively impact our operations. The risks that fall under the program span the entire spectrum of organizational risks and include risks that may not be easily quantifiable or measurable. These include critical risks that fall into our credit, financial, operational, regulatory and compliance, and strategic risk categories. Enterprise level risk reviews are conducted for both our Mortgage Insurance and Services businesses.

Our ERM process is illustrated in the following chart:



Our ERM program takes a holistic approach to managing risks that we face in our businesses. A cross-functional team, guided by subject matter experts and experienced managers, follows a systematic method to identify, evaluate and monitor both known and emerging risks. Risk assessments and mitigation plans are developed to address these risks. These assessments and plans are subject to review and modification to account for changes in markets and the regulatory environment, as well as other internal or external factors. Risk scoring and validation of the effectiveness of risk management plans through management reporting facilitate program sustainability and promote accountability for risk management activities throughout the Company.

Mortgage Insurance Risk Management

As part of our ERM program, our mortgage insurance business employs a comprehensive risk management function, which is responsible for establishing our credit and counterparty risk policies, monitoring compliance with our policies, managing our insured portfolio and communicating credit related issues to management, Radian Group's board of directors and to our customers.

Risk Origination and Servicing. We believe that understanding our business partners and customers is a key component of managing risk. Accordingly, we assign individual risk managers to specific customers so that they can more effectively perform ongoing monitoring of loan performance, underwriting quality and the risk profile and mix of business of a customer's mortgage insurance applications. This also allows us to address specific needs of individual customers. The risk managers leverage a suite of customer-level reports to monitor trends at the customer level, identify customers who may exceed certain risk tolerances, and share meaningful data with our customers. The risk managers are also responsible for lender corrective action in the event we discover credit performance issues, such as high early payment default levels.

Portfolio Management. We have developed risk and capital allocation models that support our mortgage insurance business. These models provide robust analysis to establish portfolio limits for product type, loan attributes, geographic concentrations and counterparties. We proactively monitor market concentrations across these and other attributes. We also identify, evaluate and negotiate potential transactions for terminating insurance risk and for distributing risk to others, including through reinsurance arrangements. See "*Risk Distribution*" below for more information about the use of reinsurance as a risk management tool in our mortgage insurance business.

As part of our portfolio management function, we monitor and analyze the performance of various risks in our mortgage insurance portfolio. We use this information to develop our mortgage credit risk and counterparty risk policies, and as a component of our default and prepayment analytics.

Credit Policy. We have developed and maintain mortgage-related credit risk policies. These policies reflect our tolerance levels regarding counterparty, portfolio and operational risks involving mortgage collateral. Our credit policy function develops and updates our mortgage insurance eligibility and guidelines through regular monitoring of competitor offerings, customer input regarding lending needs, analysis of historical performance and portfolio trends, quality assurance results, underwriter experience and observations and risk tolerances. The credit policy function works closely with our mortgage insurance underwriters to ensure that underwriting decisions align with risk tolerances and principles.

Quality Assurance. Quality assurance is a key element of our credit analytics function, and as part of our quality control program, we audit individual loan files to examine underwriting decisions for compliance with agreed-upon underwriting guidelines. These audits are conducted across loans submitted through our delegated and non-delegated underwriting channels. Our quality assurance team audits both our customers and our underwriters to monitor quality in our NIW.

Loss Mitigation. We have a dedicated loss mitigation group that works with servicers to identify and pursue loss mitigation opportunities for loans in both our performing and non-performing (defaulted) portfolios. This includes regular surveillance and benchmarking of servicer performance with respect to default reporting, borrower retention efforts, foreclosure alternatives and foreclosure processing. Through this process, we seek to hold servicers accountable for their performance and communicate to servicers identified best practices for servicer performance.

Risk Modeling. We have expertise in the development and deployment of integrated credit and interest rate risk models. Using analytical techniques, we have developed loan level default and prepayment models for a wide range of risk management applications, including portfolio analysis, credit decision making, forecasting, and loss reserving.

Risk Distribution. In our mortgage insurance business, we use reinsurance as a capital and risk management tool to lower the risk profile and financial volatility of our mortgage insurance portfolio through economic cycles. We have distributed risk through third-party quota share and excess-of-loss reinsurance arrangements, as well as in capital markets using mortgage insurance-linked notes transactions. During 2019, we expanded our risk distribution strategy in an effort to optimize the amounts and types of capital and risk distribution deployed against insured risk. The objectives of our risk distribution strategy include: (i) supporting our overall capital plan, including by reducing our cost of capital, increasing capital efficiency and enhancing our projected returns on capital and (ii) reducing portfolio risk and financial volatility through economic cycles. For additional information regarding our reinsurance programs, see Note 8 of Notes to Consolidated Financial Statements.

Cybersecurity Risk Management

Information security is a significant operational risk for financial institutions such as Radian and includes the risk of loss resulting from cyber-attacks. In an effort to mitigate this risk, Radian has built an Information Security Program that is

dedicated to protecting our corporate data as well as data entrusted to us by our customers and partners. At the core of our program is a defense-in-depth strategy, which utilizes multiple layers of security controls to protect data and solutions. Radian utilizes the National Institute of Standards and Technology Cybersecurity Framework (the “NIST CSF”), as a guideline to manage our cybersecurity-related risk. The NIST CSF outlines 98 information security measures over five functions: Identify, Protect, Detect, Respond and Recover. We have developed key security services, including but not limited to, Enterprise Data Protection, Vulnerability Management and Application Security, Managed Threat Detection and Incident Response. We test our incident response readiness and reporting through table top exercises, external and internal penetration testing and other means in our efforts to ensure that risks and incidents are escalated and communicated to appropriate personnel.

Our commitment to growing and maintaining our Information Security Program extends across the organization. Our core Information Security Team is comprised of industry-certified practitioners who are committed to adopting security technologies and practices that meet regulatory standards. We have an Information Security and Resilience Committee comprised of Company executives, cross-functional Incident Response teams, and strong governance mechanisms designed to ensure compliance with our security policies and protocols. Additionally, the Radian Group board of directors is engaged in the Information Security Program’s oversight and receives regular updates and reporting from the Company’s Chief Information Security Officer on information security strategies, defense initiatives, event preparedness and continuous improvement efforts. While we have an Information Security Program in place in order to attempt to prevent, detect and respond to unauthorized use or disclosure of confidential information, including non-public personal information, there can be no assurance that such use or disclosure will not occur. See “Item 1A. Risk Factors—*We could incur significant liability or reputational harm if the security of our information technology systems is breached, including as result of a cyberattack, or we otherwise fail to protect confidential information, including non-public personal information that we maintain.*”

Regulation

We are subject to comprehensive regulation by both federal and state regulatory authorities. Set forth below is a description of significant state and federal regulations and other requirements of the GSEs that are applicable to our businesses. The descriptions below are qualified in their entirety by reference to the full text of the laws and regulations discussed. In Item 1A. Risk Factors, see “—*Our insurance subsidiaries are subject to comprehensive state insurance regulations and other requirements, which we may fail to satisfy*” and “—*Legislation and administrative and regulatory changes and interpretations could impact our businesses.*”

State Regulation

Overview of State Insurance Regulation and Our Insurance Subsidiaries

We and our insurance subsidiaries are subject to comprehensive regulation by the insurance departments in the various states where they are licensed to transact business. Insurance laws vary from state to state, but generally grant broad supervisory powers to agencies or officials to examine insurance companies and enforce rules or exercise discretion affecting almost every significant aspect of the insurance business. These regulations principally are designed for the protection of policyholders, rather than for the benefit of investors.

Insurance regulations address, among other things, the licensing of companies to transact business, claims handling, reinsurance requirements, premium rates and policy forms offered to customers, financial statements, periodic reporting, permissible investments and adherence to financial standards relating to surplus, dividends and other measures of solvency intended to assure the satisfaction of obligations to policyholders.

Our insurance subsidiaries’ premium rates and policy forms are generally subject to regulation in every state in which they are licensed to transact business. These regulations are intended to protect policyholders against excessive, inadequate or unfairly discriminatory rates and to encourage competition in the insurance marketplace. In most states where our insurance subsidiaries are licensed, premium rates and policy forms must be filed with the state insurance regulatory authority and, in some states, must also be approved before their use. With respect to mortgage insurance, premium rates may be subject to actuarial justification, generally on the basis of the mortgage insurer’s loss experience, expenses and future projections. In addition, states may assess how rates are being charged to various customers based on whether they are “similarly situated” and also may evaluate general default experience in the mortgage insurance industry in assessing the premium rates charged by mortgage insurers. As to title insurance, premium rates and policy forms must be filed with state insurance regulatory authorities and, in some states, must also be approved before their use. Policy forms require approval to ensure that the coverage and exceptions conform to state insurance regulations. Premium rates subject to approval often must be supported by actuarial data or a study of financial impact of the premium rate on the Company.

Each insurance subsidiary is required by the insurance regulatory authority of its state of domicile, and the insurance regulatory authority of each other jurisdiction in which it is licensed to transact business, to make various filings with those insurance regulatory authorities and with the NAIC, including quarterly and annual financial statements prepared in accordance with SAP. In addition, our insurance subsidiaries are subject to examination by the insurance regulatory authority of their state of domicile, as well as each of the states in which they are licensed to transact business.

Radian Group is an insurance holding company and our mortgage insurance subsidiaries and title insurance company belong to an insurance holding company system. All states regulate insurance holding company systems, including by taking into consideration the non-insurer holding companies within that system. These laws generally require each insurance subsidiary within an insurance holding company system to register with the insurance regulatory authority of its domiciliary state, and to furnish to the regulators in these states applicable financial statements, statements related to intercompany transactions and other information concerning the holding company and its affiliated companies within the holding company system that may materially affect the operations, management or financial condition of insurers or the holding company.

We are subject to the insurance holding company laws of Pennsylvania and Ohio because all of our mortgage insurance subsidiaries are domiciled in Pennsylvania and Radian Title Insurance is domiciled in Ohio. These insurance holding company laws regulate, among other things, certain transactions between Radian Group, our insurance subsidiaries and affiliates. The holding company laws of Pennsylvania and Ohio also govern certain transactions involving Radian Group's common stock, including transactions that constitute a "change of control" of Radian Group and, consequently, a "change of control" of its insurance subsidiaries. Specifically, no person may, directly or indirectly, seek to acquire "control" of Radian Group or any of its insurance subsidiaries unless that person received prior approval after filing a statement and other documents with the Pennsylvania Insurance Department and, in the case of a change of control involving Radian Group or Radian Title Insurance, the Ohio Department of Insurance. Under Pennsylvania's and Ohio's insurance statutes, "control" is defined broadly and is "presumed to exist if any person, directly or indirectly, owns, controls, holds with power to vote or holds proxies representing 10% or more of the voting securities" of a holding company of a Pennsylvania or Ohio domiciled insurer. The statute further defines "control" as the "possession, direct or indirect, of the power to direct or cause the direction of the management and policies of" an insurer.

In addition, material transactions between us or our affiliates and our insurance subsidiaries or among our insurance subsidiaries are subject to certain conditions, including that they be "fair and reasonable." These conditions generally apply to all persons controlling, or who are under common control with, us or our insurance subsidiaries. Certain transactions between us or our affiliates and our insurance subsidiaries may not be entered into unless the Pennsylvania Insurance Department or Ohio Department of Insurance, as applicable, is given 30 days' prior notice and does not disapprove the transaction during that 30-day period.

Pennsylvania and Ohio regulations require that we identify the material risks within the insurance holding company system that could pose enterprise risk to the insurer. Among other things, Pennsylvania and Ohio require that insurers domiciled in their states maintain a risk management framework and conduct an Own Risk and Solvency Assessment ("ORSA") annually in accordance with applicable NAIC requirements. Ohio regulations, and beginning in 2020 also Pennsylvania regulations, require that insurers domiciled within their states provide an annual summary of the corporate governance structure, risk oversight and certain other policies and practices of the insurer or insurance group, known as the Corporate Governance Disclosure, or "CGAD."

All of our mortgage insurance subsidiaries are domiciled in Pennsylvania. Listed below are our principal insurance companies as of December 31, 2019:

- *Radian Guaranty.* Radian Guaranty is our primary mortgage insurance company, and is a direct subsidiary of Radian Group. Radian Guaranty is our only mortgage insurance company that is currently eligible to provide first-loss mortgage insurance on GSE loans. It is a monoline insurer, restricted by the laws of certain states to writing first-lien residential mortgage guaranty insurance. Radian Guaranty is authorized to write mortgage guaranty insurance (or in states where there is no specific authorization for mortgage guaranty insurance, the applicable line of insurance under which mortgage guaranty insurance is regulated) in all 50 states, the District of Columbia and Guam.
- *Radian Reinsurance.* Radian Reinsurance is a direct subsidiary of Radian Group and is a licensed credit insurer. Prior to January 31, 2020, Radian Reinsurance primarily provided reinsurance to Radian Guaranty for loans where the mortgage insurance covered in excess of 25% of the total mortgage. We also use Radian Reinsurance to participate in the credit risk transfer programs developed by Fannie Mae and Freddie Mac, and therefore, Radian Reinsurance provides mortgage credit risk insurance on GSE loans through these programs. See "Mortgage

Insurance—Mortgage Insurance Business Overview—*Mortgage Insurance Products—Other Mortgage Insurance Products—GSE Credit Risk Transfer*” for more information about these programs.

- *Radian Insurance*. Radian Insurance is a direct subsidiary of Radian Group and insures a small remaining amount of second-lien mortgage loan risk.

In addition, we have the following mortgage insurance subsidiaries, each of which had no RIF as of December 31, 2019: Radian Investor Surety Inc., Radian Mortgage Guaranty Inc., Radian Guaranty Reinsurance Inc. and Radian Mortgage Assurance.

As part of our title services we offer title insurance through Radian Title Insurance, an Ohio domiciled title insurance underwriter and settlement services company that is licensed to issue title insurance policies in 39 states and the District of Columbia. Radian Title Insurance is a wholly owned subsidiary of Radian Title Services Inc., which we acquired on March 27, 2018.

Mortgage Insurance Capital Requirements and Dividends

Under state insurance regulations, Radian Guaranty is required to maintain minimum surplus levels and, in certain states, a minimum ratio of statutory capital relative to the level of net RIF, or Risk-to-capital. Sixteen states currently impose a Statutory RBC Requirement. The most common Statutory RBC Requirement is that a mortgage insurer’s Risk-to-capital may not exceed 25 to 1. In certain of the RBC States, Radian Guaranty must satisfy a MPP Requirement. The statutory capital requirements for the non-RBC States are de minimis (ranging from \$1 million to \$5 million); however, the insurance laws of these states generally grant broad supervisory powers to state agencies or officials to enforce rules or exercise discretion affecting almost every significant aspect of the insurance business, including the power to revoke or restrict an insurance company’s ability to write new business. Unless an RBC State grants a waiver or other form of relief, if a mortgage insurer, such as Radian Guaranty, is not in compliance with the Statutory RBC Requirement of that state, it may be prohibited from writing new mortgage insurance business in that state. Radian Guaranty’s domiciliary state, Pennsylvania, is not one of the RBC States. In 2019 and 2018, the RBC States accounted for approximately 53.2% and 55.0%, respectively, of Radian Guaranty’s total primary NIW. As of December 31, 2019, Radian Guaranty’s Risk-to-capital was 13.6 to 1, and Radian Guaranty was in compliance with all applicable Statutory RBC Requirements.

The NAIC is in the process of reviewing the minimum capital and surplus requirements for mortgage insurers and considering changes to the Model Act. In December 2019, a working group of state regulators released exposure drafts of a revised Model Act, including new proposed mortgage guaranty insurance capital requirements for mortgage insurers. The process for developing this framework is ongoing, and the outcome of this process remains uncertain. As proposed, the capital requirements set forth in the current exposure draft are impacted, among other things, by changes in the economic and housing environment, including changes in home prices and incomes. Given the current economic and housing environment, if the exposure draft of the new Model Act was adopted and in effect today, we do not believe that the capital requirements imposed by the new Model Act would exceed those of the current PMIERS financial requirements. See “Item 1A. Risk Factors—*Our insurance subsidiaries are subject to comprehensive state insurance regulations and other requirements, which we may fail to satisfy.*”

Under Pennsylvania’s insurance laws, dividends and other ordinary distributions may only be paid out of an insurer’s positive unassigned surplus, measured as of the end of the prior fiscal year, unless the Pennsylvania Insurance Department approves the payment of dividends or other distributions from another source. While all proposed dividends and distributions to stockholders must be filed with the Pennsylvania Insurance Department prior to payment, if a Pennsylvania domiciled insurer had positive unassigned surplus as of the end of the prior fiscal year, then unless the prior approval of the Pennsylvania Insurance Department is obtained, such insurer could only pay dividends or other distributions during any 12-month period in an aggregate amount less than or equal to the greater of: (i) 10% of the preceding year-end statutory policyholders’ surplus or (ii) the preceding year’s statutory net income.

At December 31, 2019, although Radian Guaranty and Radian Reinsurance had statutory policyholders’ surplus of \$637.7 million and \$455.6 million, respectively, both companies had negative unassigned surplus balances of \$503.3 million and \$50.4 million, respectively, primarily due to the need for mortgage guaranty insurers to establish and maintain contingency reserves, as further discussed below. Therefore, no dividends or other ordinary distributions can be paid by these subsidiaries in 2020. In light of Radian Guaranty’s negative unassigned surplus related to operating losses in prior periods and the ongoing need to set aside contingency reserves, we do not anticipate that Radian Guaranty will be permitted under applicable insurance laws to pay ordinary dividends to Radian Group for the foreseeable future. Based on the typical 10-year holding requirement, Radian Guaranty is scheduled to release contingency reserves to unassigned surplus in material amounts beginning in 2024, which should accelerate the reduction of its negative unassigned surplus. Under Pennsylvania’s insurance laws, an insurer may request

approval to pay an Extraordinary Distribution, subject to the approval of the Pennsylvania Insurance Department. In April 2019, Radian Guaranty sought and received such approval to return capital by paying a \$375 million Extraordinary Distribution to Radian Group on April 30, 2019. Further, in January 2020, the Pennsylvania Insurance Department approved a \$465 million Extraordinary Distribution from Radian Reinsurance to Radian Group, which was paid on January 31, 2020. See Note 18 of Notes to Consolidated Financial Statements for more information on contingency reserve requirements, as well as additional information about distributions of capital paid from our insurance subsidiaries in 2019, 2018 and 2017.

All of our other mortgage insurance subsidiaries also had negative unassigned surplus at December 31, 2019. Therefore, no dividends or other ordinary distributions can be paid by these subsidiaries in 2020 without approval from the Pennsylvania Insurance Department.

For statutory reporting, mortgage insurance companies are required annually to set aside contingency reserves in an amount equal to 50% of earned premiums. Such amounts cannot be released into surplus for a period of 10 years, except when loss ratios exceed 35%, in which case the amount above 35% can be released under certain circumstances. The contingency reserve, which is designed to be a reserve against catastrophic losses, essentially restricts dividends and other ordinary distributions by mortgage insurance companies. We classify the contingency reserves of our mortgage insurance subsidiaries as a statutory liability. At December 31, 2019, Radian Guaranty and Radian Reinsurance had contingency reserves of \$2.6 billion and \$360.3 million, respectively.

Title Insurance Capital Requirements and Dividends

Radian Title Insurance is required to maintain Statutory Premium Reserves (“SPR”), calculated as a percentage of gross premiums collected. The SPR requirements are set by each state, with the most common being 7%. The SPR is then recovered based on a release schedule, amortized over 20 years. In addition to the SPR, Radian Title Insurance is subject to periodic reviews of certain financial performance ratios, and the states in which it is licensed can impose capital requirements on Radian Title Insurance based on the results of those ratios.

Under Ohio’s insurance laws, dividends and other ordinary distributions may only be paid out of an insurer’s positive unassigned surplus, measured as of the end of the prior fiscal year, unless the Ohio Department of Insurance approves the payment of dividends or other ordinary distributions from another source. While all proposed dividends and distributions to stockholders must be filed with the Ohio Department of Insurance prior to payment, if an Ohio domiciled insurer had positive unassigned surplus as of the end of the prior fiscal year, then unless the prior approval of the Ohio Department of Insurance is obtained, such insurer could only pay dividends or other distributions during any 12-month period in an aggregate amount less than or equal to the greater of: (i) 10% of the preceding year-end statutory policyholders’ surplus or (ii) the preceding year’s statutory net income. Radian Title Insurance had negative unassigned surplus at December 31, 2019 of \$23.0 million, therefore it is unable to pay dividends or other ordinary distributions in 2020 without approval from the Ohio Department of Insurance.

In September of 2017, the New York State Department of Financial Services (“DFS”) issued 11 NYCRR 228 (“Regulation 208”) which regulates title insurance marketing practices, expenses and transaction related charges in the state of New York. Regulation 208 limits or bans title underwriters and agents from charging consumers certain title and closing related fees, and Regulation 208 contains strict rules around marketing expenses aimed at restricting or stopping certain marketing practices in the title industry. Radian Settlement Services and Radian Title Insurance have adjusted their transaction fees and marketing practices and expenses to comply with Regulation 208.

Real Estate Services

Certain of our Services subsidiaries are subject to regulation and oversight by the states where they conduct their businesses, including requirements to be licensed and/or registered in the states in which they conduct operations.

Our real estate brokerage businesses provide services in all 50 states and the District of Columbia, and they and their designated brokers are required to hold licenses and conduct their brokerage business in conformity with the applicable license laws and administrative regulations of the states in which they are conducting their business. As a licensed real estate brokerage, Red Bell receives residential real estate information from various multiple listing services (“MLS”), which it uses to broker real estate transactions and provide valuation products and services, pursuant to the terms of agreements with the MLS providers. These MLS agreements include restrictions on the permitted use of the MLS information obtained through these agreements and impose requirements on the business of real estate brokerages in order to maintain eligibility to continue to receive the MLS information. If these agreements were to terminate or Red Bell otherwise were to lose access to this information, it could negatively impact Red Bell’s ability to conduct its business.

Radian Settlement Services and its subsidiary provide title services and these entities are required to hold licenses in the jurisdictions where they operate their business. Title insurance agency licensing is primarily regulated by states in which the

services are being offered, with licensing and registration typically within the jurisdiction of each state's department of insurance. Radian Settlement Services is domiciled and licensed in Pennsylvania as a resident title insurance agency and, together with its subsidiary, is licensed in 32 additional states.

In 2018, Radian acquired Independent Settlement Services, a national appraisal and title management services company. Independent Settlement Services is licensed to provide appraisal management services in all 50 states and the District of Columbia. Real estate appraisal management statutes and regulations vary from state to state, but generally grant broad supervisory powers to agencies or officials to examine companies and enforce rules. While these businesses are generally state regulated, the Dodd-Frank Act established minimum requirements to be implemented by states regarding the registration and supervision of appraisal management companies. Most states have based their legislation on model legislation developed by the Appraisal Institute for the registration and oversight of appraisal management companies.

Radian Lender Services LLC provides third party underwriting and loan processing services to lenders, including services that may be deemed loan origination activities as defined by the SAFE Act (discussed below) and state law equivalents. This entity and its employees that provide our contract underwriting and loan processing services are compliant with the SAFE Act for underwriting in all 50 states and the District of Columbia and compliant for loan processing in 44 states and the District of Columbia. See “—Federal Regulation—*The SAFE Act*.”

Cybersecurity

The DFS issued cybersecurity regulations that became effective March 1, 2017 and apply to all financial institutions and insurance companies licensed under the New York Banking, Insurance, and Financial Services Laws, including Radian Guaranty and certain of our other subsidiaries. The regulations require covered entities to, among other things: establish a cybersecurity program; adopt a written cybersecurity policy; designate a Chief Information Security Officer responsible for implementing, overseeing and enforcing the cybersecurity program and policy; and have policies and procedures designed to ensure the security of information systems and nonpublic information accessible to, or held by, third-parties, along with a variety of other requirements to protect the confidentiality, integrity and availability of information systems.

Privacy

In June of 2018, the State of California enacted the California Consumer Privacy Act (“CCPA”) which applies to any company that does business in California and meets certain threshold requirements. The CCPA became effective January 1, 2020. The California Attorney General has issued proposed implementing regulations which must be finalized on or before July 1, 2020, which is also the first day that the California Attorney General can enforce the CCPA. We believe Radian Group and certain of its affiliates may be deemed covered businesses under the CCPA. The CCPA creates a new privacy framework for covered businesses that collect, sell or disclose personal information of California consumers. The definition of protected “personal information” under the CCPA is broad, and the CCPA creates five new categories of data privacy rights for California consumers: the right to: (i) know what personal information is being collected about them, whether their personal information is sold or disclosed and to whom; (ii) access a copy of their personal information; (iii) delete their personal information from business servers and service providers, unless it is necessary to maintain the information under enumerated exceptions; (iv) opt out of the sale of their personal information to third parties; and (v) have equal access and service if they exercise their rights. Companies subject to the CCPA are required to establish procedures to enable them to comply with a California consumer's data privacy rights, including by disclosing the privacy practices of the entity and responding to consumer requests within prescribed timeframes. The CCPA provides a private right of action for data breaches, including statutory or actual damages, and public enforcement by the California Attorney General for other violations. To comply with the CCPA we have developed new policies and procedures, and have implemented operational changes. In addition to California, other states have started to move forward with new privacy regulations and federal regulators have proposed draft federal privacy legislation, all of which, if adopted, could impact our businesses or those of our customers.

GSE Requirements

PMIERS—Private Mortgage Insurer Eligibility Requirements. As the largest purchasers of conventional mortgage loans, and therefore, the main beneficiaries of private mortgage insurance, the GSEs impose eligibility requirements that private mortgage insurers must satisfy in order to be approved to insure loans purchased by the GSEs. The PMIERS initially became effective December 31, 2015, and aim to ensure that approved insurers will possess the financial and operational capacity to serve as strong counterparties to the GSEs throughout various market conditions. The PMIERS are comprehensive, covering virtually all aspects of the business and operations of a private mortgage insurer of GSE loans, including internal risk management and quality controls, the relationship between the GSEs and the approved insurer and the approved insurer's financial condition. The PMIERS contain extensive requirements related to the conduct and operations of our mortgage insurance business, including operational requirements in areas such as claim processing, loss mitigation, document retention,

underwriting, quality control, reporting and monitoring, among others. In addition, the PMIERS prohibit private mortgage insurers from engaging in certain activities such as insuring loans originated or serviced by an affiliate (except under certain circumstances) and require private mortgage insurers to obtain the prior consent of the GSEs before taking certain actions, which may include entering into various intercompany agreements and settlements with respect to GSE insured loans and commuting or reinsuring risk, among others. Radian Guaranty currently is an approved mortgage insurer under the PMIERS.

The PMIERS financial requirements require that a mortgage insurer's Available Assets meet or exceed its Minimum Required Assets. The PMIERS financial requirements include increased financial requirements for defaulted loans, as well as loans with a higher likelihood of default and/or certain credit characteristics, such as higher LTVs and lower FICO scores, and for loans originated after January 1, 2016 that are insured under lender-paid mortgage insurance policies not subject to automatic termination under the HPA. Therefore, if our mix of business includes a higher percentage of loans that are subject to these increased financial requirements, it increases the Minimum Required Assets and/or the amount of Available Assets that Radian Guaranty is required to hold. See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Overview—*Operating Environment*." The PMIERS financial requirements also impose limitations on the credit that is granted for certain Available Assets. For example, the PMIERS limit the amount of credit given to surplus notes issued by a mortgage insurer to 9% of Minimum Required Assets, and therefore, based on the balance of its surplus notes currently outstanding, Radian Guaranty would not receive any further credit under the PMIERS for any additional capital it received under additional surplus notes it may issue.

The GSEs have significant discretion under the PMIERS and may amend the PMIERS at any time, although the GSEs have communicated that for material changes, including material changes affecting Minimum Required Assets, they will generally provide written notice 180 days prior to the effective date and engage in a discussion and comment process with the private mortgage insurers regarding the proposed changes prior to finalizing them. The most recent revisions to PMIERS, or PMIERS 2.0, became effective on March 31, 2019. PMIERS 2.0 eliminated any credit for future premiums for insurance policies written prior to and including 2008, which had been permitted under the prior PMIERS requirements. In addition, among other changes, defaulted loans in FEMA-declared major disaster areas require a reduced level of Minimum Required Assets under PMIERS 2.0, subject to certain requirements. It is possible that the GSEs may seek to amend PMIERS 2.0 in order to align the financial requirements of the PMIERS with the capital requirement set forth in the CCF once it is finalized.

We have entered into reinsurance transactions, including quota share and excess-of-loss reinsurance arrangements, as part of our capital and risk management activities, including to manage Radian Guaranty's capital position under the PMIERS financial requirements. The initial and ongoing credit that we receive under the PMIERS financial requirements for these transactions is subject to the periodic review of the GSEs.

Although we expect Radian Guaranty to retain its eligibility status with the GSEs and to continue to comply with the PMIERS financial requirements, including as they may be updated, we cannot provide assurance that this will occur. See "Item 1A. Risk Factors—*Radian Guaranty may fail to maintain its eligibility status with the GSEs.*"

Other GSE Business Practices and Requirements. The GSEs, acting independently or through their conservator, the FHFA, have the ability to change their business practices and requirements in ways that impact our business. Examples of more recent changes or proposed changes in the GSEs' business practices and requirements are:

- the revised GSE Rescission Relief Principles that, among other things, further clarify the circumstances under which mortgage insurers may rescind insurance coverage, and have been incorporated into our 2020 Master Policy that will be effective for applications received on or after March 1, 2020;
- the changes to the PMIERS under PMIERS 2.0 that became effective on March 31, 2019; and
- changes to underwriting standards on mortgages they purchase, including for example, the GSEs' decision to expand credit in 2017 by purchasing a larger portion of loans with debt-to-income ratios greater than 45%.

For information on additional potential changes in GSE business practices and requirements that could impact our business, see "Item 1A. Risk Factors—*Changes in the charters, business practices, or role of the GSEs in the U.S. housing market generally, could significantly impact our mortgage insurance business.*"

Federal Regulation

Housing Finance Reform

The federal government plays a significant role in the U.S. housing finance system through, among other things, the involvement of the FHFA and GSEs, the FHA and the VA. The GSEs' charters generally prohibit them from buying low down payment mortgage loans without certain forms of credit enhancement, the primary form of which has been private mortgage

insurance. There has been ongoing debate about the roles that the federal government and private capital should play in the housing finance system, and in recent years, there generally has been broad policy consensus that there is a need to increase the role of private capital in the system. As a significant source of first-loss private capital in the existing housing finance system, private mortgage insurance is well-positioned in recent legislative proposals to continue to provide the type of coverage that has become the predominant form of first-loss credit enhancement in the system, commonly referred to as “standard coverage.” However, to the extent new legislative action alters the existing GSE charters without explicit preservation of the role of private mortgage insurance for high-LTV loans, our business could be adversely affected. Furthermore, it is possible legislative or administrative action, such as the imposition of higher guarantee fees or loan level price adjustments, changes to loan limits, or a significant tightening of the credit underwriting standards for the GSEs, could result in better execution or price to consumers for non-GSE executions, including the “private label” secondary market or loans insured by the FHA, VA, or U.S. Department of Agriculture (“USDA”). In such a scenario, our business could be adversely impacted.

Since FHFA was appointed as conservator of the GSEs in September 2008, there has been a wide range of legislative proposals to reform the U.S. housing finance market, including proposals for GSE reform ranging from some that advocate nearly complete privatization and elimination of the role of the GSEs to others that support a system that combines a federal role with private capital. Recent proposals have focused on making the federal guaranty of mortgage backed securities explicit, with some models proposing the repurposing of the GSEs to have them compete with other secondary market guarantors and other models proposing a broad implementation of the multiple issuer structure that exists with Ginnie Mae backed loans.

In September 2019, the U.S. Department of the Treasury and the Department of Housing and Urban Development (“HUD”) released plans (the “Treasury Plan” and “HUD Plan” respectively, and collectively, the “Plans”) to reform the housing finance system, and with respect to the Treasury Plan, to recapitalize the GSEs and release them from conservatorship after certain conditions were met. The Plans, which include actions that may be taken administratively (without Congressional action) and legislatively through Congressional action, call for, among other items: (i) recapitalizing the GSEs in preparation for their release from conservatorship; (ii) a greater role for private capital in limiting the GSEs’ risk profile and taxpayer exposure; (iii) a greater coordination of housing policy between the FHFA and HUD, including a reduction in the market overlap between the FHA and the GSEs; (iv) a better defined role for the FHA in adhering to its core mission of serving low and moderate income borrowers; and (v) increased transparency by the GSEs to support a more level playing field with private capital. Under current law, the FHFA has significant discretion with respect to the future state of the GSEs, including the ability to place the GSEs into receivership without further legislative action. Leadership at the FHFA and HUD have stated that they plan to use the Plans to guide the direction and activities of the GSEs and FHA. With the Plans serving as a roadmap, we expect HUD and FHFA will continue to take actions to shape the role of the FHA and GSEs in the housing finance market and to prepare the GSEs to exit conservatorship. While we believe that private capital is viewed favorably as a critical component of the current and future housing finance market, actions taken in furtherance of the Plans could impact our business, financial condition and results of operations.

The U.S. Department of the Treasury currently owns the preferred stock of the GSEs pursuant to the terms of a senior preferred stock purchase agreement and was prohibited from selling its stake in the GSEs until January 1, 2018. Prior to a December 2017 amendment to the senior preferred stock purchase agreement that allowed each GSE to retain a \$3 billion capital reserve, the GSEs were required under the senior preferred stock purchase agreement to sweep all profits to the U.S. Department of the Treasury. In September 2019, the U.S. Department of the Treasury and the FHFA further amended the senior preferred stock purchase agreement to suspend the quarterly “net worth sweep” and allow the GSEs to build a capital reserve of up to \$45 billion collectively. This suspension of the net worth sweep is consistent with the FHFA’s stated goal of recapitalizing the GSEs in order to prepare them to exit conservatorship. Additional steps are likely to be taken in furtherance of this objective, including potential further amendments to the terms of the senior preferred stock purchase agreement and the possibility that the GSEs may seek to raise new capital through one or more private or public offerings. In addition, FHFA leadership has stated that while the GSEs’ capital position remains limited compared to the amount of risk they hold, the GSEs should make risk-based decisions commensurate with their limited capital positions, which could influence the type of risk the GSEs are willing to write and the FHFA’s oversight decisions regarding the GSEs. For example, the FHFA may seek to impose limitations on the ability of the GSEs to enter into new pilot programs or may seek to allocate a portion of the high-LTV market to the FHA. It is difficult to predict what actions the FHFA or GSEs may take in light of the GSEs’ limited capital position and the objective to reposition them for release from conservatorship; however, these actions could reduce the amount of business done by the GSEs or make execution through the FHA or the private securitization market more attractive, which could adversely affect our mortgage insurance business.

In June 2018, the FHFA released a proposed capital rule to establish a CCF that would apply minimum capital requirements for the GSEs once they exit conservatorship. This rule proposed both risk-based capital requirements and revisions to the minimum leverage capital requirement for the GSEs. While these requirements would only take effect once the

GSEs exit conservatorship, in the absence of greater transparency, we believe the proposed CCF provides a reasonable basis for understanding how the GSEs are currently conducting their operations, including their decisions with respect to capital allocation and pricing. In December 2019, FHFA announced that it plans to re-propose this capital rule in 2020. If and when the CCF is finalized, it is reasonably possible that the GSEs will seek to more closely align the capital requirements of the PMIERS with the CCF, which could result in further changes to the PMIERS.

In the absence of comprehensive housing finance reform legislation, the FHFA has made changes to the business and operations of the GSEs. As a mechanism for implementing changes, the FHFA uses the process of annually releasing a strategic plan for conservatorship and setting goals for the GSEs to meet (the “Scorecard”) as part of its ongoing regulation. In October 2019, the FHFA released its 2020 Scorecard for the GSEs with objectives that largely align with the recommendations set forth in the Treasury Plan discussed above. Among other things, the 2020 Scorecard includes goals to support Competitive, Liquid, Efficient, and Resilient (CLEAR) national housing finance markets, and to prepare to exit the GSEs from conservatorship. In addition, the 2020 Scorecard calls for the GSEs to transfer a meaningful portion of credit risk, also known as “credit risk transfer,” to the private sector. The mandate for meaningful credit risk transfer builds upon the goals set in each of the last four years for the GSEs to transfer portions of their mortgage credit risk to the private sector by experimenting with different forms of transactions and structures. We continue to participate in the credit risk transfer programs developed by Fannie Mae and Freddie Mac. For more information about these programs, see “Mortgage Insurance—Mortgage Insurance Business Overview—Mortgage Insurance Products—Other Mortgage Insurance Products—Non-Traditional Risk.”

In addition, alternatives to traditional mortgage insurance may be introduced that compete with private mortgage insurance. In 2018, Freddie Mac and Fannie Mae announced the launch of pilot programs, Integrated Mortgage Insurance (“IMAGIN”) and Enterprise-Paid Mortgage Insurance (“EPMI”), respectively, as alternative ways for lenders to sell to the GSEs loans with LTVs greater than 80%. These investor-paid mortgage insurance programs, in which insurance is acquired directly by each GSE, have many of the same features as and represent an alternative to traditional private mortgage insurance products that are provided to individual lenders. Participants in IMAGIN and EPMI are not subject to compliance with the PMIERS, which may create a competitive disadvantage for private mortgage insurers if these pilot programs are expanded.

It is difficult to predict what other types of credit risk transfer transactions and structures might be used by the GSEs in the future. If any of the credit risk transfer transactions and structures that are being developed were to displace standard primary loan level private mortgage insurance, the amount of insurance we write may be reduced. However, the GSEs also have solicited comments regarding the possibility of including additional mortgage insurance in excess of standard coverage amounts through a concept known as “deeper cover mortgage insurance,” which could increase the amount of insurance we write. As a result, it is difficult to predict the impact of any credit risk transfer products and transactions implemented by the GSEs.

In Item 1A. Risk Factors, see “—Changes in the charters, business practices, or role of the GSEs in the U.S. housing market generally, could significantly impact our mortgage insurance business” and “—Our mortgage insurance business faces intense competition.”

FHA

Private mortgage insurance competes with the single family mortgage insurance programs of the FHA. As such, the FHA is one of the biggest competitors to our mortgage insurance business. We compete with the FHA on the basis of loan limits, pricing, credit guidelines, terms of our insurance policies and loss mitigation practices. Since 2013, the loan limits for FHA-insured loans and the loan limits for GSE conforming loans have been substantially the same. It is possible that, in the future, Congress could impose different loan limits for FHA loans than for GSE conforming loans as it has done in the past, which could impact the competitiveness of private mortgage insurance in relation to FHA programs.

Beginning in 2008, the FHA, which historically had not been a significant competitor, substantially increased its market share of the insured mortgage market. Since then, the private mortgage insurance industry generally has been recapturing market share from the FHA, primarily due to: (i) improvements in the financial strength of private mortgage insurers; (ii) the development of new products and marketing efforts directed at competing with the FHA; (iii) increases in the FHA’s pricing; (iv) the U.S. government’s pursuit of legal remedies against FHA-approved lenders related to loans insured by the FHA; and (v) various policy changes at the FHA, including the general elimination of the premium cancellation provision that exists for borrower-paid private mortgage insurance. Future reductions in the FHA’s annual or upfront premiums or changes to its policies may impact our competitiveness with the FHA. In addition, in 2019, HUD issued a Memorandum of Understanding (“MOU”) with the Department of Justice (“DOJ”) that provides guidance on the process for enforcing the False Claims Act (“FCA”), and revisions of annual and loan-level certifications which became effective January 1, 2020. The MOU provides that alleged violations of the FCA will be primarily addressed through HUD administrative proceedings and only referred to the DOJ under

certain circumstances. The MOU could make the FHA more attractive to lenders who have reduced their business with the FHA because of concerns regarding the DOJ's pursuit of legal remedies against FHA lenders.

The Treasury Plan and the HUD Plan recommended a greater coordination of housing policy between the FHFA and HUD, including a reduction in the market overlap between the FHA and the GSEs, and a better defined role for the FHA in adhering to its core mission of serving low and moderate income borrowers. Leadership at the FHFA and HUD have stated that they plan to use the Plans to guide the direction and activities of the GSEs and FHA. It is uncertain whether changes to the FHA's business practices will be adopted and, if so, what form they may ultimately take. If changes to the FHA's business practices are implemented, they may impact the competitiveness of private mortgage insurance.

The Dodd-Frank Act

The Dodd-Frank Act mandates significant rulemaking by several regulatory agencies to implement its provisions. The Dodd-Frank Act established the CFPB to regulate the offering and provision of consumer financial products and services under federal law, including residential mortgages, and transferred authority to the CFPB to enforce many existing consumer related federal laws, including the Truth in Lending Act ("TILA") and RESPA.

Among the most significant provisions for private mortgage insurers under the Dodd-Frank Act are the ability to repay mortgage provisions ("Ability to Repay Rule"), including a related safe harbor set forth in the QM Rule (defined below), the securitization risk retention provisions and the expanded mortgage servicing requirements under TILA and RESPA.

Qualified Mortgage Requirements—Ability to Repay Requirements. The Ability to Repay Rule requires mortgage lenders to make a reasonable and good faith determination that, at the time the loan is consummated, the consumer has a reasonable ability to repay the loan. The Dodd-Frank Act provides that a creditor may presume that a borrower will be able to repay a loan if the loan has certain low-risk characteristics that meet the definition of a qualified mortgage ("QM Rule").

In adopting the QM Rule, the CFPB established rigorous underwriting and product feature requirements for the loans to be deemed qualified mortgages. Within those regulations, the CFPB created a special exemption for the GSEs that is generally referred to as the QM Patch and allows any loan that meets the GSE underwriting and product guidelines to be a qualified mortgage, or QM. The QM Patch effectively provides QM designation for GSE eligible loans that have a debt-to-income ratio in excess of 43%, which represents a meaningful portion of the loans currently purchased by the GSEs. Without the QM Patch or an alternative, loans with debt-to-income ratios above 43% would not be designated as QM unless they were insured by a federal agency such as the FHA or VA, which have each adopted their own QM definitions that currently do not have a debt-to-income ratio limitation. The QM Patch expires on the earlier of the end of the GSEs' conservatorship or January 10, 2021. On July 25, 2019, the CFPB released an Advanced Notice of Proposed Rulemaking ("ANPR") regarding the expiration of the QM Patch. The ANPR specifically states that the CFPB intends to allow the QM Patch to expire in January 2021 or after a short extension, if necessary, and requested comments on possible amendments to the CFPB's QM definition, including potential replacements for the QM Patch. The CFPB has stated that it is "committed to ensuring a smooth and orderly mortgage market" in considering these issues and any resulting transition away from the QM Patch. We believe there are many viable alternatives for replacing the QM Patch, which, if adopted in a manner that brings greater consistency to how QM is defined across regulatory agencies, would limit the potential impact on the housing market and mortgage insurance market resulting from the expiration of the QM Patch. In this regard, the CFPB recently indicated that it expects to issue for comment, no later than May 2020, a proposed new QM Rule that would replace the use of a DTI ratio with an alternative measure such as a pricing measure, following a short extension of the QM Patch. The pricing measure alternative that is most commonly being discussed would allow QM designation for loans priced at or less than the average prime offer rate ("APOR"), plus 150 basis points, which we believe would reduce the number of loans that would be designated QM compared to those receiving QM designation under the QM Patch, although not materially. The outcome of the rulemaking process remains uncertain and the expiration of the QM Patch without a viable replacement, or other potential amendments of the CFPB's QM definition, could adversely impact our business, financial condition and results of operations.

The QM Rule requires that points and fees paid at or prior to closing cannot exceed 3% of the total loan amount, with higher points and fees thresholds provided for loan amounts below \$100,000. Any mortgage insurance paid by the borrower at or before the time of loan closing that is not refundable on a pro-rata basis must be applied toward the 3% points and fee calculation.

Additionally, any refundable borrower-paid insurance premiums paid at closing in excess of the premium amount payable on an FHA insured loan (currently 175 basis points) must be included in a lender's QM 3% points and fees calculation. There are no similar restrictions on the points and fees associated with FHA premiums, and thus FHA has a market advantage for smaller balance loans where the 3% cap is more easily reached.

The Dodd-Frank Act also granted the FHA, VA and the USDA flexibility to establish their own definitions of qualified mortgages for their insurance guaranty programs. Both the FHA and VA have created their own definition of qualified mortgages that differ from both the CFPB's definition and the current underwriting and product guidelines at the GSEs that are subject to the special exemption. For example, the FHA's QM definition currently applies to loans priced at or less than APOR plus the sum of 115 basis points and the FHA's annual mortgage insurance premium rate, which is effectively broader than the pricing metric currently being discussed for potential use by the CFPB as a replacement to the QM Patch. These alternate definitions of qualified mortgages are more favorable to lenders and mortgage holders than the CFPB QM Rule that applies to the GSEs and the markets in which we operate, which could drive business to these agencies and have a negative impact on our mortgage insurance business.

Qualified Residential Mortgage Regulations—Securitization Risk Retention Requirements. The Dodd-Frank Act requires securitizers to retain at least 5% of the credit risk associated with mortgage loans that they transfer, sell or convey, unless the mortgage loans are qualified residential mortgages ("QRMs") or are insured by the FHA or another federal agency (the "QRM Rule"). Under applicable federal regulations, a QRM is generally defined as a mortgage meeting the requirements of a qualified mortgage under the CFPB's QM Rule described above. Because of the capital support provided by the U.S. government to the GSEs, the GSEs satisfy the proposed risk retention requirements of the Dodd-Frank Act while they are in conservatorship, so sellers of loans to the GSEs currently are not subject to the risk retention requirements referenced above. This means that securitizers would not be required to retain risk under the QRM Rule on loans that are guaranteed by the GSEs while in conservatorship. The QRM Rule requires the agencies that implemented the rule to review the QRM definition no later than four years after its effective date (i.e., December 2018) and every five years thereafter, and allows each agency to request a review of the definition at any time. On December 20, 2019, the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the SEC, FHFA, and HUD announced the commencement of review of the QRM Rule.

Other. The Dodd-Frank Act establishes a Federal Insurance Office within the U.S. Department of the Treasury (the "FIO"). While the FIO does not have a general supervisory or regulatory authority over the business of insurance, the director of this office performs various functions with respect to insurance, such as serving as a non-voting member of the Financial Stability Oversight Council. It is difficult to predict whether legislators or other executive agencies will pursue the development and implementation of federal standards for the mortgage insurance industry. Any divergence from the current system of state regulation could significantly change compliance burdens and possibly impact our financial condition.

In addition, Section 1473 of the Dodd-Frank Act establishes minimum requirements to be implemented by states regarding the registration and supervision of appraisal management companies ("AMCs"), including Independent Settlement Services. In 2015, six federal regulatory agencies (the Office of the Comptroller of the Currency, Federal Reserve Board, Federal Deposit Insurance Corporation, National Credit Union Administration, CFPB and FHFA) approved final rules creating federal minimum requirements for state registration and supervision of AMCs. All AMCs subject to state registration, including Independent Settlement Services, must satisfy certain minimum standards, including requirements to: (i) establish and comply with processes and controls designed to ensure that an AMC only engages an appraiser who has the appropriate education, expertise and experience necessary to competently complete a particular appraisal assignment and (ii) establish and comply with processes and controls reasonably designed to ensure that the AMC conducts its appraisal management services in accordance with applicable appraisal independence standards and regulations.

RESPA

Settlement service providers in connection with the origination or refinance of a federally regulated mortgage loan are subject to RESPA and Regulation X. Under the Dodd-Frank Act, the authority to implement and enforce RESPA was transferred to the CFPB. RESPA authorizes the CFPB, the U.S. Department of Justice, state attorneys general and state insurance commissioners to bring civil enforcement actions, and also provides for criminal penalties and private rights of action.

Mortgage insurance and other products and services provided by Radian's affiliates are considered settlement services for purposes of RESPA. The anti-referral fee and anti-kickback provisions of Section 8 of RESPA generally provide, among other things, that settlement service providers are prohibited from paying or accepting anything of value in connection with the referral of a settlement service or sharing in fees for those services. RESPA also prohibits requiring the use of an affiliate for settlement services and requires certain information to be disclosed if an affiliate is used to provide the settlement services. In addition to mortgage insurance, through our Services business we offer a broad array of both settlement and non-settlement services to our customers, including real estate, valuation, appraisal, title and closing services. To the extent products and services provided by our Services business are settlement services for purposes of RESPA, the anti-referral fee, anti-kickback, and required use provisions of RESPA would apply which could impact how these products and services are marketed and sold.

In the past, we and other mortgage insurers have faced lawsuits alleging, among other things, that our captive reinsurance arrangements constituted unlawful payments to mortgage lenders under RESPA. We also have been subject to lawsuits alleging that our Pool Insurance and contract underwriting services violated RESPA. In addition, we and other mortgage insurers have been subject to inquiries and investigative demands from state and federal governmental agencies, including the CFPB, requesting information relating to captive reinsurance. In April 2013, we reached a settlement with the CFPB that concluded its investigation with respect to Radian Guaranty without any findings of wrongdoing. As part of the settlement, Radian Guaranty paid a civil penalty and agreed that it would not enter into any new captive reinsurance agreement or reinsure any new loans under any existing captive reinsurance agreement for a period of 10 years ending in 2023. In June 2015, Radian Guaranty executed a Consent Order with the Minnesota Department of Commerce that resolved the Minnesota Department of Commerce's outstanding inquiries related to captive reinsurance arrangements involving mortgage insurance in Minnesota without any findings of wrongdoing. As part of the Consent Order, Radian Guaranty paid a civil penalty and agreed not to enter into new captive reinsurance arrangements until June 2025. We have not entered into any new captive reinsurance arrangements since 2007. In addition, under the PMIERS, the GSEs prohibit private mortgage insurers from entering into captive insurance arrangements.

Homeowner Assistance Programs

The Emergency Economic Stimulus Act of 2008 ("EESA") included a requirement to "maximize assistance to homeowners and encourage mortgage servicers to take advantage of available programs (including the Hope for Homeowners program) to minimize foreclosures." In 2008, the U.S. Department of the Treasury announced the Homeowner Affordability and Stability Plan to restructure or refinance mortgages to avoid foreclosures through: (i) refinancing mortgage loans through HARP; (ii) modifying first- and second-lien mortgage loans through HAMP and the Second Lien Modification Program; and (iii) offering other alternatives to foreclosure through the Home Affordable Foreclosure Alternatives Program. HAMP expired in December 2016 and was replaced with the "Flex Modification" program that will offer payment relief similar to HAMP. Refinancing under the HARP program expired on December 31, 2018. The GSEs have since established high LTV streamlined refinance programs in coordination with FHFA to continue providing refinancing options to avoid foreclosure. These programs began enrolling participants in November 2018.

The SAFE Act

The SAFE Act and its state law equivalents require mortgage loan originators to be licensed with state agencies in the states in which they operate and/or registered with the Nationwide Mortgage Licensing System and Registry (the "Registry"). The Registry is a database established by the Conference of State Bank Supervisors and the American Association of Residential Mortgage Regulators that tracks the licensing and eligibility requirements of loan originators. Among other things, the database was established to support the licensing of mortgage loan originators by each state. As part of this licensing and registration process, loan originators who are employees of institutions other than depository institutions or certain of their subsidiaries that, in each case, are regulated by a federal banking agency, must generally be licensed under the SAFE Act guidelines enacted by each state in which they engage in loan origination activities and registered with the Registry. The entity and its employees that provide our contract underwriting and loan processing services are compliant with the SAFE Act for underwriting in all 50 states and the District of Columbia and compliant for loan processing in 44 states and the District of Columbia.

Mortgage Insurance Cancellation

The HPA imposes certain cancellation and termination requirements for borrower-paid private mortgage insurance with respect to "residential mortgage transactions" as defined in the HPA, and requires certain disclosures to borrowers regarding their rights under the law. Specifically, the HPA provides that private mortgage insurance on most loans originated on or after July 29, 1999 may be cancelled at the request of the borrower once the LTV reaches 80% of the original value, provided that certain conditions are satisfied. Under HPA, private mortgage insurance on most borrower-paid mortgage insurance, subject to certain exceptions, must be canceled automatically on the date the LTV is scheduled to reach 78% of the original value (or, if the loan is not current on that date, on the date that the loan becomes current).

The HPA establishes special rules for the termination of private mortgage insurance in connection with loans that are "high risk." The HPA does not define "high risk" loans, but leaves that determination to the GSEs for loans up to the GSE conforming loan limits and to lenders for any other loan. For "high risk" loans, private mortgage insurance must be terminated on the date that the LTV is first scheduled to reach 77% of the unpaid principal balance. In no case, however, may private mortgage insurance be required beyond the midpoint of the amortization period of the loan if the borrower is current on the payments required by the terms of the mortgage.

The Fair Credit Reporting Act (the “FCRA”)

The FCRA imposes restrictions on the permissible use of credit report information and disclosures that must be made to consumers when information from their credit reports is used. The FCRA has been interpreted by some Federal Trade Commission staff to require mortgage insurance companies to provide “adverse action” notices to consumers in the event an application for mortgage insurance is declined or a higher premium is charged based on the use, wholly or partly, of information contained in the consumer’s credit report.

Privacy and Information Security - Gramm-Leach-Bliley Act of 1999 (the “GLBA”) and Other Regulatory Requirements

As part of our business, we, and certain of our subsidiaries, maintain large amounts of confidential information, including non-public personal information on consumers and our employees. We and our customers are subject to a variety of privacy and information security laws and regulations. The GLBA imposes privacy requirements on financial institutions, including obligations to protect and safeguard consumers’ nonpublic personal information and records, and limitations on the re-use of such information. The GLBA is enforced by state insurance regulators and by federal regulatory agencies. In addition, many states have enacted privacy and data security laws that impose compliance obligations beyond GLBA, such as: requiring notification in the event that a security breach results in a reasonable belief that unauthorized persons may have obtained access to consumer nonpublic personal information; imposing additional restrictions on the sale and use of consumers’ personal information; affording consumers new rights of both access and deletion of their personal information; and creating new private rights of action for data breaches. See “—State Regulation—*Privacy*.”

Federal and state agencies have increased their focus on compliance obligations related to privacy, data security and cybersecurity. The CFPB, Office of the Comptroller of the Currency and non-governmental regulatory agencies, such as the Financial Industry Regulatory Authority (FINRA), have announced new compliance measures and enforcement efforts designed to monitor and regulate the protection of personal consumer data, including with respect to: the development and delivery of financial products and services; underwriting; mortgage servicing; credit reporting; digital payment systems; and vendor management. For information regarding the New York Department of Financial Services cybersecurity regulations and the California Consumer Privacy Act see “—State Regulation—*Cybersecurity*.”

Mortgage Insurance Tax Deduction

In 2006, Congress enacted the private mortgage insurance tax deduction in order to foster homeownership. The deduction was enacted on a temporary basis and it expired at the end of 2011. Since 2011, the private mortgage insurance tax deduction has been extended five times, most recently for insurance premiums paid through December 31, 2020. It is difficult to predict whether the deduction will be extended in the future.

Basel III

Over the past few decades, the Basel Committee on Banking Supervision (the “Basel Committee”) has established international benchmarks for assessing banks’ capital adequacy requirements (“Basel III”). Included within those benchmarks are capital standards related to residential lending and securitization activity and importantly for private mortgage insurers, the capital treatment of mortgage insurance on those loans. These benchmarks are then interpreted and implemented via rulemaking by U.S. banking regulators. In July 2013, the U.S. banking regulators promulgated regulations, referred to as the “U.S. Basel III Rules,” to implement significant elements of the Basel framework. The U.S. Basel III Rules, among other things, revise and enhance the U.S. banking agencies’ general risk-based capital rules. Today, the U.S. Basel III Rules assign a 20%, 50% or 100% risk weight to loans secured by one-to-four-family residential properties. Generally, under the U.S. Basel III Rules in place today, the explicit government guarantees (FHA/VA/USDA) receive a 0% risk weight, and Fannie Mae and Freddie Mac related loans receive a 20% risk weight. Non-government related mortgage exposures secured by a first lien on a one-to-four family residential property that are prudently underwritten and that are performing according to their original terms receive a 50% risk weighting. All other one-to-four family residential mortgage loans are assigned a 100% risk weight.

In December 2014, the Basel Committee issued a proposal for further revisions to Basel III. It proposed adjustments to the risk weights for residential mortgage exposures that take into account LTV ratio and the borrower’s ability to service a mortgage, which were not previously addressed by Basel III. The proposed LTV ratio did not take into consideration any credit enhancement, including private mortgage insurance, but in March 2015, the U.S. banking regulators clarified that for purposes of the U.S. Basel III Rules, calculation of LTV ratios can account for credit enhancement such as private mortgage insurance in determining whether a loan is made in accordance with prudent underwriting standards for purposes of receiving the preferred 50% risk weight. The comment period for this proposal closed in March 2015, and in December 2015, the Basel Committee released a second proposal which retained the LTV provisions of the initial draft, but not the provisions pertaining to a

borrower's ability to service a mortgage (the "2015 Basel Committee Proposal"). The comment period for the 2015 Basel Committee Proposal closed in March 2016. To date, federal regulators have not adopted or implemented any new regulations, including based on these proposals, that update or modify the U.S. Basel III Rules.

The revised and final recommendations from the Basel Committee with respect to Basel III were published in December 2017 (the "2017 Basel Committee III Recommendations"), and included finalized risk weighting guidelines for residential mortgage exposures. These rules recognize guarantees provided by sovereign governments (such as FHA, VA, USDA and Ginnie Mae) as off-setting the capital requirements, resulting in a 0% risk weight. While the 2017 Basel Committee III Recommendations include consideration of LTV ratios, including the impact of credit enhancement provided by third-party private mortgage insurance and the GSEs on LTV ratios, the credit enhancement provided by third-party private mortgage insurance and the GSEs would have higher risk weightings than the explicitly government guaranteed products, putting loans insured by private mortgage insurance at a disadvantage. It remains unclear whether new guidelines will be proposed or finalized in the U.S. in response to the most recent 2017 Basel III Committee Recommendations.

Employees

At December 31, 2019, we had approximately 2,000 employees employed by Radian Group and its subsidiaries. Following the sale of Clayton in January 2020, our total number of employees decreased to approximately 1,400. Management considers employee relations to be good.

Item 1A. Risk Factors.

Radian Guaranty may fail to maintain its eligibility status with the GSEs.

In order to be eligible to insure loans purchased by the GSEs, mortgage insurers such as Radian Guaranty must meet the GSEs' eligibility requirements, or PMIERS. The PMIERS are comprehensive, covering virtually all aspects of the business of a private mortgage insurer, including internal risk management and quality controls, the relationship between the GSEs and the approved insurer and the approved insurer's financial condition, as well as extensive requirements related to the conduct and operations of a mortgage insurer's business. If Radian Guaranty is unable to satisfy the requirements set forth in the PMIERS, Freddie Mac and/or Fannie Mae could restrict it from conducting certain types of business with them or take actions that may include not purchasing loans insured by Radian Guaranty.

The PMIERS financial requirements currently require that a mortgage insurer's Available Assets meet or exceed its Minimum Required Assets. At December 31, 2019, Radian Guaranty was in compliance with the PMIERS financial requirements and had Available Assets of \$3.6 billion, which resulted in an excess or "cushion" of \$804 million over its Minimum Required Assets of \$2.8 billion. Radian Guaranty's ability to continue to comply with the PMIERS financial requirements could be impacted by, among other factors: (i) the product mix of our NIW and factors affecting the performance of our mortgage insurance portfolio, including our level of new defaults, prepayments, the losses we incur on new or existing defaults and the credit characteristics of our mortgage insurance; (ii) the amount of credit that we receive under the PMIERS financial requirements for our third-party reinsurance transactions (which is subject to initial and ongoing review by the GSEs); and (iii) potential updates to the PMIERS, including an increase in the capital requirements under the PMIERS financial requirements.

Under the PMIERS financial requirements there are increased financial requirements for loans with a higher likelihood of default and/or certain credit characteristics, such as higher LTVs and lower FICO scores, as well as for loans originated after January 1, 2016 that are insured under lender-paid mortgage insurance policies not subject to automatic termination under the HPA. Therefore, if our mix of business includes more loans that are subject to these increased financial requirements, it increases the amount of Available Assets that Radian Guaranty is required to hold. Depending on the circumstances, we may limit the type and volume of business we are willing to write for certain of our products based on the increased financial requirements associated with certain loans. This could reduce the amount of NIW we write, which could reduce our revenues. Additionally, as we have experienced in the past, our insured loans may experience increased defaults in the future. Increases in defaults, including as a result of natural disasters, would subject Radian Guaranty to an increase in Minimum Required Assets under the PMIERS, and therefore, could impact our compliance with the PMIERS or negatively impact our results of operations.

The GSEs may amend the PMIERS at any time, although the GSEs have communicated that for material changes, including material changes affecting Minimum Required Assets, they will generally provide written notice 180 days prior to the effective date. The GSEs also have broad discretion to interpret the PMIERS, which could impact the calculation of Radian Guaranty's Available Assets and/or Minimum Required Assets. The most recent revisions to PMIERS, or PMIERS 2.0, became

effective on March 31, 2019. We expect the GSEs to continue to update the PMIERS periodically in the future, including if and when there are changes to the GSEs' capital requirements, such as if and when the CCF is finalized.

Compliance with the PMIERS financial requirements could impact our holding company liquidity. If additional capital is required to support Radian Guaranty's compliance with the PMIERS financial requirements, it may make it more difficult for Radian Guaranty to return capital to Radian Group in the form of dividends or otherwise, and depending on the circumstances, could require Radian Group to contribute capital through capital contributions or surplus notes to Radian Guaranty, which would leave less liquidity to satisfy Radian Group's other obligations. Depending on the amount of liquidity that is utilized from Radian Group, we may be required (or may decide) to seek additional capital by incurring additional debt, issuing additional equity, or selling assets, which we may not be able to do on favorable terms, if at all.

In addition to the PMIERS financial requirements, the PMIERS contain requirements related to the operations of our mortgage insurance business, including extensive operational requirements in areas such as claim processing, loss mitigation, document retention, underwriting, quality control, reporting and monitoring, among others. These increased operational requirements have resulted in additional expenses and have required substantial time and effort from management and our employees, which we expect will continue.

The PMIERS prohibit Radian Guaranty from engaging in certain activities such as insuring loans originated or serviced by an affiliate (except under certain circumstances) and require Radian Guaranty to obtain the prior consent of the GSEs before taking many actions, which may include entering into various intercompany agreements, settling loss mitigation disputes with customers and commuting risk, among others. These restrictions could prohibit or delay Radian Guaranty from taking certain actions that would be advantageous to it or its affiliates.

Although we expect Radian Guaranty to retain its eligibility status with the GSEs and to continue to comply with the PMIERS financial requirements, including as potentially updated in the future, we cannot provide assurance that this will occur. Loss of Radian Guaranty's eligibility status with the GSEs would have an immediate and material adverse impact on the franchise value of our mortgage insurance business and our future prospects, as well as a material negative impact on our future results of operations and financial condition.

Our insurance subsidiaries are subject to comprehensive state insurance regulations and other requirements, which we may fail to satisfy.

We and our insurance subsidiaries are subject to comprehensive, detailed regulation by the insurance regulators in the states where they are domiciled or licensed to transact business. These regulations are principally designed for the protection of our insurance policyholders rather than for the benefit of our investors. Insurance laws vary from state to state, but generally grant broad supervisory powers to examine insurance companies and enforce rules or exercise discretion affecting almost every significant aspect of the insurance business, including the power to revoke or restrict an insurance company's ability to write new business. Among other matters, the state insurance regulators impose various capital requirements on our insurance subsidiaries.

State insurance capital requirements for our mortgage insurance subsidiaries include Risk-to-capital ratios, other risk-based capital measures and surplus requirements that may limit the amount of insurance that our mortgage insurance subsidiaries write or the ability of our insurance subsidiaries to distribute capital to Radian Group. Similarly, our title insurance subsidiary is required to maintain statutory premium reserves that vary by state and subject to periodic reviews of certain financial performance ratios, and the results of those ratios could result in additional capital requirements in states where it is licensed. Our failure to maintain adequate levels of capital in our mortgage insurance and title insurance subsidiaries, among other things, could lead to intervention by the various insurance regulatory authorities, which could materially and adversely affect our business, business prospects and financial condition.

With respect to our mortgage insurance subsidiaries, there are 16 states that currently impose a Statutory RBC Requirement. If Radian Guaranty is not in compliance with a state's applicable Statutory RBC Requirement, it may be prohibited from writing new business in that state until it is back in compliance or it receives a waiver of, or similar relief from, the requirement. As of December 31, 2019, Radian Guaranty was in compliance with all applicable Statutory RBC Requirements. In states that do not have a Statutory RBC Requirement, it is not clear what actions the applicable state regulators would take if a mortgage insurer fails to meet the Statutory RBC Requirement established by another state. If Radian Guaranty were to fail to meet the Statutory RBC Requirement in one or more states, it could be required to suspend writing business in some or all of the states in which it does business. In addition, the GSEs and our mortgage lending customers may decide not to conduct new business with Radian Guaranty (or may reduce current business levels) or impose restrictions on Radian Guaranty while it was not in compliance. The franchise value of our mortgage insurance business likely would be

significantly diminished if we were prohibited from writing new business or restricted in the amount of new business we could write in one or more states.

Radian Group also may be required to provide capital support for Radian Guaranty and its affiliated insurers if additional capital is required by those subsidiaries pursuant to future changes to insurance laws and regulations. The NAIC is in the process of reviewing the minimum capital and surplus requirements for mortgage insurers and considering changes to the Model Act. The NAIC working group overseeing this initiative has released an exposure draft of a revised Model Act, including new proposed mortgage guaranty insurance capital requirements. As proposed, the capital requirements set forth in the current exposure draft are impacted, among other things, by changes in the economic and housing environment, including changes in home prices and incomes. Although the outcome of this process remains uncertain, given the current economic and housing environment, if the exposure draft of the new Model Act was adopted and in effect today, we do not believe that the capital requirements imposed by the new Model Act would exceed those of the current PMIERS financial requirements.

The mortgage insurance industry has always been highly competitive with respect to pricing. Our mortgage insurance subsidiaries' premium rates and policy forms are generally subject to regulation in every state in which they are licensed to transact business. These regulations are intended to protect policyholders against the adverse effects of excessive, inadequate or unfairly discriminatory rates and to encourage fair competition in the insurance marketplace. In most states where our insurance subsidiaries are licensed, premium rates and policy forms must be filed with the state insurance regulatory authority and, in some states, must be approved, before their use. We may be subject to regulatory inquiries or examinations with respect to our mortgage insurance premium rates and policy forms.

Our title insurance business is subject to extensive rate regulation by the applicable state agencies in the states in which it operates. Title insurance rates are regulated differently in various states, with some states requiring the subsidiaries to file and receive approval of rates before such rates become effective and some states promulgating the rates that can be charged. In general, premium rates are determined on the basis of historical data for claim frequency and severity as well as related production costs and other expenses.

Given that the premium rates for our insurance subsidiaries are highly regulated, we could lose business opportunities and fail to successfully implement our business strategies if we are unable to respond to competitor pricing actions and our customers' demands in a timely and compliant manner.

The credit performance of our mortgage insurance portfolio is impacted by macroeconomic conditions and specific events that affect the ability of borrowers to pay their mortgages.

As a seller of mortgage credit protection, our results are subject to macroeconomic conditions and specific events that impact the housing finance and real estate markets, including events that impact mortgage originations and the credit performance of our mortgage insurance portfolio. Many of these conditions are beyond our control, including housing prices, unemployment levels, interest rate changes, the availability of credit and other factors that may be derived from national and regional economic conditions. In general, a deterioration in economic conditions increases the likelihood that borrowers will be unable to satisfy their mortgage obligations. A deteriorating economy can adversely affect housing values, which in turn can influence the willingness of borrowers to continue to make mortgage payments despite having the financial resources to do so.

Mortgage defaults can occur due to a variety of specific events affecting borrowers, including death or illness, divorce or other family problems, unemployment, or other events. In addition, factors impacting regional economic conditions, acts of terrorism, war or other severe conflicts, event-specific economic depressions or other catastrophic events such as natural disasters and pandemics could result in increased defaults due to the impact of such events on the ability of borrowers to satisfy their mortgage obligations and the value of affected homes.

Unfavorable macroeconomic developments and the other factors cited above could have a material negative impact on our results of operations and financial condition.

The length of time that our mortgage insurance policies remain in force could decline and result in a decrease in our future revenues.

As of December 31, 2019, 72% of our total primary IIF consists of policies for which we expect to receive premiums in the future, typically through Monthly Premium Policies. As a result, most of our earned premiums are derived from insurance that was written in prior years. The length of time that this insurance remains in force, which we refer to as the Persistency Rate, is a significant driver of our future revenues, with a lower overall Persistency Rate generally reducing our future revenues. The factors affecting the length of time that our insurance remains in force include:

- prevailing mortgage interest rates compared to the mortgage rates on our IIF, which affects the incentive for borrowers to refinance (i.e., lower current interest rates make it more attractive for borrowers to refinance and receive a lower interest rate);
- applicable policies for mortgage insurance cancellation, along with the current value of the homes underlying the mortgages in our IIF;
- the credit policies of lenders, which may make it more difficult for homeowners to refinance loans; and
- economic conditions that can affect a borrower's decision to pay off a mortgage earlier than required, including the strength of the housing market, which impacts a borrower's prospects for selling their existing home and finding a suitable and affordable new home.

If these or other factors cause a decrease in the length of time that our Monthly Premium Policies (or other policies for which we expect to receive premiums in the future) remain in force, our future revenues could be negatively impacted, which could negatively impact our results of operations and financial condition.

Our Loss Mitigation Activity is not expected to mitigate mortgage insurance losses to the same extent as in prior years; Loss Mitigation Activity could continue to negatively impact our customer relationships.

As part of our claims management process we pursue opportunities to mitigate losses both before and after we receive claims, including processes to ensure claims are valid. Following the financial crisis, our Loss Mitigation Activities, such as Rescissions, Claim Denials and Claim Curtailments, increased significantly in response to the poor underwriting, servicer negligence and general non-compliance with our insurance policies that was prevalent in the period leading up to the financial crisis. These Loss Mitigation Activities materially mitigated our paid losses for loans originated and serviced during this period and resulted in a significant reduction in our loss reserves. Following the financial crisis, mortgage underwriting and servicing have generally improved, and the amount of Loss Mitigation Activity required with respect to the claims on loans originated and serviced in more recent periods has significantly decreased. As a result, our future Loss Mitigation Activity is not expected to mitigate our paid losses to the same extent as it did in the years following the financial crisis.

In addition, under our 2014 Master Policy, for NIW after October 1, 2014, our rights to conduct Loss Mitigation Activity generally are more limited than under our prior master insurance policies. Radian Guaranty offers 12-month and 36-month rescission relief programs in accordance with the specified terms and conditions set forth in our 2014 Master Policy. Further, in December 2017, the FHFA and the GSEs proposed revised GSE Rescission Relief Principles to further clarify the circumstances under which mortgage insurers may rescind coverage, and required private mortgage insurers to implement these principles into their master policies for loans insured going forward. Our 2020 Master Policy incorporates these principles. Among other things, the 2020 Master Policy includes a new 60-month rescission relief program that provides that a loan may be eligible to qualify for rescission relief even if the loan failed to meet the conditions required to receive 36-month rescission relief. The 2020 Master Policy will apply to applications received on or after March 1, 2020. The reduction in the Loss Mitigation rights available under our 2014 Master Policy and 2020 Master Policy could result in higher losses than would have been the case under our Prior Master Policy.

Our Loss Mitigation Activities and claims paying practices have resulted in disputes with certain of our customers and in some cases, damaged our relationships with customers, resulting in a loss of business. While we have resolved many of these disputes, a risk remains that our Loss Mitigation Activities or claims paying practices could continue to have a negative impact on our relationships with customers or potential customers. Further, disputes with our customers that are not resolved could result in additional arbitration or judicial proceedings, requiring significant legal expenses, beyond those we are currently facing. See "Item 3. Legal Proceedings." To the extent that past or future Loss Mitigation Activities or claims paying practices impact our customer relationships, our competitive position could be adversely affected, resulting in the potential loss of business and impacting our results of operations.

Changes in the charters, business practices, or role of the GSEs in the U.S. housing market generally, could significantly impact our mortgage insurance business.

Our current business model is highly dependent on the GSEs as the GSEs are the primary beneficiaries of most of our mortgage insurance policies. The GSEs' federal charters generally require credit enhancement for low down payment mortgage loans (i.e., a loan amount that exceeds 80% of a home's value) in order for such loans to be eligible for purchase by them. Lenders generally have used private mortgage insurance to satisfy this credit enhancement requirement. As a result, low down payment mortgages purchased by the GSEs generally are insured with private mortgage insurance. In order to be eligible to insure loans purchased by the GSEs, mortgage insurers such as Radian Guaranty must meet the GSEs' eligibility requirements, or PMIERS.

The GSEs' business practices may be impacted by their results of operations, by administrative policy decisions (such as a desire to increase the competitiveness of private capital executions in the secondary mortgage market) as well as by legislative or regulatory changes. Since September 2008, the GSEs have been operating under the conservatorship of the FHFA. With respect to loans purchased by the GSEs, changes in the business practices of the GSEs, which can be implemented by the GSEs acting independently or through their conservator, the FHFA, could negatively impact our mortgage insurance business and financial performance, including changes to:

- eligibility requirements for a mortgage insurer to become and remain an approved eligible insurer for the GSEs;
- underwriting standards on mortgages they purchase, including as a result of the FHFA's current focus on reducing the GSEs' risk profile with respect to loans with multiple higher risk characteristics;
- policies or requirements that may result in a reduction in the number of mortgages they acquire;
- the national conforming loan limit for mortgages they acquire;
- the level of mortgage insurance required, including expanding the loans that are eligible for reduced insurance coverage;
- the terms on which mortgage insurance coverage may be canceled before reaching the cancellation thresholds established by law;
- the terms required to be included in master policies for the mortgage insurance policies they acquire, including limitations on our ability to mitigate losses on insured mortgages that are in default;
- the amount of loan level price adjustments (based on risk) or guarantee fees (which may result in a higher cost to borrowers) that the GSEs charge on loans that require mortgage insurance; and
- the degree of influence that the GSEs have over a mortgage lender's selection of the mortgage insurer providing coverage.

The FHFA has called for the GSEs to transfer a meaningful portion of credit risk, known as a "credit risk transfer," to the private sector. This mandate builds upon the goals set in each of the last four years for the GSEs to increase the role of private capital by experimenting with different forms of transactions and structures. We continue to participate in these credit risk transfer programs developed by Fannie Mae and Freddie Mac. Additional information about these programs may be found in Item 1. Business, see "Regulation—Federal Regulation—*Housing Finance Reform*" and "Mortgage Insurance—Mortgage Insurance Business Overview—*Mortgage Insurance Products—Other Mortgage Insurance Products—GSE Credit Risk Transfer*."

It is difficult to predict what other types of credit risk transfer transactions and structures may be used in the future. If any of the credit risk transfer transactions and structures were to displace primary loan level or standard levels of mortgage insurance, the amount of insurance we write may be reduced, which could negatively impact our franchise value, results of operations and financial condition. As a result, the impact of any credit risk transfer products and transactions or other structures implemented by the GSEs is uncertain and hard to predict. For example, in 2018 Freddie Mac and Fannie Mae announced the launch of pilot programs, IMAGIN and EPMI, respectively, as alternative ways for lenders to obtain credit enhancement and sell loans with LTVs greater than 80% to the GSEs. These investor-paid mortgage insurance programs, in which insurance is acquired directly by each GSE, have many of the same features as private mortgage insurance and represent an alternative to traditional private mortgage insurance products that are provided to individual lenders. Participants in IMAGIN and EPMI are not subject to compliance with the PMIERS which may create a competitive disadvantage for private mortgage insurers if these pilot programs are expanded. See "Item 1. Business—Regulation—Federal Regulation—*Housing Finance Reform*."

Since the FHFA was appointed as conservator of the GSEs, there has been a wide range of legislative proposals to reform the U.S. housing finance market, including proposals for GSE reform ranging from some that advocate nearly complete privatization and elimination of the role of the GSEs to others that support a system that combines a federal role with private capital. In September 2019, the U.S. Department of the Treasury and HUD released the Treasury Plan and the HUD Plan to reform the housing finance market, and with respect to the Treasury Plan, to release the GSEs from conservatorship after certain conditions were met. Leadership at the FHFA and HUD have stated that they plan to use the Plans to guide the direction and activities of the GSEs and FHA. With the Plans serving as a roadmap, we expect HUD and FHFA will continue to take actions to shape the role of the FHA and GSEs in the housing finance market and to prepare the GSEs to exit conservatorship. In particular, the FHFA has stated a desire to reduce the GSEs' exposure to loans with multiple higher risk characteristics in light of the fact that the GSEs currently maintain limited capital positions to support such risk. It is difficult to predict whether or how the Treasury Plan and HUD Plan may be implemented and what impact actions taken in furtherance of these plans could have on our business, financial condition and results of operations. See "Item 1. Business—Regulation—Federal Regulation—*Housing Finance Reform*."

The future structure of the residential housing finance system remains uncertain, including whether comprehensive housing reform legislation will be adopted and, if so, what form it may ultimately take. It is difficult to predict the impact of any changes on our business. See "Item 1. Business—Regulation—Federal Regulation—*Housing Finance Reform*." Although we believe that traditional private mortgage insurance will continue to play an important role in any future housing finance structure, developments in the practices of the GSEs, including potentially new federal legislation that reduces the level of private mortgage insurance coverage used by the GSEs as credit enhancement, or even eliminates the requirement, may diminish the franchise value of our mortgage insurance business and materially and adversely affect our business prospects, results of operations and financial condition.

A decrease in the volume of mortgage originations could result in fewer opportunities for us to write new mortgage insurance business.

The amount of new business we write depends, among other things, on a steady flow of low down payment mortgages that benefit from our mortgage insurance. The volume of low down payment mortgage originations is impacted by a number of factors, including:

- restrictions on mortgage credit due to changes in lender underwriting standards, capital requirements affecting lenders, regulatory requirements such as the QM designation for mortgage loans, and the health of the private securitization market;
- mortgage interest rates;
- the health of the domestic economy generally, as well as specific conditions in regional and local economies;
- housing affordability;
- tax laws and policies and their impact on, among other things, deductions for mortgage insurance premiums, mortgage interest payments and real estate taxes;
- demographic trends, including the rate of household formation;
- the rate of home price appreciation;
- government housing policy encouraging loans to first-time homebuyers; and
- the practices of the GSEs, including the extent to which the guaranty fees, loan level price adjustments (based on risk), credit underwriting guidelines and other business terms provided by the GSEs affect the cost of mortgages and lenders' willingness to extend credit for low down payment mortgages.

If the overall volume of new mortgage originations declines, we could experience a reduced opportunity to write new insurance business and likely will be subject to increased competition, which could negatively affect our business prospects, results of operations and financial condition.

Our NIW and franchise value could decline if we lose business from significant customers.

Our mortgage insurance business depends on our relationships with our customers. Our customers place insurance with us directly on loans they originate and they also do business with us indirectly through purchases of loans that already have our mortgage insurance coverage. Our relationships with our customers may influence both the amount of business they conduct with us directly and also their willingness to continue to approve us as a mortgage insurance provider for loans that they

purchase. The loss of business from significant customers could have an adverse effect on the amount of new business we are able to write, and consequently, our franchise value.

During 2019, our top 10 mortgage insurance customers (measured by NIW) were responsible for 34.3% of our primary NIW, as compared to 29.1% in 2018. If we were to lose a significant customer, it is unlikely that the loss could be completely offset by other customers in the near-term, if at all. Some of our lending customers may decide to write business only with a limited number of mortgage insurers or only with certain mortgage insurers, based on their views with respect to an insurer's pricing, service levels, underwriting guidelines, loss mitigation practices, financial strength or other factors. Alternatively, certain other lending customers have chosen for risk management purposes to diversify the mortgage insurers with which they do business, which may negatively affect our level of NIW and market share with those customers. Given that many of our customers currently give us a significant portion of their total mortgage insurance business, it is possible that further diversification could have a negative impact on our NIW if we are unable to mitigate the market share loss through new customers or increases in business with other customers. Further, we actively engage with our customers to ensure that we are receiving an appropriate mix of business from such customers at acceptable projected returns, and depending on the circumstances, we could take action with respect to customers (e.g., limiting the type of business we accept from them or instituting pricing changes that impact them) that could result in customers reducing the amount of business they do with us or deciding not to do business with us altogether. Any significant loss in our market share could negatively impact our mortgage insurance franchise, results of operations and financial condition.

Our mortgage insurance business faces intense competition.

The U.S. mortgage insurance industry is highly competitive. Our competitors primarily include other private mortgage insurers and governmental agencies, principally the FHA and VA.

We currently compete with other private mortgage insurers that are eligible to write business for the GSEs primarily on the basis of price, underwriting guidelines, overall service, customer relationships, perceived financial strength (including comparative credit ratings) and reputation. Overall service competition is based on, among other things, effective and timely delivery of products, timeliness of claims payments, customer service, timely and accurate servicing of policies, training, loss mitigation efforts and management and field service expertise. We also believe that service includes our ability to offer services to customers through our Services business that complement our mortgage insurance products. For more information about our competitive environment, including pricing competition, see "Item 1. Business—Mortgage Insurance—Competition."

In developing our pricing and origination strategies, we monitor various competitive and economic factors while seeking to enhance the long-term value of our portfolio by balancing credit risk, profitability and volume and capital considerations. Pricing strategies continue to evolve in the mortgage insurance industry and mortgage insurers generally have migrated to offering various pricing methodologies with differing degrees of risk-based granularity. The shift away from a predominantly rate-card-based pricing model and the increase in "black box" pricing frameworks provides a more dynamic pricing environment that has led to an increase in the frequency of pricing changes throughout the mortgage insurance industry and a reduction in pricing transparency. As a result, we may not be aware of rate changes in the industry until we observe that our volume of NIW has changed. Further, this shift in risk-based, granular pricing methodologies, as well as the development of enhanced digital technologies for delivering and receiving price quotes, has led to an increasing number of customers making their choice of mortgage insurance providers based on the lowest price available for any particular loan, without consideration of other factors.

The evolution of pricing changes in the mortgage insurance industry has heightened overall competition and generally reduced pricing for our mortgage insurance. This reduction in our premium rates is expected to decrease the premium yield of our insured portfolio over time as older vintage insured loans with higher premium rates run-off and are replaced with insured loans with lower premium rates.

Overall, our approach to pricing is customer-centric and flexible, as we offer a spectrum of risk-based pricing solutions for our customers that are designed to be balanced with our objectives for managing our volume of NIW and the risk/return profile of our insured portfolio. Although we believe we are well-positioned to compete effectively, our pricing strategy may not be successful. Despite our pricing actions, we may experience returns below our targeted returns and we may lose business to other competitors. There can be no assurance that pricing competition will not intensify further, which could result in a decrease in our projected returns.

Certain of our private mortgage insurance competitors are subsidiaries of larger corporations, may have access to greater amounts of capital and financial resources than we do at a lower cost of capital (including off-shore reinsurance vehicles) and currently have better financial strength ratings than we have. As a result, they may be better positioned to compete outside of traditional mortgage insurance, including in the private label securitization market or if the GSEs expand their use of, or pursue

alternative forms of, credit enhancement outside of private mortgage insurance in its traditional form. In addition, because of tax advantages associated with being off-shore, certain of our competitors have been able to reinsure to their offshore affiliates and achieve higher after-tax rates of return on the NIW they write compared to mortgage insurers such as Radian Guaranty that do not have access to offshore affiliates, which could allow these off-shore competitors to leverage reduced pricing to gain market share, while continuing to achieve acceptable returns on NIW.

We also compete with governmental entities, such as the FHA and VA, primarily on the basis of loan limits, pricing, credit guidelines, terms of our insurance policies and loss mitigation practices. These governmental entities typically do not have the same capital requirements or business objectives that we and other private mortgage insurance companies have, and therefore, may have greater financial flexibility in their pricing guidelines and capacity that could put us at a competitive disadvantage. If these entities lower their pricing or alter the terms and conditions of their mortgage insurance or other credit enhancement products in furtherance of political, social or other goals rather than a profit motive, we may be unable to compete in that market effectively, which could have an adverse effect on our business, financial condition and operating results.

Beginning in 2008, the FHA, which historically had not been a significant competitor, substantially increased its share of the mortgage insurance market, including by insuring a number of loans that would meet our current underwriting guidelines, sometimes at a lower monthly cost to the borrower than a loan that carries our mortgage insurance. The FHA may continue to maintain a significant market position and could increase its market position. Factors that could cause the FHA to maintain or enhance its competitive position include:

- governmental policy, including decreases in the pricing of FHA insurance or changes in the terms of FHA insurance such as the current life-of-loan coverage requirement;
- a coordinated effort by the FHFA and FHA to increase the FHA's share of certain high LTV loans currently purchased by the GSEs;
- changes to the legal requirements (e.g., compliance certifications) for conducting business with the FHA, including those recently implemented, to reduce the perceived risk that lenders will be subject to liability in connection with loans insured by the FHA;
- changes to the CFPB definition of QM that results in a broader definition of qualified mortgage for FHA eligible loans than GSE eligible loans;
- capital requirements imposed on the private mortgage insurance industry;
- the tightening by private mortgage insurers of underwriting guidelines based on credit risk concerns;
- business changes by the GSEs, including underwriting changes, a reduction in loan limits or increases in the loan level price adjustments (based on risk) charged by the GSEs on loans that require mortgage insurance and changes in the amount of guarantee fees for the loans that they acquire (which may result in higher cost to borrowers); and
- the perceived operational ease of using FHA insurance compared to the products of private mortgage insurers.

Other private mortgage insurers may seek to compete for market share from the FHA or other mortgage insurers by reducing pricing, which could, in turn, improve their competitive position in the industry and negatively impact our level of NIW.

We have faced increasing competition from the VA. Based on publicly available information, the VA accounted for 26% of the insurable mortgage market in 2019. We believe that the VA's market share has generally been increasing because the VA offers 100% LTV loans and charges a one-time funding fee that can be included in the loan amount with no additional monthly expense, and because of an increase in the number of borrowers that are eligible for the VA's program.

In addition, as market conditions change, alternatives to private mortgage insurance may become more prevalent, which could reduce the demand for private mortgage insurance in its traditional form, including:

- structures, such as the IMAGIN and EPMI pilot programs launched in 2018 by Freddie Mac and Fannie Mae, respectively, that are commonly referred to as "investor paid mortgage insurance" in which affiliates of traditional mortgage insurers directly insure the GSEs against loss;
- lenders and other investors holding mortgages in their portfolio and self-insuring;
- lenders using pass-through vehicles that take on the risk of loss for loans ultimately sold to the GSEs;
- structured risk transfer transactions in the capital markets;
- risk sharing, risk transfer or using other risk mitigation techniques in conjunction with reduced levels of private mortgage insurance coverage;

- lenders originating mortgages using “piggyback” structures to avoid private mortgage insurance, such as a first-lien mortgage with an 80% LTV and a second mortgage with a 10%, 15% or 20% LTV; and
- other potential forms of credit enhancement that do not involve private mortgage insurance.

See “—Changes in the charters, business practices, or role of the GSEs in the U.S. housing market generally, could significantly impact our mortgage insurance business.”

The competitive environment is extremely challenging given the multitude of factors discussed above. This environment, as well as potential further changes to this evolving environment, could negatively impact our franchise value, business prospects, results of operations and financial condition.

Our business depends, in part, on effective and reliable loan servicing.

We depend on third-party servicing of the loans that we insure. Dependable servicing is necessary for timely billing and effective loss mitigation opportunities for delinquent or near-delinquent loans. Changes in the servicing industry, challenging economic and market conditions or periods of economic stress and high mortgage defaults could negatively affect the ability of servicers to effectively service the loans that we insure. Further, servicers are required to comply with a multitude of legal and regulatory requirements, procedures and standards for servicing residential mortgages such as the CFPB’s mortgage servicing rules. While these requirements are intended to ensure a high level of servicing performance, they also impose a high cost of compliance on servicers that may impact their financial condition and their operating effectiveness. If we experience a disruption in the servicing of mortgage loans covered by our insurance policies, this, in turn, could contribute to a rise in defaults and/or claims among those loans, which could have a material adverse effect on our business, financial condition and operating results.

An extension in the period of time that a loan remains in our defaulted loan inventory may increase the severity of claims that we ultimately are required to pay.

High levels of defaults and corresponding delays in foreclosures could delay our receipt of claims, resulting in an increase in the period of time that a loan remains in our defaulted loan inventory, and as a result, the Claim Severity. Following the financial crisis, the average time that it took for us to receive a claim increased. This was, in part, due to loss mitigation protocols that were established by servicers and also to a significant backlog of foreclosure proceedings in many states, and especially in those states that impose a judicial process for foreclosures. Generally, foreclosure delays do not stop the accrual of interest or affect other expenses on a loan, and unless a loan is cured during such delay, once title to the property ultimately is obtained and a claim is filed, our paid claim amount may include additional interest and expenses, increasing the Claim Severity. While foreclosure timelines have improved in recent years, a portion of our portfolio originated in the years prior to and including 2008 consists of severely delinquent loans. Further, another period of significant economic stress and a high level of defaults could once again delay claims and result in higher levels of Claim Severity. Higher levels of Claim Severity would increase our incurred losses and could negatively impact our results of operations and financial condition.

Our success depends on our ability to assess and manage our underwriting risks; the premiums we charge may not be adequate to compensate us for our liability for losses and the amount of capital we are required to hold against our insured risks. We expect to incur future provisions for losses beyond what we have reserved for in our financial statements.

The estimates and expectations we use to establish premium rates are based on assumptions made at the time our insurance is written. Our mortgage insurance premiums are based on, among other items, the amount of capital we are required to hold against our insured risks and our estimates of the long-term risk of claims on insured loans. Our premium rates are established based on performance models that consider a broad range of borrower, loan and property characteristics, as well as capital requirements and market and economic conditions. Our assumptions may ultimately prove to be inaccurate.

If the risk underlying a mortgage loan we have insured develops more adversely than we anticipated, we generally cannot increase the premium rates on this in-force business, or cancel coverage or elect not to renew coverage, to mitigate the effects of such adverse developments. Similarly, we cannot adjust our premiums if the amount of capital we are required to hold against our insured risks increases from the amount we were required to hold at the time a policy was written. As a result, if we are unable to compensate for or offset the increased capital requirements in other ways, the returns on our business may be lower than we assumed or expected. Our premiums earned and the associated investment income on those premiums may ultimately prove to be inadequate to compensate for the losses that we may incur and may not provide an adequate return on increased capital that may be required. As a result, our results of operations and financial condition could be negatively impacted.

Additionally, in accordance with industry practice, we do not establish reserves in our mortgage insurance business until we are notified that a borrower has failed to make at least two monthly payments when due. Because our mortgage insurance reserving does not account for the impact of future losses that we expect to incur with respect to performing (non-defaulted) loans, our obligation for ultimate losses that we expect to incur at any period end is not reflected in our financial statements, except to the extent that a premium deficiency exists. As a result, our losses can be more severe in periods of high defaults given that we generally are not permitted to establish reserves in anticipation of such defaults.

If the estimates we use in establishing loss reserves are incorrect, we may be required to take unexpected charges to income, which could adversely affect our results of operations.

We establish loss reserves in our mortgage insurance business to provide for the estimated cost of future claims on defaulted loans. Setting our loss reserves requires significant judgment by management with respect to the likelihood, magnitude and timing of each potential loss, including an estimate of the impact of our Loss Mitigation Activities with respect to defaulted loans. The models, assumptions and estimates we use to establish loss reserves may not prove to be accurate, especially in the event of an extended economic downturn or a period of extreme market volatility and uncertainty. Because of this, claims paid may be substantially different than our loss reserves and these reserves may be insufficient to satisfy the full amount of claims that we ultimately have to pay. Changes to our estimates could adversely impact our results of operations and financial condition.

A portion of the defaulted loans in our portfolio originated in the years prior to and including 2008 have been in default for an extended period of time. While these loans are generally assigned a higher loss reserve based on our belief that they are more likely to result in a claim, we also assume, based on historical trends, that a significant portion of these loans will cure or otherwise not result in a claim. Given the significant period of time that these loans have been in default, it is possible that the ultimate cure rate for these defaulted loans will be less than our current estimates of Cures for this inventory of defaults.

If our estimates are inadequate, we may be required to increase our reserves, which could have a material adverse effect on our results of operations and financial condition.

Our delegated underwriting program may subject our mortgage insurance business to unanticipated claims.

In our mortgage insurance business, we permit lenders to obtain mortgage insurance for residential mortgage loans originated and underwritten by them using Radian's pre-established underwriting guidelines. Once we accept a lender into our delegated underwriting program, we generally insure a mortgage loan originated by that lender based on our expectation that the lender has followed our specified underwriting guidelines in accordance with the endorsement. Under this program, a lender could commit us to insure a material number of loans with unacceptable risk profiles before we discover the problem and terminate that lender's delegated underwriting authority or pursue other rights that may be available to us, such as our rights to rescind coverage or deny claims.

We face risks associated with our contract underwriting business.

We provide third-party contract underwriting services for our customers. We provide these customers with limited indemnification rights with respect to those loans that we simultaneously underwrite for both secondary market compliance and for potential mortgage insurance eligibility. In addition, in certain circumstances, we may also offer limited indemnification when we underwrite a loan only for secondary market compliance. In addition to indemnification, we typically have limited loss mitigation defenses available to us for loans that we have underwritten through our contract underwriting services. As a consequence, our results of operations could be negatively impacted if we are required to indemnify our customers for material underwriting errors in our contract underwriting services.

Reinsurance may not be available, affordable or adequate to protect us against losses.

In our mortgage insurance business, we use reinsurance as a capital and risk management tool. We have distributed risk through third-party quota share and excess-of-loss reinsurance arrangements, as well as through the capital markets using mortgage insurance-linked notes transactions.

The availability and cost of reinsurance are subject to market conditions beyond our control. No assurance can be given that reinsurance will remain available to us in amounts that we consider sufficient and at rates that we consider acceptable. Accordingly, we may be forced to incur additional expenses for reinsurance or may not be able to obtain sufficient reinsurance on acceptable terms, which could cause us to increase the amount of risk we retain, negatively affect the returns we are able to achieve on the business we write and adversely affect our ability to write future business. Further, reinsurance does not relieve us of our direct liability to policyholders, therefore, if the reinsurer is unable or unwilling to meet its obligations to us, we remain liable to make claims payments to our policyholders. As a result, our reinsurance arrangements do not fully eliminate

our obligation to pay claims, and we have assumed credit risk with respect to our inability to recover amounts due from reinsurers. If we are unable to obtain sufficient reinsurance on acceptable terms or to collect amounts due from our reinsurers, it could have a material adverse effect on our business, financial condition and results of operations.

Uncertainty relating to the potential discontinuance of LIBOR after 2021 may adversely affect us.

In 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it would no longer compel banks to submit rate quotations required to calculate LIBOR. As a result, it is uncertain whether LIBOR will continue to be quoted after 2021. Efforts are underway to identify and transition to a set of alternative reference rates. The set of alternative rates includes the Secured Overnight Financing Rate ("SOFR"), which the Federal Reserve Bank of New York began publishing in 2018. In addition, central banks in several other jurisdictions have also announced plans for alternative reference rates for other currencies. There is considerable uncertainty as to how the financial services industry will address the expected discontinuance of LIBOR in financial instruments that are indexed to LIBOR. Financial instruments indexed to LIBOR could experience disparate outcomes based on their contractual terms, ability to amend those terms, market or product type, legal or regulatory jurisdiction, and other factors. Alternative reference rates that replace LIBOR may not yield the same or similar economic results over the lives of the financial instruments, which could adversely affect the value of and return on these instruments.

Any changes to or discontinuation of LIBOR may have an adverse effect on the premium rates we are required to pay in connection with our existing insurance-linked notes transactions, which are tied to LIBOR, or other assets or liabilities whose value is tied to LIBOR or to a LIBOR alternative, including floating rate bonds we hold in our investment portfolio and borrowings under our credit facility which currently uses LIBOR as a benchmark for establishing the interest rate. Furthermore, changes to or the discontinuation of LIBOR may impact our investment portfolio and our cost of debt, as well as other aspects of our business, such as our insurance products, the pricing we charge and the models we use to support our business decisions. It is possible that the discontinuance or replacement of LIBOR, including the implementation of alternative benchmark rates to LIBOR, could have an adverse effect on our business, results of operations or financial condition.

The current financial strength ratings assigned to our mortgage insurance subsidiaries could weaken our competitive position.

Radian Guaranty has been assigned a rating of Baa1 by Moody's and a rating of BBB+ by S&P. While Radian Guaranty's financial strength ratings currently are investment grade, these ratings are below the ratings assigned to certain other private mortgage insurers. We do not believe our ratings have had a material adverse effect on our relationships with existing customers. However, if financial strength ratings become a more prominent consideration for lenders, we may be competitively disadvantaged by customers choosing to do business with private mortgage insurers that have higher financial strength ratings. In addition, the current PMIERS do not include a specific ratings requirement with respect to eligibility, but if this were to change in the future, we may become subject to a ratings requirement in order to retain our eligibility status under the PMIERS.

The GSEs currently consider financial strength ratings, among other items, to determine the amount of collateral that an insurer must post when participating in the credit risk transfer transactions currently being conducted by the GSEs. As a result, the returns that we are able to achieve when participating in these transactions are dependent, in part, on our financial strength ratings. We currently use Radian Reinsurance to participate in the GSEs' credit risk transfer transactions. Radian Reinsurance has been assigned a rating of BBB+ by S&P. Market participants with higher ratings than us are assigned lower collateral requirements by the GSEs for these transactions and generally have a lower cost of capital, which may give them a competitive advantage, including the ability to price more aggressively for these transactions.

We believe that financial strength ratings remain a significant consideration for participants seeking to secure credit enhancement in the non-GSE mortgage market, which includes most non-qualified mortgage loans. While this market has remained limited since the financial crisis, we view this market as an area of potential future growth, which could be further accelerated by changes to the QM Rule currently under consideration by the CFPB, and our ability to successfully participate in this market could depend on our ability to secure higher ratings for our mortgage insurance subsidiaries. In addition, if legislative or regulatory changes were to alter the current state of the housing finance industry such that the GSEs no longer operate in their current capacity, we may be forced to compete in a new marketplace in which financial strength ratings may play a greater role. If we are unable to compete effectively in the current or any future markets as a result of the financial strength ratings assigned to our mortgage insurance subsidiaries, the franchise value and future prospects for our mortgage insurance business could be negatively affected.

Our success depends, in part, on our ability to manage risks in our investment portfolio.

Our investment portfolio is an important source of revenue and is our primary source of claims paying resources. Although our investment portfolio consists mostly of highly-rated fixed income investments, our investment strategy is affected by general economic conditions, which may adversely affect the markets for credit and interest-rate-sensitive securities, including the extent and timing of investor participation in these markets, the level and volatility of interest rates and credit spreads and, consequently, the value of our fixed income securities, and as such, we may not achieve our investment objectives. Volatility or lack of liquidity in the markets in which we hold positions has at times reduced the market value of some of our investments, and if this worsens substantially it could have a material adverse effect on our liquidity, financial condition and results of operations.

Interest rates and investment yields on our investments continue to be low compared to historical averages, which has reduced the investment income we generate. Although in recent years our portfolio yield has been increasing, continued low interest rates could negatively affect our portfolio yield. For the significant portion of our investment portfolio held by our insurance subsidiaries, to receive full capital credit under insurance regulatory requirements and under the PMIERS, we generally are limited to investing in highly-rated investments that are unlikely to increase our investment returns. Because we depend on our investments as a source of revenue, a prolonged period of lower than expected investment yields would have an adverse impact on our revenues and could potentially adversely affect our results of operations. Further, future updates to the NAIC Model Act or PMIERS could impact our investment choices, which could negatively impact our investment strategy.

In addition, we structure our investment portfolio to satisfy our expected liabilities, including claim payments in our mortgage insurance business. If we underestimate our liabilities or improperly structure our investments to meet these liabilities, we could have unexpected losses resulting from the forced liquidation of investments before their maturity, which could adversely affect our results of operations.

Radian Group's sources of liquidity may be insufficient to fund its obligations.

Radian Group serves as the holding company for our operating subsidiaries and does not have any operations of its own. As of December 31, 2019, Radian Group had available, either directly or through unregulated subsidiaries, unrestricted cash and liquid investments of \$652.6 million. This amount excludes certain additional cash and liquid investments that have been advanced to Radian Group from our subsidiaries for corporate expenses and interest payments. Total liquidity, which includes our undrawn \$267.5 million unsecured revolving credit facility entered into in October 2017, was \$920.1 million as of December 31, 2019.

We expect Radian Group's principal liquidity demands for the next 12 months to be: (i) the payment of corporate expenses, including taxes; (ii) interest payments on our outstanding debt obligations; (iii) the payment of dividends on our common stock, which we recently increased to \$0.125 per share; and (iv) the repurchases of Radian Group common stock pursuant to our authorized share repurchase program.

In addition to our ongoing short-term liquidity needs discussed above, our most significant need for liquidity beyond the next 12 months is the repayment of \$900 million aggregate principal amount of our senior debt due in future years. Radian Group's liquidity demands for the next 12 months or in future periods could also include: (i) early repurchases or redemptions of portions of our debt obligations and (ii) potential investments to support our business strategy, including potential additional capital contributions to our subsidiaries and possible acquisitions or investments in new businesses.

In addition to available cash and marketable securities, Radian Group's principal sources of cash to fund future liquidity needs include: (i) payments made to Radian Group by its subsidiaries under expense- and tax-sharing arrangements; (ii) net investment income earned on its cash and marketable securities; (iii) to the extent available, dividends or other distributions from our subsidiaries; and (iv) amounts that Radian Guaranty is able to repay under the Surplus Notes. Radian Group also has in place a \$267.5 million unsecured revolving credit facility with a syndicate of bank lenders. At December 31, 2019, the full \$267.5 million remains undrawn and available under the facility. Radian Group's expense-sharing arrangements with its principal operating subsidiaries require those subsidiaries to pay their allocated share of certain holding-company-level expenses, including interest payments on our outstanding senior notes. The expense-sharing arrangements between Radian Group and our mortgage insurance subsidiaries, as amended, have been approved by the Pennsylvania Insurance Department, but such approval may be modified or revoked at any time.

In light of Radian Guaranty's negative unassigned surplus related to operating losses in prior periods and the ongoing need to set aside contingency reserves, we do not anticipate that Radian Guaranty will be permitted under applicable insurance laws to pay ordinary dividends to Radian Group for the foreseeable future. Based on the typical 10-year holding requirement, Radian Guaranty is scheduled to release contingency reserves to unassigned surplus in material amounts beginning in 2024,

which should accelerate the reduction of its negative unassigned surplus. See Note 18 of Notes to Consolidated Financial Statements for additional information on contingency reserve requirements.

Further, the Services segment has not generated sufficient cash flows to pay dividends to Radian Group. In the event the cash flow from operations of the Services segment is not adequate to fund all of its needs, Radian Group may provide additional funds to the Services segment in the form of a capital contribution or an intercompany note.

As of December 31, 2019, certain of our subsidiaries have incurred federal NOLs that could not be carried-back and utilized on a separate company tax return basis. As a result, we are not currently obligated under our tax-sharing agreement to reimburse these subsidiaries for their separate company federal NOL carryforward. However, if in a future period, one of these subsidiaries utilizes its share of federal NOL carryforwards on a separate entity basis, then Radian Group may be obligated to fund such subsidiary's share of our consolidated tax liability to the IRS. Certain subsidiaries currently have federal NOLs on a separate entity basis that are available for future utilization. However, we do not expect to fund material obligations related to these subsidiary NOLs.

In light of Radian Group's short- and long-term needs, it is possible that our sources of liquidity could be insufficient to fund our obligations and could exceed available holding company funds. If this were to occur, we may need or otherwise may decide to increase our available liquidity, including by reducing our quarterly dividend or terminating our stock repurchase authorizations, incurring additional debt, by issuing additional equity or by selling assets, any of which we may be unable to do on favorable terms, if at all.

Our revolving credit facility contains restrictive covenants that could limit our operating flexibility. A default under our credit facility could trigger an event of default under the terms of our senior notes. We may not have access to funding under our credit facility when we require it.

Radian Group is a party to a \$267.5 million unsecured revolving credit facility with a syndicate of bank lenders. As of December 31, 2019, no borrowings were outstanding under the credit facility.

The credit facility contains certain restrictive covenants that, among other things, provide certain limitations on our ability to incur additional indebtedness, make investments, create liens, transfer or dispose of assets, merge with or acquire other companies and pay dividends. The credit facility also requires us to comply with certain financial covenants and further provides that: (i) Radian Group must be rated by S&P or Moody's and (ii) Radian Guaranty must remain eligible under the PMIERS to insure loans purchased by the GSEs. A failure to comply with these covenants or the other terms of the credit facility could result in an event of default, which could: (a) result in the termination of the commitments by the lenders to make loans to Radian Group under the credit facility and (b) enable the lenders to declare, subject to the terms and conditions of the credit facility, any outstanding obligations under the credit facility to be immediately due and payable.

Further, the occurrence of an event of default under the terms of our credit facility may trigger an event of default under the terms of our senior notes. An event of default would occur under the terms of our senior notes if a default: (i) in any scheduled payment of principal of other indebtedness by Radian Group or its subsidiaries of more than \$100 million principal amount occurs, after giving effect to any applicable grace period or (ii) in the performance of any term or provision of any indebtedness of Radian Group or its subsidiaries in excess of \$100 million principal amount occurs that results in the acceleration of the date such indebtedness is due and payable, subject to certain limited exceptions. See Note 12 of Notes to Consolidated Financial Statements for more information on the carrying value of our senior notes.

If the commitments of the lenders under the credit facility are terminated or we are unable to satisfy certain covenants or representations, we may not have access to funding in a timely manner, or at all, when we require it. If funding is not available under the credit facility when we require it, our ability to continue our business practices or pursue our current strategy could be limited. If the indebtedness under the credit facility or our senior notes is accelerated, we may not be able to repay our debt or borrow sufficient funds to refinance it.

Our credit facility terminates on October 16, 2020 and we may be unable to renew or replace this facility on acceptable terms. If we are unable to obtain new financing or funding when needed, or if there were to be an event of default under our credit facility or senior notes for any reason, our cash flows, financial results or financial condition could be materially and adversely affected.

We may not continue to pay dividends at the same rate we are currently paying them, or at all, and any decrease in or suspension of payment of a dividend could cause our stock price to decline.

Effective February 13, 2020, Radian Group's board of directors authorized an increase to the Company's quarterly cash dividend to \$0.125 per share effective for the quarterly dividend payable in March 2020. The payment of future cash dividends

is subject to the determination each quarter by our board of directors that the dividend remains in the best interests of the Company and our stockholders, which determination will be based on a number of factors, including, among others, economic conditions, our earnings, financial condition, actual and forecasted cash flows, capital resources, capital requirements and alternative uses of capital, including potential investments to support our business strategy and possible acquisitions or investments in new businesses. Any decrease in the amount of the dividend, or suspension or discontinuance of payment of a dividend, could cause our stock price to decline.

Our reported earnings are subject to fluctuations based on changes in our trading securities, equity securities and short-term investments that require us to adjust their fair market value.

We have significant holdings of trading securities, equity securities and short-term investments that we carry at fair value. Because the changes in fair value of these financial instruments are reflected on our statements of operations each period, they affect our reported earnings and can create earnings volatility. Among other factors, interest rate changes, market volatility and declines in the value of underlying collateral will impact the value of our investments, potentially resulting in unrealized losses that could negatively impact our results of operations.

Our information technology systems may fail or become outmoded, be temporarily interrupted or otherwise cause us to be unable to meet our customers' demands.

Our business is highly dependent on the effective operation of our information technology systems, which are vulnerable to damage or interruption from power outages, computer and telecommunications failures, computer viruses, cyber-attacks, security breaches, catastrophic events and errors in usage. Although we have disaster recovery and business continuity plans in place, we may not be able to adequately execute these plans in a timely fashion.

Additionally, our ability to meet the needs of our customers depends on our ability to keep pace with technological advances and to invest in new technology as it becomes available or otherwise upgrade our technological capabilities. We rely on e-commerce and other technologies to provide our products and services to our customers, and they generally require that we provide an increasing number of our products and services electronically. Accordingly, we may not satisfy our customers' requirements if we fail to invest sufficient resources or are otherwise unable to maintain and upgrade our technological capabilities. Further, customers may choose to do business only with business partners with which they are technologically compatible and may choose to retain existing relationships with mortgage insurance or mortgage and real estate services providers rather than invest the time and resources to on-board new providers. As a result, technology can represent a potential barrier to signing new customers.

Because we rely on our information technology systems for many critical functions, including connecting with our customers, if such systems were to fail, experience a prolonged interruption, or become outmoded, we may experience a significant disruption in our operations and in the business we receive, which could have a material adverse effect on our business, financial condition and operating results.

In addition, we are in the process of implementing a major technology project to improve our operating systems, including a new platform for our mortgage insurance underwriting, policy administration, claims management and billing processes. The implementation of these technological improvements is complex, expensive, time consuming and, in certain respects, depends on the ability of third parties to perform their obligations in a timely manner. If we fail to timely and successfully implement the new technology systems and business processes, or if the systems do not operate as expected, it could have an adverse impact on our business, business prospects and results of operations.

We could incur significant liability or reputational harm if the security of our information technology systems is breached, including as result of a cyberattack, or we otherwise fail to protect confidential information, including non-public personal information that we maintain.

Our information technology systems may be vulnerable to physical or electronic intrusions, computer viruses or other attacks, including cyberattacks. In recent years, cyberattacks such as distributed denial of service attacks, computer viruses, hacking, malware, ransomware, phishing or other forms of social engineering and insider threats designed to obtain confidential information, destroy data, disrupt or degrade service, sabotage systems or to cause other damage have grown in volume and level of sophistication. Further, the risks of cyberattacks and information security breaches continue to increase in businesses such as ours due to, among other things, the proliferation of new technologies and the use of digital channels to conduct our business, including connectivity with customer devices that are beyond our security control systems.

As part of our business, we, and certain of our subsidiaries and affiliates, maintain large amounts of confidential information, including non-public personal information on borrowers, consumers and our employees. If the security of our

information technology is breached, including as a result of a cyberattack, it could result in the loss or misuse of this information, which could, in turn, result in potential regulatory actions or litigation, including material claims for damages, as well as interruption to our operations and damage to our customer relationships and reputation. While we have information security policies, controls and systems in place in order to attempt to prevent, detect and respond to unauthorized use or disclosure of confidential information, including non-public personal information, there can be no assurance that such use or disclosure will not occur. Any cybersecurity event or other compromise of the security of our information technology systems, or unauthorized use or disclosure of confidential information, could subject us to liability, regulatory scrutiny and action, damage our reputation and negatively affect our ability to attract and maintain customers, and could have a material adverse effect on our business prospects, financial condition and results of operations.

We are subject to litigation and regulatory proceedings.

We operate in highly regulated industries that are subject to a heightened risk of litigation and regulatory proceedings. We often are a party to material litigation and also are subject to legal and regulatory claims, assertions, actions, reviews, audits, inquiries and investigations. Additional lawsuits, legal and regulatory proceedings and inquiries and other matters may arise in the future. The outcome of existing and future legal and regulatory proceedings and inquiries and other matters could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief which could require significant expenditures or have a material adverse effect on our business prospects, results of operations and financial condition. See “Item 3. Legal Proceedings.”

Legislation and administrative and regulatory changes and interpretations could impact our businesses.

Our businesses are subject to and may be impacted by many federal and state lending, insurance and consumer laws and regulations and may be affected by changes in these laws and regulations or the way they are interpreted or applied. In particular, our businesses may be significantly impacted by the following:

- legislation, administrative or regulatory action impacting the charters or business practices of the GSEs;
- reform of the U.S. housing finance system;
- legislation and regulation impacting the FHA and its competitive position versus private mortgage insurers;
- state insurance laws and regulations that address, among other items, licensing of companies to transact business, claims handling, reinsurance requirements, premium rates, policy forms offered to customers and requirements for Risk-to-capital, minimum policyholder positions, reserves (including contingency reserves), surplus, reinsurance and payment of dividends;
- the application of state, federal or private sector programs aimed at supporting borrowers and the housing market;
- the application of RESPA, the FCRA and other laws to our businesses;
- new federal standards and oversight for mortgage insurers, including as a result of the recommendation of the Federal Insurance Office of the U.S. Department of the Treasury that federal standards and oversight for mortgage insurers be developed and implemented;
- the implementation of new regulations under, or the potential repeal or amendment of provisions of, the Dodd-Frank Act, including future changes in the QM Rule and QM loan requirements as are currently being contemplated by the CFPB; and
- the implementation in the U.S. of the Basel III capital adequacy guidelines.

See “Item 1. Business—Regulation.”

Any of the items discussed above could adversely affect our results of operations, financial condition and business prospects. In addition, our businesses could be impacted by new legislation or regulations, as well as changes to existing legislation or regulations or the way they are interpreted or applied, including changes that are not currently contemplated and which could occur at any time.

We rely on our management team and our business could be harmed if we are unable to retain qualified personnel or successfully develop and/or recruit their replacements.

Our success depends, in part, on the skills, working relationships and continued services of our management team and other key personnel, any of whom could terminate his or her relationship with us at any time. The unexpected departure of key personnel could adversely affect the conduct of our business. In such event, we would be required to obtain other personnel to

manage and operate our business. In addition, we will be required to replace the knowledge and expertise of our workforce as our workers retire. In either case, there can be no assurance that we would be able to develop or recruit suitable replacements for the departing individuals, that replacements could be hired, if necessary, on terms that are favorable to us, or that we can successfully transition such replacements in a timely manner. Failure to effectively implement our succession planning efforts and to ensure effective transfers of knowledge and smooth transitions involving members of our management team and other key personnel could adversely affect our business and results of operations. Without a properly skilled and experienced workforce, our costs, including costs associated with a loss of productivity and costs to replace employees, may increase, and this could negatively impact our earnings.

We may make investments to grow our existing businesses, pursue new lines of business or new business initiatives, acquire other companies or engage in other strategic initiatives, each of which may result in additional risks and uncertainties.

In support of our growth strategy, we may make strategic investments, acquisitions or pursue other strategic initiatives that expose us to additional risks and uncertainties that include, without limitation:

- the use of capital and potential diversion of other resources, such as the diversion of management’s attention from our core businesses and potential disruption of those businesses;
- the assumption of liabilities in connection with any strategic investment, including any acquired business;
- our ability to comply with additional regulatory requirements associated with new products, services, lines of business, or other business or strategic initiatives;
- our ability to successfully integrate or develop the operations of any new business initiative or acquisition;
- the possibility that any new business initiatives may be disruptive to our existing customer relationships;
- the possibility that we may fail to realize the anticipated benefits of an acquisition or other strategic investment or initiative, including expected synergies, cost savings, or sales or growth opportunities, within the anticipated timeframe or at all; and
- the possibility that we may fail to achieve forecasted results for a strategic investment, acquisition or other initiative that could result in lower or negative earnings contribution and/or impairment charges associated with intangible assets acquired.

We face risks associated with our Services business.

Our Services business exposes us to certain risks that may negatively affect our results of operations and financial condition, including, among others, the following:

- Our Services revenue is dependent on a limited number of large customers that represent a significant proportion of our Services total revenues. The loss or reduction of business from one or more of these significant customers could adversely affect our revenues and results of operations. In addition, Radian Guaranty does business with many of these significant customers. In the event of a dispute between a significant customer and either of our business segments, the overall customer relationship for Radian could be negatively impacted.
- Due to the transactional nature of our business, our Services segment revenues are subject to fluctuation from period to period and are difficult to predict.
- The services we offer through our Services business are influenced by the level of overall activity in the mortgage, real estate and mortgage finance markets generally. If real estate transaction volumes decline, we could experience less demand for our real estate and title services.
- Red Bell is a licensed real estate brokerage and provides real estate brokerage services in all 50 states and the District of Columbia. As a licensed real estate brokerage, Red Bell receives residential real estate information from various multiple listing services (“MLS”). Red Bell receives this information, which it uses in its business to broker real estate transactions and provide valuation products and services, pursuant to the terms of agreements with the MLS providers. If these agreements were to terminate or Red Bell otherwise were to lose access to this information, it could negatively impact Red Bell’s ability to conduct its business and our future real estate strategies.
- By their nature, title claims are often complex, vary greatly in dollar amounts and are affected by economic and market conditions and the legal environment existing at the time of settlement of the claims. Estimating future title loss payments is difficult because of the complex nature of title claims, the long periods of time over which claims

are paid, significantly varying dollar amounts of individual claims and other factors. From time to time, we could experience large losses or an overall worsening of our loss payment experience in regard to the frequency or severity of claims that require us to record additional charges to our claims loss reserve. These loss events are unpredictable and could adversely affect the financial performance of our Services business.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

In addition to leases of other properties and facilities to support our business operations, the Company currently leases approximately 174,000 square feet of office and storage space at our corporate headquarters, located at 1500 Market Street, West Tower, in Philadelphia, Pennsylvania.

We believe our existing properties are well utilized, suitable and adequate for our present circumstances.

Item 3. Legal Proceedings.

We are routinely involved in a number of legal actions and proceedings, including reviews, audits and inquiries by various regulatory entities, as well as litigation and other disputes arising in the ordinary course of our business. These proceedings could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief that could require significant expenditures or have other effects on our business. Management believes, based on current knowledge and after consultation with counsel, that the outcome of such actions will not have a material adverse effect on our consolidated financial condition. The outcome of litigation and other legal and regulatory matters and proceedings is inherently uncertain, and it is possible that one or more of the matters currently pending or threatened could have an adverse effect on our liquidity, financial condition or results of operations for any particular period. In accordance with applicable accounting standards and guidance, we establish accruals only when we determine both that it is probable that a loss has been incurred and the amount of the loss is reasonably estimable. We accrue the amount that represents our best estimate of the probable loss; however, if we can only determine a range of estimated losses, we accrue an amount within the range that, in our judgment, reflects the most likely outcome, and if none of the estimates within the range is more likely, we accrue the minimum amount of the range.

In the course of our regular review of pending legal and regulatory matters, we determine whether it is reasonably possible that a potential loss may have a material impact on our liquidity, results of operations or financial condition. If we determine such a loss is reasonably possible, we disclose information relating to such potential loss, including an estimate or range of loss or a statement that such an estimate cannot be made. On a quarterly basis, we review relevant information with respect to loss contingencies and update our accruals, disclosures and estimates of reasonably possible losses or range of losses based on such reviews. We are often unable to estimate the possible loss or range of loss until developments in such matters have provided sufficient information to support an assessment of the range of possible loss, such as quantification of a damage demand from plaintiffs, discovery from other parties and investigation of factual allegations, rulings by the court on motions or appeals, analysis by experts, and the progress of settlement negotiations. In addition, we generally make no disclosures for loss contingencies that are determined to be remote. For matters for which we disclose an estimated loss, the disclosed estimate reflects the reasonably possible loss or range of loss in excess of the amount accrued, if any.

Loss estimates are inherently subjective, based on currently available information, and are subject to management's judgment and various assumptions. Due to the inherently subjective nature of these estimates and the uncertainty and unpredictability surrounding the outcome of legal and other proceedings, actual results may differ materially from any amounts that have been accrued.

On December 22, 2016, Ocwen Loan Servicing, LLC and Homeward Residential, Inc. (collectively, "Ocwen") filed a complaint in the U.S. District Court for the Eastern District of Pennsylvania against Radian Guaranty alleging breach of contract and bad faith claims and seeking monetary damages and declaratory relief. Ocwen has also initiated similar legal proceedings against several other mortgage insurers. On December 17, 2016, Ocwen separately filed a parallel arbitration petition against Radian Guaranty before the American Arbitration Association ("AAA") asserting substantially the same allegations (the "Arbitration"). Ocwen's filings together listed 9,420 mortgage insurance certificates issued under multiple insurance policies, including Pool Insurance policies, as subject to the dispute. On June 5, 2017, Ocwen filed an amended complaint and an amended petition (collectively, the "Amended Filings") with both the court and the AAA, respectively, together listing 8,870 certificates as subject to the dispute. On April 11, 2018, the parties entered into a confidential agreement with respect to all certificates subject to the dispute. The confidential agreement resolved certain categories of claims involved

in the dispute and, on April 12, 2018, the parties filed a stipulation of voluntary dismissal of the federal court proceeding and the trial judge issued an order dismissing all claims and counterclaims subject to the parties' agreement. Radian Guaranty was not required to make any payment in connection with this confidential agreement. Pursuant to the confidential agreement, the parties: (1) dismissed the federal court proceeding; (2) narrowed the scope of the dispute to Ocwen's breach of contract claims seeking payment of insurance benefits on approximately 2,500 certificates that Ocwen was previously pursuing through the Amended Filings; and (3) agreed to resolve the remaining dispute through the Arbitration. The Arbitration is proceeding, and Radian continues to defend against Ocwen's claims vigorously.

On August 31, 2018, Nationstar Mortgage LLC d/b/a Mr. Cooper ("Nationstar") filed a complaint in the U.S. District Court for the Eastern District of Pennsylvania against Radian Guaranty (the "Complaint") alleging breach of contract, bad faith, equitable indemnification, unjust enrichment, and conversion claims and seeking monetary damages and declaratory relief. Exhibit 1 to the Complaint lists 3,014 mortgage insurance certificates issued under multiple insurance policies as subject to disputes involving insurance coverage decisions (the "Coverage Disputed Loans"). Exhibit 2 to the Complaint further lists 2,231 mortgage insurance certificates issued under multiple insurance policies as subject to disputes involving premium refund requests. In December 2018, Radian Guaranty filed a motion to dismiss the Complaint. In March 2019, the trial judge issued an order granting in part, and denying in part, our motion to dismiss, and dismissed Nationstar's unjust enrichment and conversion claims. In May 2019, Radian Guaranty filed an answer, with affirmative defenses and counterclaims, in response to the Complaint. On September 23, 2019, the trial judge entered as an order a joint stipulation submitted by Nationstar and Radian Guaranty that narrowed the scope of the dispute involving Coverage Disputed Loans to claims relating to 1,704 mortgage insurance certificates. Radian Guaranty believes that Nationstar's allegations and claims in the legal proceedings described above are without merit and legally deficient, and continues to defend against these claims vigorously.

In 2019, the Company increased its IBNR reserve estimate by \$30.5 million related to our best estimate of our probable loss in connection with the above legal proceedings. While Radian believes it has substantial defenses in these matters and intends to continue to defend against these claims vigorously, it is not feasible to predict the ultimate outcome of these disputes, and the Company could in the future be required to pay amounts as a result of settlements or decisions in these matters, potentially in excess of accruals.

We also are periodically subject to reviews and audits, as well as inquiries, information-gathering requests and investigations. In connection with these matters, from time to time we receive requests and subpoenas seeking information and documents related to aspects of our business.

Our Master Policies establish the timeline within which any suit or action arising from any right of an insured under the policy generally must be commenced. In general, any suit or action arising from any right of an insured under the policy must be commenced within two years after such right first arose for primary insurance and within three years for certain other policies, including certain Pool Insurance policies. Although we believe that our Loss Mitigation Activities are justified under our policies, we continue to face challenges from certain lender and servicer customers regarding our Loss Mitigation Activities, which may result in some reversals of our decisions regarding Rescissions, Claim Denials or Claim Curtailments. To the extent we are unable to resolve challenges from our customers regarding Loss Mitigation Activities and our claim payment practices, it could result in arbitration or judicial proceedings and we may need to reassume the risk on, and increase loss reserves for, those policies or pay additional claims.

The legal and regulatory matters discussed above could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief that could require significant expenditures or have other effects on our business. Management believes, based on current knowledge and after consultation with counsel, that the outcome of such actions will not have a material adverse effect on our consolidated financial condition. The outcome of litigation and other legal and regulatory matters and proceedings is inherently uncertain, and it is possible that one or more of the matters currently pending or threatened could have an adverse effect on our liquidity, financial condition or results of operations for any particular period.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Our common stock is listed on the New York Stock Exchange (“NYSE”) under the symbol “RDN.” At February 25, 2020, there were 198,640,237 shares of our common stock outstanding and 54 holders of record.

In 2019 and 2018, we declared quarterly cash dividends on our common stock equal to \$0.0025 per share. We presently expect to continue to declare a regular quarterly dividend on our common stock. On February 13, 2020, Radian Group’s board of directors authorized an increase to the Company’s quarterly cash dividend from \$0.0025 to \$0.125 per share. For information on Radian Group’s ability to pay dividends, see “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources.”

Reference is made to the information in Item 12 of this report under the caption “Equity Compensation Plans,” which is incorporated herein by reference.

Issuance of Unregistered Securities

During the last three years, no equity securities of the Company were sold that were not registered under the Securities Act.

Issuer Purchases of Equity Securities

The following table provides information about purchases of Radian Group common stock by us (and our affiliated purchasers) during the three months ended December 31, 2019.

Issuer Purchases of Equity Securities				
(\$ in thousands, except per-share amounts)				
Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (2)	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (2)
Share repurchase program				
10/1/2019 to 10/31/2019	1,094,069	\$ 22.93	1,090,875	\$ 150,000
11/1/2019 to 11/30/2019	434	25.46	—	150,000
12/1/2019 to 12/31/2019	401	25.37	—	150,000
Total	<u>1,094,904</u>		<u>1,090,875</u>	

- (1) Includes 4,029 shares tendered by employees as payment of taxes withheld on the vesting of certain restricted stock awards granted under the Company’s equity compensation plans.
- (2) On August 14, 2019, Radian Group’s board of directors approved a share repurchase program authorizing the Company to spend up to \$200 million to repurchase Radian Group common stock. Pursuant to this authorization, during the three months ended December 31, 2019, the Company purchased 1,090,875 shares at an average price of \$22.93 per share, including commissions. On February 13, 2020, Radian Group’s board of directors authorized a \$275 million increase in this program, bringing the total authorization to repurchase shares up to \$475 million, excluding commissions. This share repurchase program expires on August 31, 2021. As of February 25, 2020, purchase authority of up to \$359.2 million remained available under this program. See Note 14 of Notes to Consolidated Financial Statements for additional information.

Item 6. Selected Financial Data.

The information in the following table should be read in conjunction with our Consolidated Financial Statements and Notes thereto included in Item 8 and the information included in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

<u>(In millions, except per-share amounts and ratios)</u>	2019	2018	2017	2016	2015
Consolidated Statements of Operations					
Net premiums earned—insurance	\$ 1,145.3	\$ 1,014.0	\$ 932.8	\$ 921.8	\$ 915.9
Services revenue	154.6	145.0	155.1	168.9	157.2
Net investment income	171.8	152.5	127.2	113.5	81.5
Net gains (losses) on investments and other financial instruments	51.7	(42.5)	3.6	30.8	35.7
Total revenues	1,527.0	1,273.0	1,221.6	1,238.5	1,193.3
Provision for losses	132.0	104.6	135.2	202.8	198.6
Cost of services	108.3	98.1	104.6	114.2	93.7
Other operating expenses	306.1	280.8	267.3	244.9	242.4
Restructuring and other exit costs	—	6.1	17.3	—	—
Interest expense	56.3	61.5	62.8	81.1	91.1
Impairment of goodwill	4.8	—	184.4	—	—
Amortization and impairment of acquired intangible assets	22.3	12.4	27.7	13.2	13.0
Pretax income from continuing operations	849.0	684.2	346.7	483.7	437.8
Income tax provision	176.7	78.2	225.6	175.4	156.3
Net income	672.3	606.0	121.1	308.3	286.9
Diluted net income per share (1)	\$ 3.20	\$ 2.77	\$ 0.55	\$ 1.37	\$ 1.22
Cash dividends declared per share	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01
Weighted average shares outstanding—diluted (1) . . .	210.3	218.6	220.4	229.3	246.3

<u>(In millions, except per-share amounts and ratios)</u>	2019	2018	2017	2016	2015
Consolidated Balance Sheets					
Total investments	\$ 5,658.7	\$ 5,153.0	\$ 4,643.9	\$ 4,462.4	\$ 4,298.7
Total assets	6,808.3	6,314.7	5,900.9	5,863.2	5,642.1
Unearned premiums	626.8	739.4	723.9	681.2	680.3
Reserve for losses and LAE	404.8	401.4	507.6	760.3	976.4
Senior notes (2).	887.1	1,030.3	1,027.1	1,069.5	1,219.5
Stockholders' equity	4,048.7	3,488.7	3,000.0	2,872.3	2,496.9
Book value per share	\$ 20.13	\$ 16.34	\$ 13.90	\$ 13.39	\$ 12.07
Selected Ratios—Mortgage Insurance					
Loss ratio (3).	11.6%	10.4%	14.6%	22.2%	21.7%
Expense ratio—net premiums earned basis (3)	22.2%	23.9%	24.7%	22.7%	23.7%
Risk-to-capital—Radian Guaranty only	13.6:1	13.9:1	12.8:1	13.5:1	14.3:1
Risk-to-capital—Mortgage Insurance combined	12.3:1	12.8:1	12.1:1	13.6:1	14.6:1
Other Data—Mortgage Insurance					
Primary NIW	\$ 71,327	\$ 56,547	\$ 53,905	\$ 50,530	\$ 41,411
Direct primary IIF	240,558	221,443	200,724	183,450	175,584
Direct primary RIF	60,921	56,728	51,288	46,741	44,627
Persistency Rate (12 months ended) (4).	78.2%	83.1%	81.1%	76.7%	78.8%
Persistency (quarterly, annualized) (4).	75.0%	85.5%	79.4%	76.8%	81.8%

- (1) Diluted net income per share and average share information calculated in accordance with the accounting standard regarding earnings per share. See Note 3 of Notes to Consolidated Financial Statements.
- (2) Includes Senior Notes and Convertible Senior Notes.
- (3) Calculated using amounts determined under GAAP, using provision for losses to calculate the loss ratio and policy acquisition costs and other operating expenses of our Mortgage Insurance segment to calculate the expense ratio, as percentages of net premiums earned—insurance.
- (4) Based on loan level detail for the fourth quarter of each year shown. The Persistency Rate on a quarterly, annualized basis may be impacted by seasonality or other factors, and may not be indicative of full-year trends. In Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, see "Key Factors Affecting Our Results—Mortgage Insurance—IIF; Persistency Rate; Mix of Business" and "Results of Operations—Mortgage Insurance—NIW, IIF, RIF" for additional information about the Persistency Rate.

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

The following analysis of our financial condition and results of operations should be read in conjunction with our Consolidated Financial Statements and Notes thereto included in Item 8. Certain terms and acronyms used throughout this report are defined in the Glossary of Abbreviations and Acronyms included as part of this report. Some of the information in this discussion and analysis or included elsewhere in this report, including information with respect to our projections, plans and strategy for our business, are forward-looking statements that involve risks, uncertainties and assumptions. Our actual results and the timing of events could differ materially from those anticipated by these forward-looking statements as a result of many factors, including those discussed under “Cautionary Note Regarding Forward-Looking Statements—Safe Harbor Provisions” and in the Risk Factors detailed in Item 1A of this Annual Report on Form 10-K.

This section of our Annual Report on Form 10-K generally discusses our financial results for the years ended December 31, 2019 and 2018 and a year-over-year comparison between 2019 and 2018. Detailed discussions of our financial results for the year ended December 31, 2017, including the year-over-year comparisons between 2018 and 2017, that are not included in this Annual Report on Form 10-K can be found in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on February 28, 2019.

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Overview

We are a diversified mortgage and real estate services business with two business segments—Mortgage Insurance and Services. Our Mortgage Insurance segment provides credit-related insurance coverage, principally through private mortgage insurance, as well as other credit risk management solutions, to mortgage lending institutions and mortgage credit investors. Our Services segment is primarily a fee-for-service business that offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain.

Operating Environment

As a seller of mortgage credit protection and other mortgage and credit risk management solutions, our results are subject to macroeconomic conditions and other events that impact the housing finance and real estate markets, including seasonal fluctuations, that specifically impact the mortgage origination environment, the credit performance of our underlying insured assets and our future business opportunities. The macroeconomic conditions, seasonality and other events that impact the housing, mortgage finance and related real estate markets also affect the demand for our real estate, title and mortgage services offered through our Services segment.

Our mortgage insurance business continues to benefit from the improvement in market conditions since the financial crisis of 2007-2008, and from the current strength of the U.S. economy and housing finance industry. In addition, our mortgage insurance business has benefited from strong demand for home purchases by first-time home buyers and other purchasers requiring low down payment loans. The positive growth in home prices and historically low levels of unemployment are reflected in the performance and favorable results of our existing portfolio of IIF, as evidenced by, among other things, the improvement in our levels of new defaults, incurred losses, paid claims and cure rates.

Loans originated for the private mortgage insurance market since 2008 have consisted primarily of high credit quality loans and mortgage underwriting quality remained strong throughout 2019. These high credit quality loans have significantly better credit performance than the loans originated during 2008 and prior periods. Significant contributors to the improved loan quality include the greater risk discipline of loan originators and the private mortgage insurance providers, the Qualified Mortgage (QM) loan requirements under the Dodd Frank Act (including the QM Patch, which is scheduled to expire in January 2021) and the loan-level criteria of the PMIERS financial requirements.

Based on the most recently available industry reports, total mortgage origination volume was higher for 2019 as compared to 2018, due to an increase in both purchase and refinance originations. Mortgage originations for home purchases increased 7% in 2019 as compared to 2018, while refinancing activity increased 74% due to declining interest rates. Mortgage insurance penetration in the private mortgage insurance market has gradually increased over the past few years and is generally three to five times higher for purchase originations than for refinancings. In 2019 and 2018, our results were favorably impacted by: (i) the strong mortgage origination market, including the elevated volume of refinance originations in 2019, and (ii) increased private mortgage insurance penetration rates for both purchase and refinance originations. These trends resulted in a larger private mortgage insurance market in 2019 as compared to 2018.

Although it is difficult to predict future volumes, the most recently available industry reports currently project the mortgage origination market for 2020 to be lower in comparison to 2019, with purchase loan volume expected to increase, but to be more than offset by a significant decrease in refinancings. We also currently expect the private mortgage insurance market for 2020 to decrease in comparison to 2019, driven by a decrease in refinance originations. Based on current industry forecasts and our projections, we expect our NIW in 2020 to be approximately \$60 billion.

Our Services business, comprising real estate, title and mortgage services, is largely a transactional business that depends on the level of customer activity and may be sensitive to changes in macro-level home sales, home prices, interest rates, home default rates and GSE guidelines. In addition, demand for our title services may be impacted by general marketplace competition in the real estate title industry, coupled with housing and mortgage banking related conditions such as new home sales, the sizes of the real estate purchase and refinance markets and interest rate fluctuations. See "Item 1. Business—Services—Services Business Overview" and Notes 4 and 7 of Notes to Consolidated Financial Statements for additional information regarding the Services segment.

PMIERS. In order to be eligible to insure loans purchased by the GSEs, mortgage insurers such as Radian Guaranty must meet the GSEs' eligibility requirements, or PMIERS. The GSEs have significant discretion under the PMIERS and may amend the PMIERS at any time. The most recent revisions to PMIERS, or PMIERS 2.0, became effective on March 31, 2019. Radian Guaranty currently is an approved mortgage insurer under the PMIERS. See "Item 1. Business—Regulation—GSE Requirements," "Liquidity and Capital Resources—*Mortgage Insurance*" and Note 18 of Notes to Consolidated Financial Statements for additional information.

Competition

In our mortgage insurance business, our primary competitors include other private mortgage insurers and governmental agencies, principally the FHA and the VA. We compete with other private mortgage insurers on the basis of price, underwriting guidelines, overall service, customer relationships, perceived financial strength (including based on comparative financial strength credit ratings) and reputation, as well as the breadth and quality of the services offered through our Services business that complement our mortgage insurance products. We compete with the FHA and VA primarily on the basis of loan limits, pricing, credit guidelines, terms of our insurance policies and loss mitigation practices. For additional information, see "Item 1. Business—Mortgage Insurance—Competition."

Pricing is highly competitive in the mortgage insurance industry. During 2019, the mortgage insurance industry has continued to shift to a pricing environment where a variety of pricing methodologies and pricing levels are being deployed with differing degrees of risk-based granularity. The shift away from a predominately rate card-based pricing model and the increase in "black box" and other pricing frameworks provides a more dynamic pricing capability that allows for more frequent pricing changes throughout the mortgage insurance industry.

Risk Distribution

In recent years, participants in the private mortgage insurance industry have engaged in a range of risk distribution strategies. In our mortgage insurance business, we use reinsurance as a capital and risk management tool to lower the risk profile and financial volatility of our mortgage insurance portfolio through economic cycles. We have distributed risk through third-party quota share and excess-of-loss reinsurance arrangements, as well as through the capital markets by using mortgage insurance-linked notes transactions. Among other benefits, risk distribution reduces our required capital, lowers our overall

cost of capital and enhances our projected return on capital. Risk distribution may also provide additional claims paying resources and increase our strength as a counterparty. As the industry continues to evolve from a model where private mortgage insurers “originate and hold” risk to an “aggregate, manage and distribute” risk model, we expect to continue to leverage multiple forms of risk distribution. After consideration of the Eagle Re 2020-1 insurance-linked notes transaction that was completed in early 2020, 72% of our primary RIF as of December 31, 2019 is subject to a form of risk distribution.

Key Factors Affecting Our Results

Mortgage Insurance

Our Mortgage Insurance segment provides credit-related insurance coverage, principally through private mortgage insurance, as well as other credit risk management solutions, to mortgage lending institutions and mortgage credit investors nationwide. The following sections discuss certain key drivers affecting our Mortgage Insurance revenue, as well as other key factors affecting our results.

- *IIF; Persistency Rate; Mix of Business.* Our IIF is one of the primary drivers of our future premiums that we expect to earn over time. Although not reflected in the current period financial statements, nor in our reported book value, we expect our IIF to generate substantial earnings in future periods, due to the high credit quality of our current mortgage insurance portfolio and expected Persistency Rate over multiple years.

Based on the composition of our mortgage insurance portfolio, with Monthly Premium Policies comprising a larger proportion of our total portfolio than Single Premium Policies, an increase or decrease in IIF generally has a corresponding impact on premiums earned. Cancellations of our insurance policies as a result of prepayments and other reductions of IIF, such as Rescissions of coverage and claims paid, generally have a negative effect on premiums earned. See “Results of Operations—Mortgage Insurance—*NIW, IIF, RIF*” for more information about the levels and characteristics of our NIW, IIF and RIF.

The ultimate profitability of our mortgage insurance business is affected by the impact of mortgage prepayment speeds based on the mix of business we write. The measure for assessing the impact of policy cancellations on our IIF is our Persistency Rate, defined as the percentage of IIF that remains in force over a period of time. Assuming all other factors remain constant, over the life of the policies, prepayment speeds have an inverse impact on IIF and the expected revenue from our Monthly Premium Policies. Slower loan prepayment speeds, demonstrated by a higher Persistency Rate, result in more IIF remaining in place, providing increased revenue from Monthly Premium Policies over time as premium payments continue. Earlier than anticipated loan prepayments, demonstrated by a lower Persistency Rate, reduce IIF and the revenue from our Monthly Premium Policies. Among other factors, prepayment speeds may be affected by changes in interest rates and other macroeconomic factors. A rising interest rate environment generally will reduce refinancing activity and result in lower prepayments, whereas a declining interest rate environment generally will increase the level of refinancing activity and therefore increase prepayments.

In contrast to Monthly Premium Policies, when Single Premium Policies are cancelled by the insured because the loan has been paid off or otherwise, we accelerate the recognition of any remaining unearned premiums, net of any refunds that may be owed to the borrower. Although these cancellations reduce IIF, assuming all other factors remain constant, the profitability of our Single Premium business increases when Persistency Rates are lower. As a result, we believe that writing a mix of Single Premium Policies and Monthly Premium Policies has the potential to moderate the overall impact on our results if actual prepayment speeds are significantly different from expectations. However, the impact of this moderating effect may be affected by the amount of reinsurance we obtain on portions of our portfolio, with the Single Premium QSR Program currently reducing the proportion of retained Single Premium Policies in our portfolio.

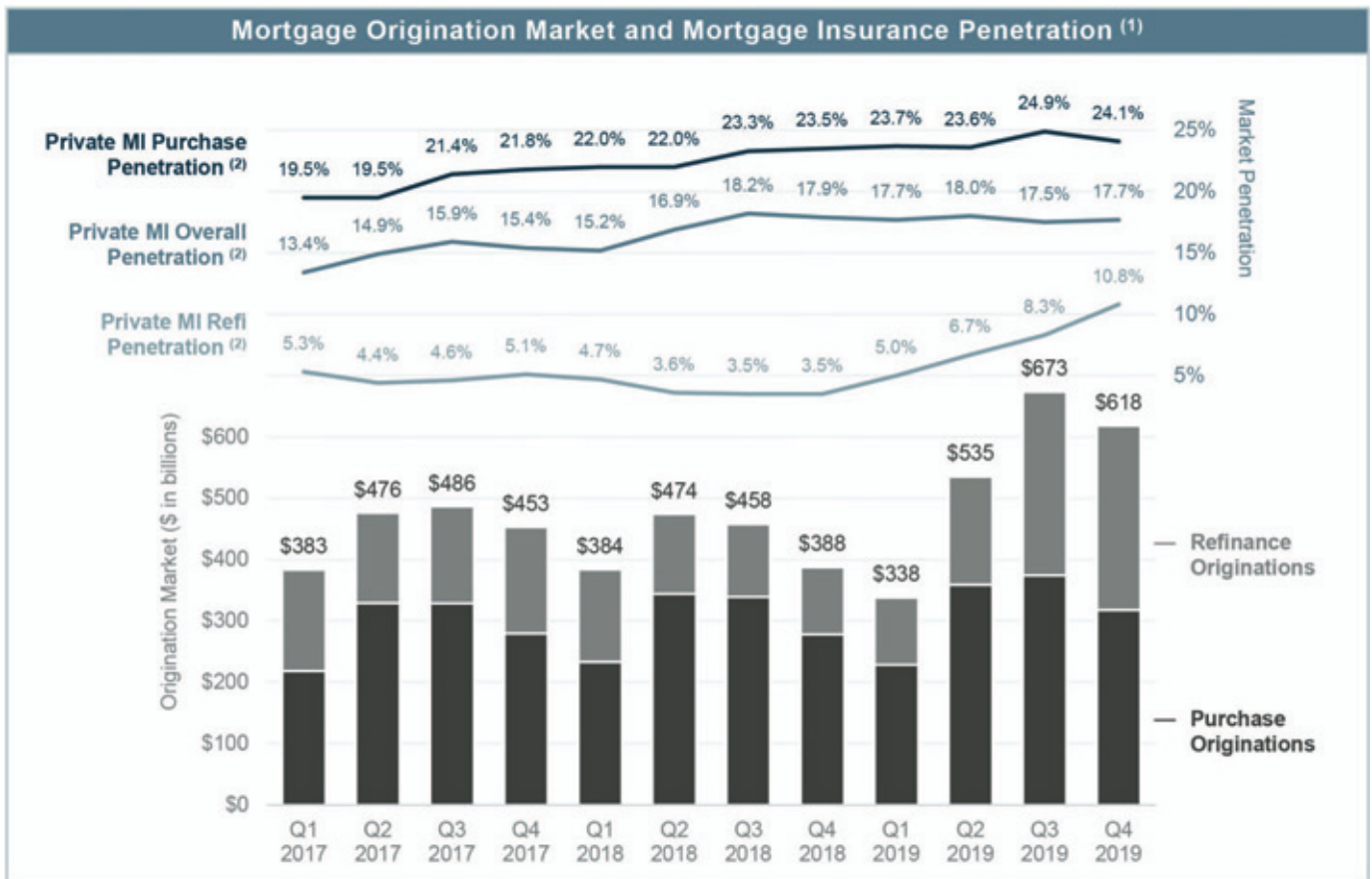
- *NIW; Origination Market; Penetration Rate.* NIW increases our IIF and our premiums written and earned. NIW is affected by the overall size of the mortgage origination market, the penetration percentage of private mortgage insurance into the overall mortgage origination market and our market share of the private mortgage insurance market. The overall mortgage origination market is influenced by macroeconomic factors such as household formation, household composition, home affordability, interest rates, housing markets in general, credit availability and the impact of various legislative and regulatory actions that may influence the housing and mortgage finance industries. The penetration percentage of private mortgage insurance is mainly influenced by: (i) the competitiveness of private mortgage insurance for GSE conforming loans compared to FHA and VA insured loans and (ii) the relative percentage of mortgage originations that are for purchased homes versus refinances. We

believe, for example, that better execution for borrowers with higher FICO scores, lender preference and the inability to cancel FHA insurance for certain loans are factors that continue to provide a competitive advantage for private mortgage insurers. See “Results of Operations—Mortgage Insurance—*NIW, IIF, RIF*.”

Private mortgage insurance penetration in the insurable market has generally been significantly higher on new mortgages for purchased homes than on the refinance of existing mortgages, because average LTVs are typically higher on home purchases and therefore these low down payment loans are more likely to require mortgage insurance. Radian Guaranty’s share of the private mortgage insurance market is influenced by competition in that market. See “Item 1. Business—Mortgage Insurance—Competition” and “Results of Operations—Mortgage Insurance—*NIW, IIF, RIF*.”

The following charts provide a historical perspective on certain key market drivers, including:

- the mortgage origination volume from home purchases and refinancings;
- private mortgage insurance penetration as a percentage of the mortgage origination market; and
- the composition of the insured mortgage market between private mortgage insurance and FHA insurance.



(1) Based on actual dollars generated in the credit enhanced market, as reported by the U.S. Department of Housing and Urban Development and industry publicly reported information. Mortgage originations are based upon the average of originations reported by the Mortgage Bankers Association, Freddie Mac and Fannie Mae in their most recent published industry reports.

(2) Excluding originations under HARP.

- *Premiums.* The premium rates we charge for our insurance are based on a number of borrower, loan and property characteristics. The mortgage insurance industry is highly competitive and private mortgage insurers compete with each other and with the FHA and VA with respect to price and other factors. We expect price competition to

continue throughout the mortgage insurance industry and future price changes from private mortgage insurers or the FHA could impact our future premium rates or our ability to compete.

Our pricing is risk-based and is intended to generally align with the capital requirements under the PMIERS, while considering pricing trends within the private mortgage insurance industry. As a result, our pricing is expected to generate relatively consistent returns across the credit spectrum and to provide relatively stable expected loss ratios regardless of further credit expansion or contraction. In developing our strategies, we monitor various competitive and economic factors while seeking to enhance the long-term value of our portfolio by balancing credit risk, profitability and volume considerations, and aim to achieve an overall risk-adjusted rate of return on capital given our modeled performance expectations. We continued to generate strong NIW in 2019, and believe we remain well positioned to compete for the NIW being originated today, while at the same time maintaining projected returns on NIW within our targeted ranges.

Our pricing actions gradually affect our results over time, as existing IIF cancels and is replaced with NIW at current pricing. See "Liquidity and Capital Resources—*Mortgage Insurance*" and "Results of Operations—*Mortgage Insurance—NIW, IIF, RIF*" for additional information.

Premiums on our mortgage insurance products are generally paid either on an installment basis or in a single payment at the time of loan origination. See "Item 1. Business—*Mortgage Insurance—Mortgage Insurance Business Overview—Premium Rates—Primary Mortgage Insurance*." Our expected premium yield on our Single Premium Policies is lower than on our Monthly Premium Policies because our premium rates are generally lower for our Single Premium Policies. However, as discussed above, the ultimate profitability of Single Premium Policies may be higher or lower than expected due to the level of prepayments. See "*—IIF; Persistency Rate; Mix of Business*" above.

Our actual portfolio returns will depend on a number of factors, including economic conditions, the mix of NIW that we are able to write, our pricing, the amount of reinsurance we use and the level of capital required under the PMIERS financial requirements.

Approximately 69% of the loans in our total primary mortgage insurance portfolio at December 31, 2019 are Monthly Premium Policies that provide a level monthly premium for the first 10 years of the policy, followed by a reduced level monthly premium thereafter. For loans that have been refinanced under HARP or HARP Replacement Programs, the initial 10-year period is reset. Due to the borrower's ability to cancel the policy generally when the LTV reaches 80% of the original value, and the automatic cancellation of the policy on the date the LTV is scheduled to reach 78% of the original value, the volume of loans that remain insured after 10 years and would be subject to the premium reset is generally not material in relation to the total loans originated. However, to the extent the volume of loans resetting from year to year varies significantly, the trend in earned premiums may also vary.

- *Losses*. Incurred losses represent the estimated future claim payments on newly defaulted insured loans as well as any change in our claim estimates for existing defaults, including changes in the estimates we use to determine our expected losses, and estimates with respect to the frequency, magnitude and timing of anticipated losses on defaulted loans. Other factors influencing incurred losses include:
 - The mix of credit characteristics in our total direct RIF (e.g., loans with higher risk characteristics, or loans with layered risk that combine multiple higher-risk attributes within the same loan, generally result in more delinquencies and claims). See "Results of Operations—*Mortgage Insurance—NIW, IIF, RIF*."
 - The average loan size (relatively higher priced properties with larger average loan amounts may result in higher incurred losses).
 - The percentage of coverage on insured loans (higher percentages of insurance coverage generally correlate with higher incurred losses) and the presence of structural mitigants such as deductibles or stop losses.
 - Changes in housing values (declines in housing values generally make it more difficult for borrowers to sell a home to avoid default or for the property to be sold to mitigate a claim, and also may negatively affect a borrower's willingness to continue to make mortgage payments when the home value is less than the mortgage balance; conversely, increases in housing values tend to reduce the level of defaults as well as make it more likely that foreclosures will result in the loan being satisfied).

- The distribution of claims over the life cycle of a portfolio (historically, claims are relatively low during the first two years after a loan is originated and then increase over a period of several years before declining; however, several factors can impact and change this cycle, including the economic environment, the quality of the underwriting of the loan, characteristics of the mortgage loan, the credit profile of the borrower, housing prices and unemployment rates).
- Our ability to mitigate potential losses through Rescissions, Claim Denials, cancellations and Claim Curtailments on claims submitted to us. These actions all reduce our incurred losses. However, if these Loss Mitigation Activities are successfully challenged at rates that are higher than expected or we agree to settle disputes related to our Loss Mitigation Activities, our incurred losses will increase. We may enter into specific agreements that govern activities such as claims decisions, claim payments, Loss Mitigation Activities and insurance coverage. As our portfolio originated prior to and including 2008 has become a smaller percentage of our overall insured portfolio, there has been a decrease in the amount of Loss Mitigation Activity with respect to the claims we receive, and we expect this trend to continue, particularly given the limitations on our Loss Mitigation Activities imposed in the 2014 Master Policy and the additional clarifications that will be effective under our new 2020 Master Policy. See Note 2 of Notes to Consolidated Financial Statements for additional information on Loss Mitigation Activities and “Item 1A. Risk Factors—*Our Loss Mitigation Activity is not expected to mitigate mortgage insurance losses to the same extent as in prior years; Loss Mitigation Activity could continue to negatively impact our customer relationships.*”
- *Other Operating Expenses.* Our other operating expenses are affected by the amount of our NIW, as well as the amount of IIF. Our other operating expenses may also be affected by the impact of performance on our incentive compensation programs, as a result of our pay-for-performance approach to compensation that is based on the level of achievement of both short-term and long-term goals.
- *Risk Distribution.* We use third-party reinsurance in our mortgage insurance business to manage capital and risk in an effort to optimize the amounts and types of capital and risk distribution deployed against insured risk. See “—*IIF; Persistency Rate; Mix of Business*” above. Currently, we distribute risk in our mortgage insurance portfolio through quota share and excess-of-loss reinsurance programs. When we enter into a quota share reinsurance agreement, the reinsurer receives a premium and, in exchange, agrees to insure an agreed upon portion of incurred losses. These arrangements reduce our earned premiums but also reduce our net RIF, which provides capital relief, including under the PMIERS financial requirements. Our incurred losses are reduced by any incurred losses ceded in accordance with the reinsurance agreement, and we often receive ceding commissions from the reinsurer as part of the transaction, which, in turn, reduce our reported operating expenses and policy acquisition costs. Our Excess-of-Loss Program accesses the capital markets (through a VIE funded by mortgage insurance-linked notes), as well as the reinsurance markets directly (through separate excess-of-loss reinsurance with a third-party reinsurer). Our Excess-of-Loss Program reduces our net RIF and our incurred losses are reduced by any incurred losses allocated in accordance with the structure of the transaction. While these reinsurance arrangements have the impact of reducing our earned premiums, they also provide capital relief, including under the PMIERS financial requirements. See Note 8 of Notes to Consolidated Financial Statements for more information about our reinsurance arrangements.
- *Investment Income.* Investment income is determined primarily by the investment balances held and the average yield on our overall investment portfolio.

Services

Our Services segment offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain. See “Item 1. Business—Services—Services Business Overview” and Note 1 of Notes to Consolidated Financial Statements for additional information regarding the Services segment and the January 2020 sale of Clayton.

In contrast to our mortgage insurance business, the Services segment is primarily a fee-for-service business without significant balance sheet risk. Key factors impacting results for our Services business include:

- *Services Revenue.* Our Services segment is dependent upon overall activity in the mortgage, real estate and mortgage finance markets, as well as the overall health of the related industries. Due, in part, to the transactional nature of the business, revenues for our Services segment are subject to fluctuations from period to period, including seasonal fluctuations that reflect the activities in these markets. Sales volume is also affected by the number of competing companies and alternative products offered in the market. We believe the diversity of

services we offer has the potential to produce fee income from the Services segment throughout various mortgage finance environments, although market conditions can significantly impact the mix and amount of fee income we generate in any particular period. In addition, see Note 2 of Notes to Consolidated Financial Statements for information on revenue recognition policies for our Services segment.

The Services segment is dependent on a limited number of large customers that represent a significant portion of its revenues. An unexpected loss of a major customer could significantly impact the level of Services revenue. Generally, our contracts do not contain volume commitments and may be terminated by clients at any time. Access to Radian Guaranty's mortgage insurance customer base provides additional opportunities to expand the Services segment's existing customers.

Revenue for the Services segment also includes inter-segment revenues from services performed for our Mortgage Insurance segment. See Note 4 of Notes to Consolidated Financial Statements for additional information.

Our Services revenue is primarily generated under fixed-price contracts. Under fixed-price contracts, we agree to perform the specified services and deliverables for a pre-determined per-unit or per-file price or day rate. To the extent our actual direct and allocated indirect costs decrease or increase from the estimates upon which the price was negotiated, we will generate more or less profit, respectively, or could incur a loss. See "Item 1. Business—Services—Services Business Overview" for more information on our Services revenue.

- *Cost of Services.* Our cost of services is primarily affected by our level of services revenue. Our cost of services primarily consists of employee compensation and related payroll benefits and to a lesser extent, other costs of providing services such as travel and related expenses incurred in providing client services, costs paid to outside vendors, data acquisition costs and other compensation-related expenses to maintain software application platforms that directly support our businesses. The level of these costs may fluctuate if market rates of compensation change, or if there is decreased availability or a loss of qualified employees.
- *Premiums.* We earn net premiums on title insurance, effective with our acquisition of Radian Title Insurance in the first quarter of 2018. By adding the capabilities of this subsidiary to the title and settlement services that we already were offering through our existing title agency, Radian Settlement Services, we expanded the geographic reach of our title services and are positioned to provide title insurance and settlement services to our customers across the country.
- *Operating Expenses.* Our operating expenses primarily consist of salaries and benefits not classified as cost of services because they are related to employees, such as sales and corporate employees, who are not directly involved in providing client services. Operating expenses also include other selling, general and administrative expenses, depreciation, and allocations of corporate general and administrative expenses.

Other Factors Affecting Consolidated Results

The following items also may impact our consolidated results in the ordinary course. The items listed are not representative of all potential items impacting our consolidated results. See "Item 1A. Risk Factors" for additional information on the risks affecting our business.

- *Net Gains (Losses) on Investments and Other Financial Instruments.* The recognition of realized investment gains or losses can vary significantly across periods as the activity is highly discretionary based on the timing of individual securities sales due to such factors as market opportunities, our tax and capital profile and overall market cycles. Unrealized gains and losses arise primarily from changes in the market value of our investments that are classified as trading or, effective with our implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, equity securities. These valuation adjustments may not necessarily result in realized economic gains or losses.
- *Loss on Extinguishment of Debt.* Gains or losses on early extinguishment of debt and losses incurred to purchase our debt prior to maturity are discretionary activities that are undertaken in order to take advantage of market opportunities to strengthen our financial and capital positions.
- *Impairment of Goodwill or Other Acquired Intangible Assets.* The periodic review of goodwill and other acquired intangible assets for potential impairment may impact consolidated results. Our goodwill and other acquired intangible assets is based on management's assumptions, which are inherently subject to risks and uncertainties. See Note 7 of Notes to Consolidated Financial Statements for additional information.

Results of Operations—Consolidated

Radian Group serves as the holding company for our operating subsidiaries and does not have any operations of its own. Our consolidated operating results for 2019 primarily reflect the financial results and performance of our two business segments—Mortgage Insurance and Services. See Note 4 of Notes to Consolidated Financial Statements for information regarding the basis of our segment reporting, including the related allocations. See “Results of Operations—Mortgage Insurance,” and “Results of Operations—Services” for the operating results of these business segments.

In addition to the results of our operating segments, pretax income (loss) is also affected by other factors. See “Key Factors Affecting Our Results—*Other Factors Affecting Consolidated Results.*” See “—*Use of Non-GAAP Financial Measures*” below for more information regarding items that are excluded from the operating results of our operating segments.

The following table highlights selected information related to our consolidated results of operations for the years ended December 31, 2019, 2018 and 2017:

(\$ in millions, except per-share amounts)	Year Ended December 31,			\$ Change	
	2019	2018	2017	Favorable (Unfavorable)	
				2019 vs. 2018	2018 vs. 2017
Pretax income	\$ 849.0	\$ 684.2	\$ 346.7	\$ 164.8	\$ 337.5
Net income	672.3	606.0	121.1	66.3	484.9
Diluted net income per share	\$ 3.20	\$ 2.77	\$ 0.55	\$ 0.43	\$ 2.22
Book value per share at December 31	\$ 20.13	\$ 16.34	\$ 13.90	\$ 3.79	\$ 2.44
Net premiums earned—insurance (1)	\$ 1,145.3	\$ 1,014.0	\$ 932.8	\$ 131.3	\$ 81.2
Services revenue (2)	154.6	145.0	155.1	9.6	(10.1)
Net investment income (1).	171.8	152.5	127.2	19.3	25.3
Net gains (losses) on investments and other financial instruments.	51.7	(42.5)	3.6	94.2	(46.1)
Provision for losses (1)	132.0	104.6	135.2	(27.4)	30.6
Cost of services (2)	108.3	98.1	104.6	(10.2)	6.5
Other operating expenses	306.1	280.8	267.3	(25.3)	(13.5)
Restructuring and other exit costs	—	6.1	17.3	6.1	11.2
Interest expense	56.3	61.5	62.8	5.2	1.3
Loss on extinguishment of debt	22.7	—	51.5	(22.7)	51.5
Impairment of goodwill	4.8	—	184.4	(4.8)	184.4
Amortization and impairment of other acquired intangible assets	22.3	12.4	27.7	(9.9)	15.3
Income tax provision	176.7	78.2	225.6	(98.5)	147.4
Adjusted pretax operating income (3)	854.6	745.5	617.2	109.1	128.3
Adjusted diluted net operating income per share (3)	3.21	2.69	1.82	0.52	0.87
Return on equity	17.8%	18.7%	4.1%	(0.9)%	14.6%
Adjusted net operating return on equity (3).	17.9%	18.2%	13.7%	(0.3)%	4.5%

- (1) Relates primarily to the Mortgage Insurance segment. See “Results of Operations—Mortgage Insurance” for more information.
- (2) Relates to our Services segment. See “Results of Operations—Services” for more information.
- (3) See “—*Use of Non-GAAP Financial Measures*” below.

Net Income. As discussed in more detail below, our net income increased for 2019 compared to 2018 primarily reflecting: (i) an increase in net premiums earned; (ii) an increase in net gains on investments and other financial instruments; and (iii) an increase in net investment income. Partially offsetting these items are increases in: (i) provision for losses; (ii) other operating

expenses; and (iii) loss on extinguishment of debt. In addition, the overall increase in net income was partially offset by an increase in the income tax provision, due primarily to a \$73.6 million tax benefit in 2018 related to the impact of the settlement of the IRS Matter. See “—Income Tax Provision” below.

Diluted Net Income Per Share. The increase in diluted net income per share for 2019 compared to 2018 is primarily due to the change in net income, as discussed above, and by the decrease in average diluted shares from 218.6 million shares in 2018 to 210.3 million shares for 2019.

Adjusted Diluted Net Operating Income Per Share. The increase in adjusted diluted net operating income per share for 2019 compared to 2018 is primarily due to the increase in our Mortgage Insurance segment's adjusted pretax operating income, which increased to \$868.9 million in 2019, from \$772.6 million in 2018.

Book Value Per Share. The increase in book value per share from \$16.34 at December 31, 2018, to \$20.13 at December 31, 2019, is primarily due to: (i) our net income for the year ended December 31, 2019 and (ii) an increase of \$0.80 per share due to net unrealized gains in our available for sale securities, recorded in accumulated other comprehensive income. These increases were partially offset by a decrease of \$0.25 per share from the net impact of our share repurchases for the year ended December 31, 2019, inclusive of the cost of these repurchases.

Return on Equity. The changes in return on equity across all periods presented are primarily due to the changes in net income and, to a lesser extent, increases in stockholders' equity. See “—Net Income” above for more information on the changes in net income.

Adjusted Net Operating Return on Equity. The changes in adjusted net operating return on equity across all periods presented are primarily due to the increases in our adjusted pretax operating income, partially offset by increases in stockholders' equity. The increases in our adjusted pretax operating income primarily reflect the increases in our Mortgage Insurance segment's adjusted pretax operating income. See “Results of Operations—Mortgage Insurance—Adjusted Pretax Operating Income” for more information on our Mortgage Insurance segment's results.

Net Gains (Losses) on Investments and Other Financial Instruments. The net gains on investments and other financial instruments for 2019, as compared to net losses in 2018, are primarily due to: (i) the increase in unrealized gains in our trading portfolio related to changes in fair value resulting from lower interest rates and (ii) net realized gains on our fixed-maturities available for sale. See Note 6 of Notes to Consolidated Financial Statements for additional information on net gains (losses) on investments.

Other Operating Expenses. Other operating expenses for 2019 increased as compared to 2018, primarily due to: (i) higher compensation expense in 2019, including variable and incentive-based compensation and (ii) ongoing investments in our technology systems. Additionally, operating expenses increased due to: (i) the inclusion of operating expenses of businesses acquired in 2018 and (ii) an increase in non-operating items, primarily related to impairment of other long-lived assets. Partially offsetting these items is an increase in ceding commissions, related to higher earned premiums on policies covered under our Single Premium QSR Program.

Restructuring and Other Exit Costs. In 2019, we did not recognize any restructuring or other exit costs. For 2018, we recognized \$3.6 million of other exit costs associated with impairment of internal-use software. Restructuring and other exit costs for 2018 also include the remaining charges associated with our 2017 plan to restructure the Services business.

Interest Expense. Interest expense for 2019 decreased compared to 2018. This decrease was primarily due to reductions in interest expense from our: (i) repayment at maturity of \$158.6 million aggregate principal amount of our Senior Notes due 2019 and (ii) tender offers and the subsequent redemptions that together resulted in the repayment of the remaining aggregate principal amounts of \$234.1 million and \$197.7 million of our Senior Notes due 2020 and 2021, respectively. Partially offsetting these decreases was higher interest expense from the issuance of \$450 million aggregate principal amount of Senior Notes due 2027.

Loss on Extinguishment of Debt. During 2019, the redemption of our remaining Senior Notes due 2020 and 2021 resulted in a loss on extinguishment of debt of \$22.7 million. See Note 12 of Notes to Consolidated Financial Statements for additional information. During 2018, we had no loss on extinguishment of debt.

Amortization and Impairment of Other Acquired Intangible Assets and Impairment of Goodwill. During the fourth quarter of 2019, in connection with the reclassification of Clayton to held for sale, we recorded a goodwill impairment of \$4.8 million, as well as an impairment charge for other acquired intangible assets of \$13.7 million. See Note 7 of Notes to Consolidated Financial Statements for additional information.

The amortization of intangible assets primarily reflects the amortization of intangible assets acquired as part of the Clayton acquisition in 2014.

Income Tax Provision. Our 2019 effective tax rate was 20.8%, which approximates the 21% federal statutory tax rate. Our 2018 effective tax rate of 11.4% was lower than the federal statutory tax rate primarily as a result of the tax benefit recorded related to the settlement of our IRS Matter.

Use of Non-GAAP Financial Measures. In addition to the traditional GAAP financial measures, we have presented “adjusted pretax operating income,” “adjusted diluted net operating income per share” and “adjusted net operating return on equity,” which are non-GAAP financial measures for the consolidated company, among our key performance indicators to evaluate our fundamental financial performance. These non-GAAP financial measures align with the way our business performance is evaluated by both management and by our board of directors. These measures have been established in order to increase transparency for the purposes of evaluating our operating trends and enabling more meaningful comparisons with our peers. Although on a consolidated basis “adjusted pretax operating income,” “adjusted diluted net operating income per share” and “adjusted net operating return on equity” are non-GAAP financial measures, for the reasons discussed above we believe these measures aid in understanding the underlying performance of our operations. Our senior management, including our Chief Executive Officer (Radian’s chief operating decision maker), uses adjusted pretax operating income (loss) as our primary measure to evaluate the fundamental financial performance of the Company’s business segments and to allocate resources to the segments.

Adjusted pretax operating income is defined as GAAP consolidated pretax income (loss), excluding the effects of: (i) net gains (losses) on investments and other financial instruments; (ii) loss on extinguishment of debt; (iii) amortization and impairment of goodwill and other acquired intangible assets; and (iv) impairment of other long-lived assets and other non-operating items, such as losses from the sale of lines of business and acquisition-related expenses. Adjusted diluted net operating income per share is calculated by dividing (i) adjusted pretax operating income attributable to common stockholders, net of taxes computed using the Company’s statutory tax rate, by (ii) the sum of the weighted average number of common shares outstanding and all dilutive potential common shares outstanding. Adjusted net operating return on equity is calculated by dividing annualized adjusted pretax operating income, net of taxes computed using the Company’s statutory tax rate, by average stockholders’ equity, based on the average of the beginning and ending balances for each period presented.

Although adjusted pretax operating income excludes certain items that have occurred in the past and are expected to occur in the future, the excluded items represent those that are: (i) not viewed as part of the operating performance of our primary activities or (ii) not expected to result in an economic impact equal to the amount reflected in pretax income. These adjustments, along with the reasons for their treatment, are described below.

- (1) *Net gains (losses) on investments and other financial instruments.* The recognition of realized investment gains or losses can vary significantly across periods as the activity is highly discretionary based on the timing of individual securities sales due to such factors as market opportunities, our tax and capital profile and overall market cycles. Unrealized gains and losses arise primarily from changes in the market value of our investments that are classified as trading or equity securities. These valuation adjustments may not necessarily result in realized economic gains or losses.

Trends in the profitability of our fundamental operating activities can be more clearly identified without the fluctuations of these realized and unrealized gains or losses and changes in fair value of other financial instruments. We do not view them to be indicative of our fundamental operating activities.

- (2) *Loss on extinguishment of debt.* Gains or losses on early extinguishment of debt and losses incurred to purchase our debt prior to maturity are discretionary activities that are undertaken in order to take advantage of market opportunities to strengthen our financial and capital positions; therefore, we do not view these activities as part of our operating performance. Such transactions do not reflect expected future operations and do not provide meaningful insight regarding our current or past operating trends.
- (3) *Amortization and impairment of goodwill and other acquired intangible assets.* Amortization of acquired intangible assets represents the periodic expense required to amortize the cost of acquired intangible assets over their estimated useful lives. Acquired intangible assets are also periodically reviewed for potential impairment, and impairment adjustments are made whenever appropriate. We do not view these charges as part of the operating performance of our primary activities.

- (4) *Impairment of other long-lived assets and other non-operating items.* Includes activities that we do not view to be indicative of our fundamental operating activities, such as: (i) gains (losses) from the sale of lines of business and (ii) acquisition-related expenses.

Total adjusted pretax operating income, adjusted diluted net operating income per share, and adjusted net operating return on equity are not measures of overall profitability, and therefore should not be considered in isolation or viewed as substitutes for GAAP pretax income, diluted net income per share, or return on equity. Our definitions of adjusted pretax operating income, adjusted diluted net operating income per share, and adjusted net operating return on equity may not be comparable to similarly-named measures reported by other companies.

The following tables provide reconciliations of the most comparable GAAP measures of consolidated pretax income, diluted net income per share and return on equity, to our non-GAAP financial measures for the consolidated Company of adjusted pretax operating income, adjusted diluted net income per share and adjusted net operating return on equity, respectively:

Reconciliation of Consolidated Pretax Income to Adjusted Pretax Operating Income			
(In thousands)	Year Ended December 31,		
	2019	2018	2017
Consolidated pretax income	\$ 848,993	\$ 684,186	\$ 346,737
Less income (expense) items:			
Net gains (losses) on investments and other financial instruments	51,719	(42,476)	3,621
Loss on extinguishment of debt	(22,738)	—	(51,469)
Impairment of goodwill	(4,828)	—	(184,374)
Amortization and impairment of other acquired intangible assets	(22,288)	(12,429)	(27,671)
Impairment of other long-lived assets and other non-operating items (1)	(7,507)	(6,404)	(10,545)
Total adjusted pretax operating income (2)	<u>\$ 854,635</u>	<u>\$ 745,495</u>	<u>\$ 617,175</u>

- (1) The amount for the year ended December 31, 2019 primarily relates to impairments of other long-lived assets and is included in other operating expenses on the consolidated statement of operations. The amounts for the years ended December 31, 2018 and December 31, 2017 are included within restructuring and other exit costs on the consolidated statements of operations, except for \$1.6 million in 2018 related to the impairment of other long-lived assets, included in other operating expenses.
- (2) Total adjusted pretax operating income on a consolidated basis consists of adjusted pretax operating income (loss) for our Mortgage Insurance segment and our Services segment, as further detailed in Note 4 of Notes to Consolidated Financial Statements.

Reconciliation of Diluted Net Income Per Share to Adjusted Diluted Net Operating Income Per Share

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Diluted net income per share	\$ 3.20	\$ 2.77	\$ 0.55
Less per-share impact of reconciling income (expense) items:			
Net gains (losses) on investments and other financial instruments	0.25	(0.19)	0.02
Loss on extinguishment of debt	(0.11)	—	(0.23)
Impairment of goodwill	(0.02)	—	(0.84)
Amortization and impairment of other acquired intangible assets	(0.11)	(0.06)	(0.13)
Impairment of other long-lived assets and other non-operating items	(0.04)	(0.03)	(0.05)
Income tax (provision) benefit on other income (expense) items (1)	0.01	0.06	0.43
Difference between statutory and effective tax rate (2)	0.01	0.30	(0.47)
Per-share impact of other income (expense) items	(0.01)	0.08	(1.27)
Adjusted diluted net operating income per share (1)	<u>\$ 3.21</u>	<u>\$ 2.69</u>	<u>\$ 1.82</u>

- (1) Calculated using the Company's federal statutory tax rates of 21% for 2019 and 2018 and 35% for 2017. Any permanent tax adjustments and state income taxes on these items have been deemed immaterial and are not included.
- (2) For 2018, includes \$0.34 of tax benefit related to the settlement of the IRS Matter, which includes both the impact of the settlement with the IRS as well as the reversal of certain related previously accrued state and local tax liabilities. All of the 2017 amount represents additional tax expense related to the remeasurement of our net deferred tax assets as a result of the TCJA enacted in December 2017.

Reconciliation of Return on Equity to Adjusted Net Operating Return on Equity (1)

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Return on equity (1)	17.8%	18.7%	4.1%
Less impact of reconciling income (expense) items: (2)			
Net gains (losses) on investments and other financial instruments	1.4	(1.3)	0.1
Loss on extinguishment of debt	(0.6)	—	(1.8)
Impairment of goodwill	(0.1)	—	(6.3)
Amortization and impairment of other acquired intangible assets	(0.6)	(0.4)	(0.9)
Impairment of other long-lived assets and other non-operating items	(0.2)	(0.2)	(0.4)
Income tax (provision) benefit on reconciling income (expense) items (3)	—	0.4	3.2
Difference between statutory and effective tax rate (3) (4)	—	2.0	(3.5)
Impact of reconciling income (expense) items	(0.1)	0.5	(9.6)
Adjusted net operating return on equity	<u>17.9%</u>	<u>18.2%</u>	<u>13.7%</u>

- (1) Calculated by dividing net income by average stockholders' equity.
- (2) As a percentage of average stockholders' equity.
- (3) Calculated using the Company's federal statutory tax rates of 21% for 2019 and 2018 and 35% for 2017. Any permanent tax adjustments and state income taxes on these items have been deemed immaterial and are not included.
- (4) The difference in 2018 includes the tax benefit related to the settlement of the IRS Matter, which includes both the impact of the settlement with the IRS as well as the reversal of certain related previously accrued state and local tax liabilities. All of the 2017 amount represents additional tax expense related to the remeasurement of our net deferred tax assets as a result of the TCJA enacted in December 2017.

Results of Operations—Mortgage Insurance

During 2019, we continued our strategy of growing our mortgage insurance portfolio, executing our risk distribution strategy and effectively managing our capital and liquidity positions.

The following table summarizes our Mortgage Insurance segment's results of operations for the years ended December 31, 2019, 2018 and 2017:

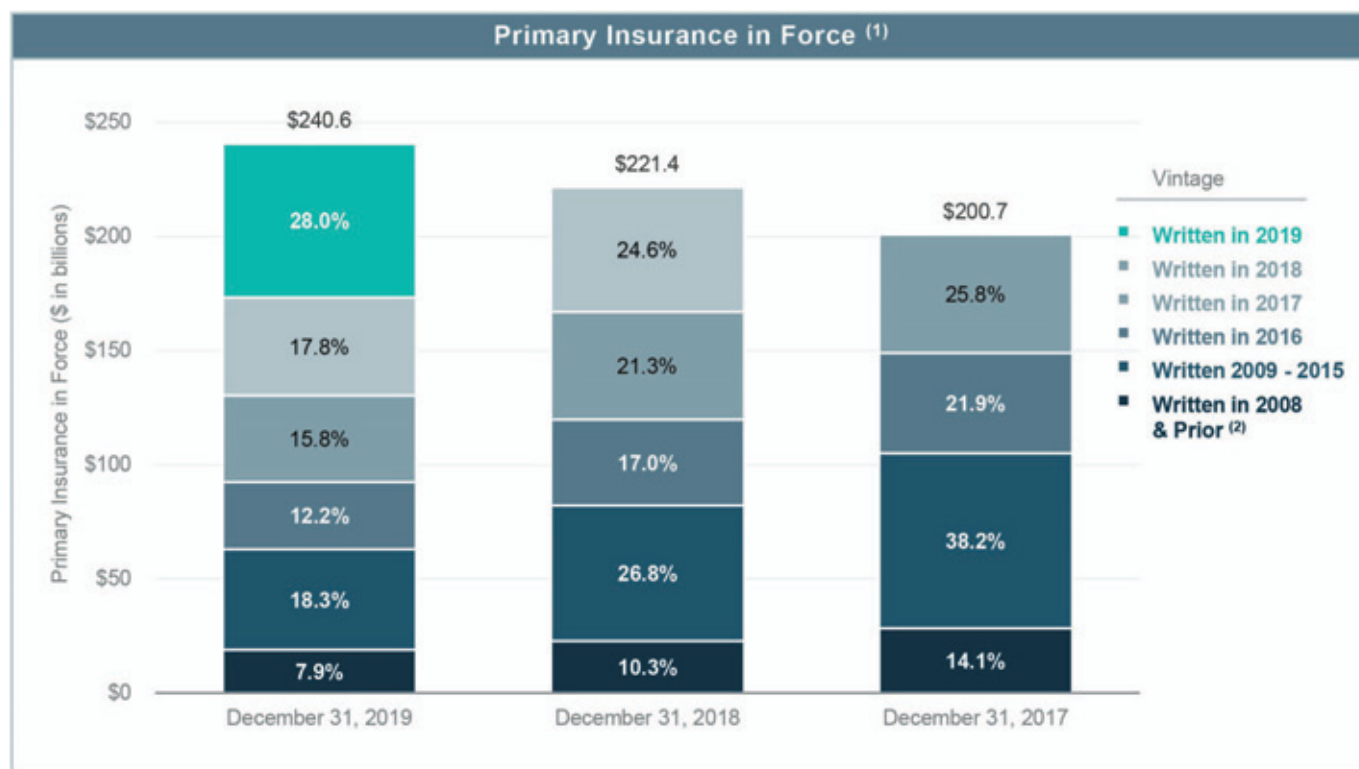
(In millions)	Year Ended December 31,			\$ Change	
	2019	2018	2017	Favorable (Unfavorable)	
				2019 vs. 2018	2018 vs. 2017
Adjusted pretax operating income (1) (2)	\$ 868.9	\$ 772.6	\$ 651.0	\$ 96.3	\$ 121.6
Net premiums written—insurance	1,075.5	991.0	818.4	84.5	172.6
(Increase) decrease in unearned premiums	58.8	15.7	114.4	43.1	(98.7)
Net premiums earned—insurance	1,134.2	1,006.7	932.8	127.5	73.9
Net investment income.	171.1	152.1	127.2	19.0	24.9
Provision for losses	131.5	104.5	136.2	(27.0)	31.7
Policy acquisition costs	25.3	25.3	24.3	—	(1.0)
Other operating expenses (2)	226.8	215.5	206.4	(11.3)	(9.1)
Interest expense	56.3	43.7	45.0	(12.6)	1.3

- (1) Our senior management uses adjusted pretax operating income as our primary measure to evaluate the fundamental financial performance of our business segments. See Note 4 of Notes to Consolidated Financial Statements for more information.
- (2) Includes allocation of corporate operating expenses of \$104.1 million, \$80.1 million and \$55.4 million for 2019, 2018 and 2017, respectively.

Adjusted Pretax Operating Income. The increase in our Mortgage Insurance segment's adjusted pretax operating income for 2019, compared to 2018, primarily reflects: (i) an increase in net premiums earned and (ii) an increase in net investment income. See “—*NIW, IIF, RIF*—*Net Premiums Written and Earned*” for more information about our net premiums earned. Partially offsetting these items are increases in: (i) provision for losses; (ii) other operating expenses; and (iii) interest expense as a result of the Clayton Intercompany Note repayment. See “Results of Operations—Services—*Interest Expense*” for additional information.

NIW, IIF, RIF

A key component of our current business strategy is to write profitable NIW while effectively maintaining the portfolio's health, balance and profitability. Consistent with this objective, we wrote \$71.3 billion of primary new mortgage insurance in 2019, compared to \$56.5 billion of NIW in 2018. The NIW written on a Flow Basis in 2019 was Radian's highest volume in its history. Our 2019 NIW, partially offset by cancellations and amortization within our existing portfolio, resulted in an increase in IIF to \$240.6 billion at December 31, 2019, from \$221.4 billion at December 31, 2018, as shown in the chart below.



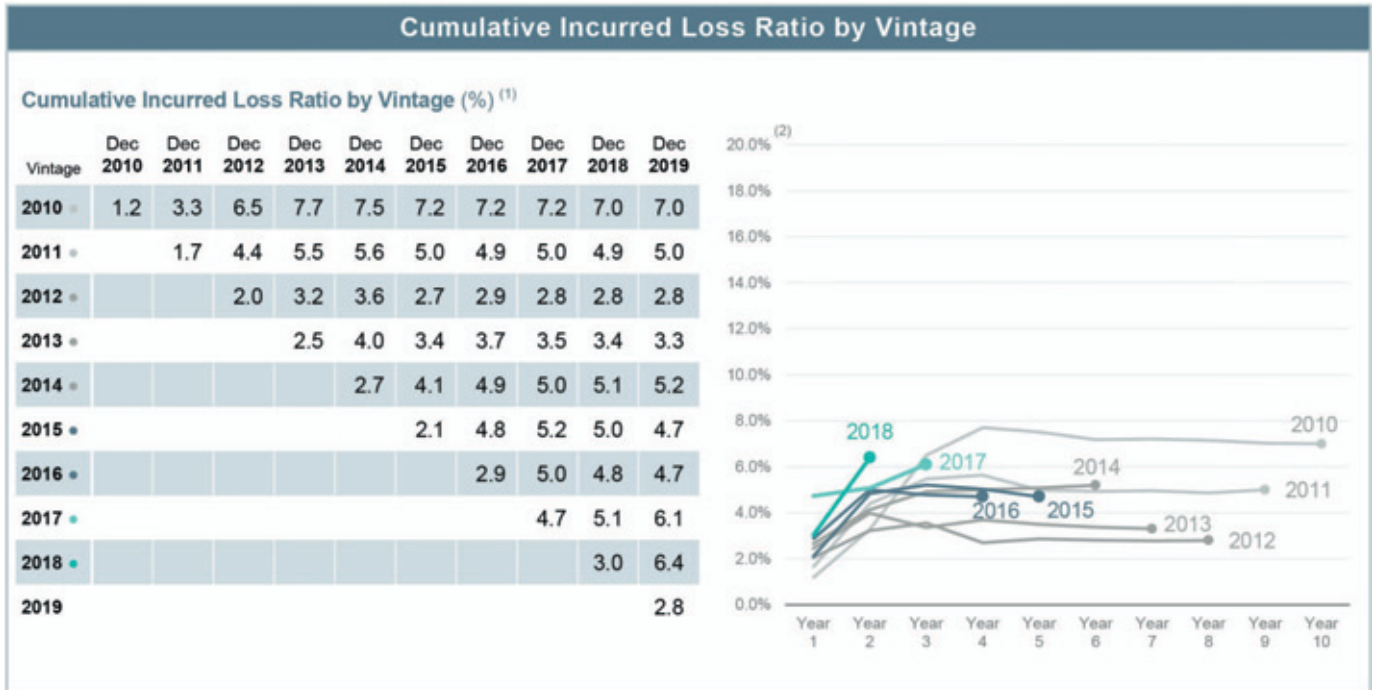
- (1) Policy years represent the original policy years, and have not been adjusted to reflect subsequent refinancing activity under HARP.
- (2) Adjusted to reflect subsequent refinancing activity under HARP, this percentage would decrease to 4.7%, 6.0%, and 8.4% as of December 31, 2019, December 31, 2018 and December 31, 2017, respectively.

Our IIF is the primary driver of the future premiums that we expect to earn over time. Although not reflected in the current period financial statements, nor in our reported book value, we expect our IIF to generate substantial earnings in future periods, due to the high credit quality of our current mortgage insurance portfolio and its expected persistency over multiple years. See “Key Factors Affecting Our Results—*Mortgage Insurance—IIF; Persistency Rate; Mix of Business*” for more information.

We target a blended return on required capital on new business on an unlevered basis (i.e., after-tax underwriting returns plus projected investment income) within the mid-teens range. This projected targeted return incorporates the impact of the PMIERS 2.0 financial requirements and the risk distribution programs we have in place to cover NIW at the time it is originated, such as our Single Premium QSR Program, but does not include the impact of leverage or risk distribution transactions that are executed after the NIW has been originated, such as our Excess-of-Loss Program. Actions we take with respect to pricing and risk on NIW we are writing today are expected to gradually affect our results over time, due to the natural turnover of the mortgage insurance portfolio as existing IIF cancels.

Our NIW increased by 26.1% in 2019 as compared to 2018, aided by a strong mortgage origination market and increased private mortgage insurance penetration rates. See “Overview—*Operating Environment*” for additional information about the mortgage origination market. Our NIW for 2019 also reflects the successful implementation of our spectrum of innovative pricing structures, including RADAR Rates, our “black box” pricing strategy. Currently, a majority of the NIW we are writing is being priced through RADAR Rates.

Historical loan performance data indicates that credit scores and underwriting quality are key drivers of credit performance. As of December 31, 2019, our portfolio of business written subsequent to 2008, including refinancings under HARP, represented approximately 95% of our total primary RIF. Loan originations after 2008 have consisted primarily of high credit quality loans with significantly better credit performance than loans originated during 2008 and prior periods. The volume of insurance that we have written on high credit quality loans after 2008 has significantly improved our mortgage insurance portfolio mix. Our actual and expected future losses on our portfolio written after 2008, together with refinancings under HARP, are significantly lower than those experienced on our NIW prior to and including 2008. The following charts illustrate the trends of our cumulative incurred loss ratios by year of origination and development year.



- (1) Represents inception-to-date losses incurred as a percentage of net premiums earned.
- (2) Radian’s stochastic modeling, used for pricing, indicates an approximate 20% through-the-cycle loss ratio on newly originated mortgage insurance business.

The following tables provide selected information as of and for the periods indicated related to mortgage insurance NIW, RIF and IIF. Policy years represent the original policy years and have not been adjusted to reflect subsequent refinancing activity under HARP. Throughout this report, unless otherwise noted, RIF is presented on a gross basis and includes the amount ceded under reinsurance. NIW, RIF and IIF for direct Single Premiums include policies written on an individual basis (as each loan is originated) and on an aggregated basis (in which each individual loan in a group of loans is insured in a single transaction, typically after the loans have been originated).

Primary NIW (\$ in millions)	Year Ended December 31,		
	2019	2018	2017
Total primary NIW	\$ 71,327	\$ 56,547	\$ 53,905
Total primary risk written	\$ 17,163	\$ 14,264	\$ 13,569
Average coverage percentage	24.1%	25.2%	25.2%
Primary NIW by Loan Purpose:			
Purchases	81.1%	93.8%	88.8%
Refinances	18.9%	6.2%	11.2%
Primary NIW by Premium Type:			
Direct Monthly and Other Recurring Premiums	83.5%	78.8%	76.5%
Direct single premiums:			
Borrower-paid	14.2	11.9	2.5
Lender-paid (1)	2.3	9.3	21.0
Total	100.0%	100.0%	100.0%
Total borrower-paid	96.7%	89.6%	77.9%
Primary NIW by FICO Score (2) :			
>=740	63.3%	55.6%	56.3%
680-739	31.9%	35.6%	36.2%
620-679	4.8%	8.8%	7.5%
Primary NIW by LTV:			
95.01% and above	16.7%	16.7%	13.2%
90.01% to 95.00%	37.7%	44.4%	46.0%
85.01% to 90.00%	28.0%	27.6%	28.5%
85.00% and below	17.6%	11.3%	12.3%

- (1) Lender-paid Single Premium Policies have higher Minimum Required Assets under the PMIERS as compared to borrower-paid Single Premium Policies. See "Item 1. Business—Regulation—GSE Requirements—PMIERS—Private Mortgage Insurer Eligibility Requirements" for additional information.
- (2) For loans with multiple borrowers, the percentage of primary NIW by FICO score represents the lowest of the borrowers' FICO scores. Data for 2018 and 2017 had previously been presented based on the FICO score of the primary borrower and have been restated to reflect the lowest of the borrowers' FICO scores.

Primary IIF and RIF (\$ in millions)	Year Ended December 31,		
	2019	2018	2017
Total primary IIF	\$ 240,558	\$ 221,443	\$ 200,724
Total primary RIF	\$ 60,921	\$ 56,728	\$ 51,288
Average coverage percentage	25.3%	25.6%	25.6%
Total primary RIF on defaulted loans	\$ 1,061	\$ 1,032	\$ 1,389
Percentage of RIF in default	1.7%	1.8%	2.7%
Persistency Rate (12 months ended)	78.2%	83.1%	81.1%
Persistency Rate (quarterly, annualized) (1)	75.0%	85.5%	79.4%
Net premium yield (in basis points) (2)	49.1	47.7	48.6
Primary RIF by Premium Type:			
Direct Monthly and Other Recurring Premiums ..	72.4%	70.3%	69.1%
Direct single premiums:			
Borrower-paid	9.1	7.3	5.9
Lender-paid (3)	18.5	22.4	25.0
Total	100.0%	100.0%	100.0%
Total borrower-paid	78.9%	74.5%	71.3%
Primary RIF by FICO Score (4) :			
>=740	56.9%	55.1%	54.8%
680-739	34.2%	34.8%	34.4%
620-679	8.2%	9.3%	9.7%
<=619	0.7%	0.8%	1.1%
Primary RIF by LTV:			
95.01% and above	14.2%	11.6%	9.2%
90.01% to 95.00%	51.3%	53.1%	53.2%
85.01% to 90.00%	27.9%	29.0%	30.6%
85.00% and below	6.6%	6.3%	7.0%
Primary RIF by Policy Year:			
2008 and prior	7.8%	10.1%	14.0%
2009 - 2013	7.5%	11.4%	16.8%
2014	4.3%	6.1%	8.5%
2015	7.4%	10.2%	13.8%
2016	12.5%	16.8%	21.4%
2017	16.0%	21.1%	25.5%
2018	17.9%	24.3%	—%
2019	26.6%	—%	—%

(1) The Persistency Rate on a quarterly, annualized basis is calculated based on loan-level detail for the quarter ending as of the date shown. It may be impacted by seasonality or other factors, including the level of refinance activity during the applicable periods, and may not be indicative of full-year trends.

(2) Calculated by dividing net premiums earned by average primary IIF. For 2019, includes a 1.4 basis point increase resulting from the impact of the cumulative adjustments in 2019 related to an update to the amortization rates used to

recognize revenue for Single Premium Policies. See Note 2 of Notes to Consolidated Financial Statements for additional information.

- (3) Lender-paid Single Premium Policies have higher Minimum Required Assets under the PMIERS as compared to borrower-paid Single Premium Policies.
- (4) For loans with multiple borrowers, the percentage of primary RIF by FICO score represents the lowest of the borrowers' FICO scores. Data for 2018 and 2017 had previously been presented based on the FICO score of the primary borrower and have been restated to reflect the lowest of the borrowers' FICO scores.

Net Premiums Written and Earned. Net premiums written and earned for 2019 increased compared to 2018, reflecting an increase in our IIF primarily related to an increase in our Monthly Premium Policies. Net premiums earned for 2019 also includes a \$32.9 million cumulative adjustment related to an update to the amortization rates used to recognize revenue for Single Premium Policies. See Note 2 of Notes to Consolidated Financial Statements for further information.

The table below provides additional information about the components of mortgage insurance net premiums earned for the periods indicated, including the effects of our reinsurance programs.

<u>(in thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Net premiums earned—insurance:			
Direct			
Premiums earned, excluding revenue from cancellations	\$ 1,154,045	\$ 1,018,874	\$ 929,668
Single Premium Policy cancellations	79,483	47,990	60,348
Direct	1,233,528	1,066,864	990,016
Assumed	10,382 (1)	6,904 (1)	28
Ceded			
Premiums earned, excluding revenue from cancellations	(134,946)	(85,357)	(63,406)
Single Premium Policy cancellations (2)	(23,766)	(13,726)	(11,734)
Profit commission—other (3)	49,016	32,036	17,869
Ceded premiums, net of profit commission	(109,696)	(67,047)	(57,271)
Total net premiums earned—insurance	\$ 1,134,214	\$ 1,006,721	\$ 932,773

(1) Includes premiums earned from our participation in certain credit risk transfer programs.

(2) Includes the impact of related profit commissions.

(3) The amounts represent the profit commission on the Single Premium QSR Program, excluding the impact of Single Premium Policy cancellations.

The impact of the level of mortgage prepayments based on the mix of business we write affects the revenue ultimately produced by our mortgage insurance business. We believe that writing a mix of Single Premium Policies and Monthly Premium Policies has the potential to moderate the overall impact on our results if actual prepayments are significantly different from expectations. However, the impact of this moderating effect is affected by the amount of reinsurance we obtain on portions of our portfolio, with the Single Premium QSR Program currently reducing the proportion of retained Single Premium Policies in our portfolio. See “Overview—*Operating Environment*” as well as “Key Factors Affecting Our Results—*Mortgage Insurance—IIF; Persistency Rate; Mix of Business*” above for more information.

We experienced a decrease in our total mix of Single Premium Policies to 16.5% of our NIW for 2019, compared to 21.2% for 2018. Borrower-paid Single Premium Policies were 86.1% of our total direct Single Premium NIW for 2019 compared to 56.1% for 2018. We expect our production level for Single Premium Policies to fluctuate over time based on various factors, which include risk/return considerations and market conditions.

Net Premiums Written and Earned—Ceded. We use third-party reinsurance in our mortgage insurance business as part of our risk distribution strategy, including to manage our capital position and risk profile. When we enter into a reinsurance agreement, the reinsurer receives a premium and, in exchange, agrees to insure an agreed upon portion of incurred losses. While these arrangements have the impact of reducing our earned premiums, they reduce our required capital and are expected to

increase our return on required capital for the related policies. The impact of these programs on our financial results will vary depending on the level of ceded RIF, as well as the levels of prepayments and incurred losses on the reinsured portfolios, among other factors. See “Key Factors Affecting Our Results—*Mortgage Insurance—Risk Distribution*” and Note 8 of Notes to Consolidated Financial Statements for more information about our reinsurance transactions.

The following table provides information related to the premium impact of our reinsurance transactions. See Note 8 of Notes to Consolidated Financial Statements for more information about our reinsurance programs.

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Ceded premiums earned:			
QSR Program	\$ 13,979	\$ 19,660	\$ 28,503
Single Premium QSR Program	69,632	44,286	27,284
Excess-of-Loss Program	25,483	2,305	—
Total ceded premiums earned (1)	<u>\$ 109,094</u>	<u>\$ 66,251</u>	<u>\$ 55,787</u>
Percentage of total direct and assumed premiums earned	8.8%	6.1%	5.7%

(1) Does not include ceded premiums earned related to our captive reinsurance arrangements or the benefit from ceding commissions on our Single Premium QSR Programs, which are included in other operating expenses on the consolidated statement of operations. See Note 8 of Notes to Consolidated Financial Statements for additional information.

The table below provides information about the PMIERS impact of our reinsurance programs on our Minimum Required Assets as of the dates indicated.

<u>(In thousands)</u>	As of December 31,		
	2019	2018	2017
PMIERS impact - reduction in Minimum Required Assets: (1)			
QSR Program	\$ 35,382	\$ 48,734	\$ 65,757
Single Premium QSR Program	511,695	522,318	446,509
Excess-of-Loss Program	738,386	455,440	—
Total PMIERS impact	<u>\$ 1,285,463</u>	<u>\$ 1,026,492</u>	<u>\$ 512,266</u>
Percentage of gross Minimum Required Assets	27.4%	22.8%	11.8%

(1) Excludes the impact of intercompany reinsurance and captive reinsurance arrangements.

Net Investment Income. Higher average investment balances, combined with higher investment yields, resulted in increases in investment income for 2019, compared to 2018. Our higher investment balances were primarily a result of investing our positive cash flow from operations. All periods include full allocation to the Mortgage Insurance segment of net investment income from investments held at Radian Group.

Provision for Losses. The following table details the financial impact of the significant components of our provision for losses for the periods indicated:

(In millions)	Year Ended December 31,		
	2019	2018	2017
Current year defaults (1)	\$ 146.7	\$ 135.3	\$ 185.5
Prior year defaults (2)	(14.7)	(31.7)	(49.3)
Second-lien mortgage loan PDR and other	(0.5)	0.9	—
Provision for losses	\$ 131.5	\$ 104.5	\$ 136.2
Loss ratio (3)	11.6%	10.4%	14.6%

- (1) Related to defaulted loans with a most recent default notice dated in the year indicated. For example, if a loan had defaulted in a prior year, but then subsequently cured and later re-defaulted in the current year, that default would be considered a current year default.
- (2) Related to defaulted loans with a default notice dated in a year earlier than the year indicated, which have been continuously in default since that time.
- (3) Provision for losses as a percentage of net premiums earned.

Our mortgage insurance provision for losses for 2019 increased by \$27.0 million as compared to 2018. Reserves established for new default notices were the primary driver of our total incurred losses for 2019 and 2018. Current period new primary defaults increased by 0.8% in 2019, compared to 2018. Our gross Default to Claim Rate assumption for new primary defaults was 7.5% at December 31, 2019, compared to 8.0% as of December 31, 2018. This reduction in the estimated gross Default to Claim Rate assumption, which was based on observed trends, partially mitigated the increase in our provision for losses related to the increased number of new defaults in 2019, compared to 2018.

Our provision for losses during 2019 was positively impacted by favorable reserve development on prior year defaults. This favorable development was primarily driven by a reduction during the period in certain Default to Claim Rate assumptions for prior year defaults, based on observed trends of higher Cures than were previously estimated on those prior year defaults, partially offset by an increase in our IBNR reserve estimate related to certain legal proceedings. See Note 13 of Notes to Consolidated Financial Statements for additional information.

Our primary default rate at December 31, 2019 was 2.0% compared to 2.1% at December 31, 2018. The following table shows a rollforward of the number of our primary loans in default, including new defaults from our insurance written in years: (i) prior to and including 2008 and (ii) after 2008:

	Year Ended December 31,		
	2019	2018	2017
Beginning default inventory	21,093	27,922	29,105
Plus: New defaults on insurance written in years:			
Prior to and including 2008	17,521	19,629	25,300
After 2008	23,464	17,740	17,588
Total new defaults	40,985	37,369	42,888
Less: Cures	38,005	39,799	37,464
Less: Claims paid (1)	2,747	4,322	6,477
Less: Rescissions and Claim Denials, net of (Reinstatements) (2)	60	77	130
Ending default inventory	21,266	21,093	27,922

- (1) Includes those charged to a deductible or captive reinsurance arrangements, as well as commutations.
- (2) Net of any previous Rescission and Claim Denials that were reinstated during the period. Such reinstated Rescissions and Claim Denials may ultimately result in a paid claim.

We develop our Default to Claim Rate estimates on defaulted loans based on models that use a variety of loan characteristics to determine the likelihood that a default will reach claim status. Our gross Default to Claim Rate estimates on defaulted loans are mainly developed based on the Stage of Default and Time in Default of the underlying defaulted loans, as measured by the progress toward foreclosure sale and the number of months in default. See Note 11 of Notes to Consolidated Financial Statements for the table detailing our Default to Claim Rate assumptions.

The following tables show additional information about our primary loans in default as of the dates indicated:

	December 31, 2019					
	Total		Foreclosure Stage Defaulted Loans	Cure % During the 4th Quarter	Reserve for Losses	% of Reserve
	#	%	#	%	\$	%
(\$ in thousands)						
Missed payments:						
Two to three payments	10,816	50.9%	125	32.6%	\$ 89,187	26.2%
Four to 11 payments	6,222	29.3	462	21.5	94,912	27.9
12 payments or more	3,646	17.1	1,077	7.0	124,534	36.7
Pending claims	582	2.7	N/A	3.7	31,187	9.2
Total	<u>21,266</u>	<u>100.0%</u>	<u>1,664</u>		<u>339,820</u>	<u>100.0%</u>
IBNR and other					40,920	
LAE					8,918	
Total primary reserves					<u>\$ 389,658</u>	

December 31, 2019		
Key Reserve Assumptions		
Gross Default to Claim Rate %	Net Default to Claim Rate %	Claim Severity %
31%	30%	98%

	December 31, 2018					
	Total		Foreclosure Stage Defaulted Loans	Cure % During the 4th Quarter	Reserve for Losses	% of Reserve
	#	%	#	%	\$	%
(\$ in thousands)						
Missed payments:						
Two to three payments	10,038	47.6%	148	33.2%	\$ 83,540	23.1%
Four to 11 payments	5,905	28.0	422	24.7	87,210	24.1
12 payments or more	4,468	21.2	1,365	6.5	156,808	43.4
Pending claims	682	3.2	N/A	4.3	34,130	9.4
Total	<u>21,093</u>	<u>100.0%</u>	<u>1,935</u>		<u>361,688</u>	<u>100.0%</u>
IBNR and other					13,864	
LAE					10,271	
Total primary reserves					<u>\$ 385,823</u>	

December 31, 2018		
Key Reserve Assumptions		
Gross Default to Claim Rate %	Net Default to Claim Rate %	Claim Severity %
35%	33%	96%

N/A – Not applicable

Our aggregate weighted-average net Default to Claim Rate assumption for our primary loans used in estimating our reserve for losses, which is net of estimated Claim Denials and Rescissions, was approximately 30% and 33%, at December 31, 2019 and 2018, respectively. Our net Default to Claim Rate and loss reserve estimate incorporates our expectations with respect to future Rescissions, Claim Denials and Claim Curtailments. Our estimate of such net future Loss Mitigation Activities, inclusive of claim withdrawals, reduced our loss reserve as of December 31, 2019 and 2018 by \$19 million and \$32 million, respectively. These expectations are based primarily on recent claim withdrawal activity and our recent experience with respect to the number of claims that have been denied due to the policyholder's failure to submit sufficient documentation to perfect a claim within the time period permitted under our Master Policies and also our recent experience with respect to the number of insurance certificates that have been rescinded due to fraud, underwriter negligence or other factors.

Our reported Rescission, Claim Denial and Claim Curtailments activity in any given period is subject to challenge by our lender and servicer customers through our claims rebuttal process. In addition, we are at times engaged in discussions with our lender and servicer customers regarding our Loss Mitigation Activities. Unless a liability associated with such activities or discussions becomes probable and can be reasonably estimated, we consider our claim payments and our Rescissions, Claim Denials and Claim Curtailments to be resolved for financial reporting purposes. In accordance with the accounting standard regarding contingencies, we accrue for an estimated loss when we determine that the loss is probable and can be reasonably estimated.

We expect that a portion of previously rescinded policies will be reinstated and previously denied claims will be resubmitted with the required documentation and ultimately paid; therefore, we have incorporated this expectation into our IBNR reserve estimate. Our IBNR reserve estimate was \$41.0 million and \$11.3 million at December 31, 2019 and 2018, respectively. See Note 11 of Notes to Consolidated Financial Statements for additional information.

Factors that impact the severity of a claim include, but are not limited to: (i) the size of the loan; (ii) the amount of mortgage insurance coverage placed on the loan; (iii) the amount of time between default and claim during which we are expected to cover interest (capped at two years under our Prior Master Policy and capped at three years under our 2014 Master Policy) and certain expenses; and (iv) the impact of certain loss management activities with respect to the loan. The average Claim Severity experienced for loans covered by our primary insurance was 101.8% for 2019, compared to 104.9% in 2018.

Our mortgage insurance total loss reserve as a percentage of our mortgage insurance total RIF was 0.7% at both December 31, 2019 and December 31, 2018. See Note 11 of Notes to Consolidated Financial Statements for information regarding our reserves for losses and a reconciliation of our Mortgage Insurance segment's beginning and ending reserves for losses and LAE.

Total mortgage insurance claims paid in 2019 of \$132.2 million have decreased from claims paid of \$215.9 million in 2018. The decrease in claims paid is consistent with the ongoing decline in the outstanding default inventory. Claims paid in both periods also include the impact of commutations. Although expected claims are included in our reserve for losses, the timing of claims paid is subject to fluctuation from quarter to quarter, based on the rate that defaults cure and other factors (as described in "Item 1. Business—Mortgage Insurance—Defaults and Claims") that make the timing of paid claims difficult to predict.

The following table shows net claims paid by product and the average claim paid by product for the periods indicated:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Net claims paid: (1)			
Total primary claims paid	\$ 118,548	\$ 187,639	\$ 278,440
Total pool and other	3,162	3,842	8,750
Subtotal	121,710	191,481	287,190
Impact of commutations and settlements (2)	10,517	24,467	103,190
Total net claims paid	\$ 132,227	\$ 215,948	\$ 390,380
Total average net primary claim paid (1) (3)	\$ 49.0	\$ 53.7	\$ 50.8
Average direct primary claim paid (3) (4)	\$ 50.0	\$ 54.4	\$ 51.1

(1) Net of reinsurance recoveries.

- (2) Includes payments to commute mortgage insurance coverage on certain performing and non-performing loans. For 2019 and 2017, includes payments that, as expected, were made in connection with the settlement of the Freddie Mac Agreement, as well as payments to commute mortgage insurance coverage on certain performing and non-performing loans on which we had Pool Insurance risk.
- (3) Calculated without giving effect to the impact of captive reinsurance terminations and other commutations.
- (4) Before reinsurance recoveries.

Other Operating Expenses. The increase in other operating expenses for 2019, as compared to 2018, is primarily due to higher allocated corporate operating expenses. This increase was partially offset by an increase in ceding commissions related to higher earned premiums on policies covered under our Single Premium QSR Program.

Our expense ratio on a net premiums earned basis represents our Mortgage Insurance segment's operating expenses (which include policy acquisition costs and other operating expenses, as well as allocated corporate operating expenses), expressed as a percentage of net premiums earned. Our expense ratio was 22.2% for 2019, compared to 23.9% for 2018. The increase in net premiums earned during 2019 was the primary driver of the decrease in the expense ratio as compared to 2018.

Results of Operations—Services

The following table summarizes our Services segment's results of operations for the years ended December 31, 2019, 2018 and 2017:

<u>(In millions)</u>	Year Ended December 31,			\$ Change	
	2019	2018	2017	Favorable (Unfavorable)	
				2019 vs. 2018	2018 vs. 2017
Adjusted pretax operating income (loss) (1) . . .	\$ (14.3)	\$ (27.1)	\$ (33.8)	\$ 12.8	\$ 6.7
Net premiums earned—insurance	11.1	7.3	—	3.8	7.3
Services revenue	158.6	148.2	161.8	10.4	(13.6)
Cost of services	109.2	98.7	105.8	(10.5)	7.1
Gross profit on services	49.4	49.5	56.0	(0.1)	(6.5)
Other operating expenses (2)	74.7	65.2	65.3	(9.5)	0.1
Interest expense	—	17.8	17.7	17.8	(0.1)

- (1) Our senior management uses adjusted pretax operating income (loss) as our primary measure to evaluate the fundamental financial performance of each of our business segments. See Note 4 of Notes to Consolidated Financial Statements.
- (2) Includes allocation of corporate operating expenses of \$16.9 million, \$12.0 million and \$14.3 million for 2019, 2018 and 2017, respectively.

Our Services segment offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain. These services are primarily provided to mortgage lenders, financial institutions, investors and government entities. In addition, we provide title insurance and settlement services to mortgage lenders as well as directly to consumers. Prior to our January 2020 sale of Clayton, our mortgage services included transaction management services such as loan review, RMBS securitization and distressed asset reviews, as well as servicer and loan surveillance. See "Item 1. Business—Services—Services Business Overview—*Services Offered*" and Note 1 of Notes to Consolidated Financial Statements for additional information regarding the Services segment and the January 2020 sale of Clayton.

Adjusted Pretax Operating Income (Loss). Our Services segment's adjusted pretax operating loss for 2019 was \$14.3 million, compared to an adjusted pretax operating loss of \$27.1 million in 2018. The decrease in our adjusted pretax operating loss for 2019, as compared to 2018, was driven by a decrease in interest expense, as discussed below, partially offset by an increase in operating expense.

Net Premiums Earned-Insurance. Net premiums earned for 2019 increased compared to 2018, as a result of the acquisition of the title insurance business in March 2018 and the inclusion of its operations.

Services Revenue. Services revenue increased for 2019, as compared to 2018, primarily due to the inclusion of revenue from businesses acquired in 2018 since their respective dates of acquisition.

Cost of Services. Our cost of services is primarily affected by our level of services revenue and the mix of services provided. The level of these costs may also fluctuate if market rates of compensation change, or if there is decreased availability or a loss of qualified employees.

Other Operating Expenses. Other operating expenses for 2019 were impacted by businesses acquired in 2018 and the resulting inclusion of other operating expenses for these businesses from their respective dates of acquisition. Other operating expenses also include other selling, general and administrative expenses, depreciation, and allocations of corporate general and administrative expenses. See “Results of Operations—Consolidated—Other Operating Expenses.”

Interest Expense. Effective January 1, 2019, the Clayton Intercompany Note was repaid using proceeds from an additional capital contribution from Radian Group. As a result of the intercompany note repayment, the Services segment no longer incurs interest expense on the intercompany note.

Contractual Obligations and Commitments

We have various contractual obligations that are recorded as liabilities in our consolidated financial statements.

The following table summarizes certain of our contractual obligations and commitments, including our expected claim payments on insurance policies and interest payments on debt obligations, as of December 31, 2019, and the future periods in which such obligations are expected to be settled in cash. Additional details regarding these obligations are provided in the narrative following the table and in the Notes to Consolidated Financial Statements that are referenced in the table.

(In thousands)	Total	Payments Due by Period			
		2020	2021-2022	2023-2024	Thereafter
Long-term debt obligations (Note 12) (1)	\$ 1,170,717	\$ 47,123	\$ 84,375	\$ 534,375	\$ 504,844
Lease obligations (Note 13) (2)	95,486	10,622	19,955	20,000	44,909
Purchase obligations	4,441	2,069	2,372	—	—
Other long-term liabilities reflected on our consolidated balance sheets (3) (4)	404,765	109,954	166,877	127,934	—
Total	<u>\$ 1,675,409</u>	<u>\$ 169,768</u>	<u>\$ 273,579</u>	<u>\$ 682,309</u>	<u>\$ 549,753</u>

- (1) Includes contractual principal and related interest for \$450 million of Senior Notes due 2024 and \$450 million of Senior Notes due 2027, both of which may be redeemed in whole or in part at any time prior to maturity.
- (2) Includes \$3.8 million for operating leases that were divested as part of the sale of Clayton.
- (3) Includes our reserve for losses and LAE which reflects the application of accounting policies described below in “Critical Accounting Policies—Reserve for Losses and LAE.” The payments due by period are based on management’s estimates and assume that all of the loss reserves included in the table will result in claim payments, net of expected recoveries.
- (4) Excludes approximately \$38.5 million in potential additional liabilities associated with uncertain tax positions as of December 31, 2019. The timing or magnitude of any potential payments is unknown.

Other Contractual Obligations and Commitments

In the ordinary course of business, Radian enters into agreements pursuant to which we may be obligated under specified circumstances or upon the occurrence of certain events to indemnify the counterparties with respect to certain matters. The terms and amount of indemnification are negotiated on a transaction by transaction basis, but generally the circumstances of the transaction and/or the contract provisions are such that we believe the exposure to material liability is remote.

Off-Balance Sheet Arrangements

As of December 31, 2019, we had not entered into any material off-balance sheet arrangements as defined in Item 303(a) (4) of Regulation S-K, other than those below:

Securities Lending Agreements

We participate in securities lending agreements for the purpose of increasing the yield on our investment securities portfolio with minimal incremental risk. Pursuant to these agreements, we loan to third-party borrowers certain securities that are held as part of our investment portfolio. For a complete discussion of our securities lending agreements, including the effect of these agreements on our liquidity and risks related to these agreements, see Note 6 of Notes to Consolidated Financial Statements and “Item 7A. Quantitative and Qualitative Disclosures about Market Risk.”

Variable Interest Entities

In April 2019 and November 2018, Radian Guaranty entered into fully collateralized reinsurance agreements with Eagle Re 2019-1 and Eagle Re 2018-1, respectively, both unaffiliated special purpose reinsurers domiciled in Bermuda. The Eagle Re Issuers are special purpose VIEs that are not consolidated in our consolidated financial statements because we do not have the unilateral power to direct those activities that are significant to their economic performance.

For additional information about Eagle Re 2019-1 and Eagle Re 2018-1 and our other reinsurance arrangements, see Note 8 of Notes to Consolidated Financial Statements.

Segregated Funds Held for Others

Through Radian Title Insurance, we maintain escrow deposits as a service to our customers. Amounts held in escrow and excluded from assets and liabilities in our consolidated balance sheets totaled \$2.0 million as of December 31, 2019. These amounts were held at third-party financial institutions and not considered assets of the Company. Should one or more of the financial institutions at which escrow deposits are maintained fail, there is no guarantee that we would recover the funds deposited, whether through Federal Deposit Insurance Corporation coverage or otherwise. In the event of any such failure, we could be held liable for the disposition of these funds owned by third parties.

Liquidity and Capital Resources**Cash Flows**

The following table summarizes our consolidated cash flows from operating, investing and financing activities:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Net cash provided by (used in):			
Operating activities	\$ 694,431	\$ 677,786	\$ 360,575
Investing activities	(302,049)	(689,414)	(201,492)
Financing activities	(403,106)	22,386	(125,084)
Effect of exchange rate changes on cash and restricted cash	(4)	—	431
Increase (decrease) in cash and restricted cash.	<u>\$ (10,728)</u>	<u>\$ 10,758</u>	<u>\$ 34,430</u>

Operating Activities. Our most significant source of operating cash flows is generally from premiums received from our mortgage insurance policies, while our most significant uses of operating cash flows are generally for claims paid on our mortgage insurance policies and our operating expenses. Net cash provided by operating activities totaled \$694.4 million for 2019, compared to \$677.8 million in 2018. This increase was principally the result of a reduction in claims paid in 2019, partially offset by: (i) ceded premiums paid under the Excess-of-Loss Program in 2019 and (ii) an increase in net cash paid related to federal income taxes, including our purchases of U.S. Mortgage Guaranty Tax and Loss Bonds in 2019.

Investing Activities. Net cash used in investing activities decreased in 2019, compared to 2018, primarily as a result of: (i) an increase in proceeds from sales, net of purchases, of fixed-maturities available for sale; (ii) a decrease in net purchases of short-term investments; and (iii) an increase in proceeds from sales of trading securities. These changes were partially offset by a decrease in proceeds from sales, net of purchases, of equity securities.

Financing Activities. Net cash used in financing activities for 2019 was \$403.1 million, as compared to net cash provided by financing activities for 2018 of \$22.4 million. For 2019, our primary financing activities included: (i) an increase in repurchases of our common shares and (ii) repayments and repurchases of senior notes exceeding related issuances. For 2018, our primary financing activities included an increase in secured borrowings from the FHLB, partially offset by an increase in purchases of our common shares.

See "Item 8. Financial Statements and Supplementary Data—Consolidated Statements of Cash Flows" for additional information.

Liquidity Analysis—Holding Company

Radian Group serves as the holding company for our insurance and other subsidiaries and does not have any operations of its own. At December 31, 2019, Radian Group had available, either directly or through an unregulated subsidiary, unrestricted cash and liquid investments of \$652.6 million. Available liquidity at December 31, 2019 excludes certain additional cash and liquid investments that have been advanced to Radian Group from our subsidiaries to pay their allocated share of corporate expenses and interest payments. In addition, this amount does not take into consideration transactions subsequent to December 31, 2019, including: (i) the share repurchases of Radian Group common stock, described below, and (ii) intercompany capital actions, which collectively resulted in a net increase in Radian Group's available liquidity of approximately \$199 million. See "*Mortgage Insurance*" below for additional information on our recent intercompany capital actions.

In addition to available cash and marketable securities, Radian Group's principal sources of cash to fund future liquidity needs include: (i) payments made to Radian Group by its subsidiaries under expense- and tax-sharing arrangements; (ii) net investment income earned on its cash and marketable securities; (iii) to the extent available, dividends or other distributions from our subsidiaries; and (iv) amounts that Radian Guaranty is able to repay under the Surplus Notes. Radian Group also has in place a \$267.5 million unsecured revolving credit facility with a syndicate of bank lenders. At December 31, 2019, the full \$267.5 million remains undrawn and available under the facility. Subject to certain limitations, borrowings under the credit facility may be used for working capital and general corporate purposes, including, without limitation, capital contributions to Radian Group's insurance and reinsurance subsidiaries as well as growth initiatives. See Note 12 of Notes to Consolidated Financial Statements for additional information on our unsecured revolving credit facility.

We expect Radian Group's principal liquidity demands for the next 12 months to be: (i) the payment of corporate expenses, including taxes; (ii) interest payments on our outstanding debt obligations; (iii) the payment of dividends on our common stock, which we recently increased to \$0.125 per share; and (iv) the repurchases of Radian Group common stock pursuant to the share repurchase authorization, as described below.

In addition to our ongoing short-term liquidity needs discussed above, our most significant need for liquidity beyond the next 12 months is the repayment of \$900 million aggregate principal amount of our senior debt due in future years. See "*Capitalization—Holding Company*" below for details of our debt maturity profile. Radian Group's liquidity demands for the next 12 months or in future periods could also include: (i) early repurchases or redemptions of portions of our debt obligations and (ii) potential investments to support our business strategy, including potential additional capital contributions to our subsidiaries and possible acquisitions or investments in new businesses.

If Radian Group's current sources of liquidity are insufficient to fund its obligations, or if we otherwise decide to increase our liquidity position, Radian Group may seek additional capital, including by incurring additional debt, issuing additional equity, or selling assets, which we may not be able to do on favorable terms, if at all.

During 2019, Radian Group's available liquidity decreased by \$61.5 million, due primarily to the cost of share repurchases and the net impact of a series of debt transactions designed to reduce our total debt outstanding, as described below, the effects of which were partially offset by intercompany capital actions, including Radian Guaranty's return of \$375 million in capital to Radian Group in April 2019 as approved by the Pennsylvania Insurance Department. See "*Mortgage Insurance*" below and Note 18 of Notes to Consolidated Financial Statements for additional information on capital requirements and dividend restrictions that impact our mortgage insurance subsidiaries.

Share Repurchases. During 2019 and 2018, the Company repurchased 13.5 million shares and 3.0 million shares of Radian Group common stock, respectively, under programs authorized by Radian Group's board of directors, at a total cost of \$300.2 million and \$50.1 million, respectively, including commissions. Subsequent to December 31, 2019, the Company purchased an additional 2.7 million shares of its common stock under its share repurchase program at a total cost of \$65.8 million, including commissions. See Note 14 of Notes to Consolidated Financial Statements for additional information on our share repurchase programs, including remaining purchase authority available under our current program.

Dividends. In 2019 and 2018, our quarterly common stock dividend was \$0.0025 per share. Effective February 13, 2020, Radian Group's board of directors authorized an increase to the Company's quarterly cash dividend to \$0.125 per share. Based on our current outstanding shares of common stock, we would require approximately \$101 million in the aggregate to pay our quarterly dividends for the next 12 months. Radian Group is not subject to any limitations on its ability to pay dividends except those generally applicable to corporations that are incorporated in Delaware. Delaware corporation law provides that dividends are only payable out of a corporation's capital surplus or (subject to certain limitations) recent net profits. As of December 31, 2019, our capital surplus was \$4.0 billion, representing our dividend limitation under Delaware law.

Corporate Expenses and Interest Expense. Radian Group has expense-sharing arrangements in place with its principal operating subsidiaries that require those subsidiaries to pay their allocated share of certain holding-company expenses, including interest payments on Radian Group's outstanding debt obligations. Payments under these arrangements of corporate expenses and interest expense on Radian Group's debt obligations during 2019 were \$121 million and \$54 million, respectively. We expect substantially all of our holding company expenses to continue to be reimbursed by our subsidiaries under our expense-sharing arrangements. The expense-sharing arrangements between Radian Group and our insurance subsidiaries, as amended, have been approved by the applicable insurance departments, but such approval may be modified or revoked at any time.

Taxes. Pursuant to our tax-sharing agreements, our operating subsidiaries pay Radian Group an amount equal to any federal income tax the subsidiary would have paid on a standalone basis if they were not part of our consolidated tax return. As a result, from time to time, under the provisions of our tax-sharing agreements, Radian Group may pay to or receive from its operating subsidiaries amounts that differ from Radian Group's consolidated federal tax payment obligation. In 2018, under the provisions of our tax-sharing agreements, Radian Group received cash payments from certain of its subsidiaries that were \$222 million in excess of Radian Group's 2018 consolidated federal tax payment obligations, due primarily to the benefit in our consolidated tax return of applying certain NOL carryforwards and other tax credits that had been previously utilized by our subsidiaries on a standalone basis. For 2019, these excess tax payments from our subsidiaries were \$28 million.

In July 2018, Radian finalized a settlement with the IRS which resolved the issues and concluded all disputes related to the IRS Matter. During 2018, under the terms of the settlement, Radian utilized its qualified deposits with the U.S. Department of the Treasury to settle its \$31 million obligation to the IRS, and in 2019, the IRS refunded to Radian the remaining \$57.2 million that was previously on deposit, resulting in a reduction of our current federal income tax receivable. See Note 10 of Notes to Consolidated Financial Statements for additional information regarding the IRS Matter.

Capitalization—Holding Company

The following table presents our holding company capital structure:

<u>(In thousands)</u>	December 31, 2019	December 31, 2018
Debt:		
5.500% Senior Notes due 2019	\$ —	\$ 158,623
5.250% Senior Notes due 2020	—	234,126
7.000% Senior Notes due 2021	—	197,661
4.500% Senior Notes due 2024	450,000	450,000
4.875% Senior Notes due 2027	450,000	—
Deferred debt costs on senior notes	(12,890)	(10,062)
Revolving credit facility	—	—
Total	887,110	1,030,348
Stockholders' equity	4,048,723	3,488,715
Total capitalization	<u>\$ 4,935,833</u>	<u>\$ 4,519,063</u>
Debt-to-capital ratio	18.0%	22.8%

Radian's holding company debt-to-capital ratio decreased to 18.0% at December 31, 2019, from 22.8% at December 31, 2018. During 2019, we reduced our total debt outstanding and improved our debt maturity profile by completing the following transactions:

- repayment at maturity of \$158.6 million aggregate principal amount of our Senior Notes due 2019;
- the issuance of \$450 million aggregate principal amount of Senior Notes due 2027; and
- tender offers and the subsequent redemptions that together resulted in the repayment of the remaining aggregate principal amounts of \$234.1 million and \$197.7 million of our Senior Notes due 2020 and 2021, respectively.

Stockholders' equity increased by \$560.0 million from December 31, 2018 to December 31, 2019. The net increase in stockholders' equity resulted primarily from: (i) our net income of \$672.3 million for 2019 and (ii) net unrealized gains on

investments of \$171.5 million. These items were partially offset by shares repurchased under our share repurchase programs at a cost of \$300.2 million, including commissions.

We regularly evaluate opportunities, based on market conditions, to finance our operations by accessing the capital markets or entering into other types of financing arrangements with institutional and other lenders and financing sources, and consider various measures to improve our capital and liquidity positions, as well as to strengthen our balance sheet and improve Radian Group's debt maturity profile. In the past we have repurchased and exchanged, prior to maturity, some of our outstanding debt, and in the future, we may from time to time seek to redeem, repurchase or exchange for other securities, or otherwise restructure or refinance some or all of our outstanding debt prior to maturity in the open market through other public or private transactions, including pursuant to one or more tender offers or through any combination of the foregoing, as circumstances may allow. The timing or amount of any potential transactions will depend on a number of factors, including market opportunities and our views regarding our capital and liquidity positions and potential future needs. There can be no assurance that any such transactions will be completed on favorable terms, or at all.

Mortgage Insurance

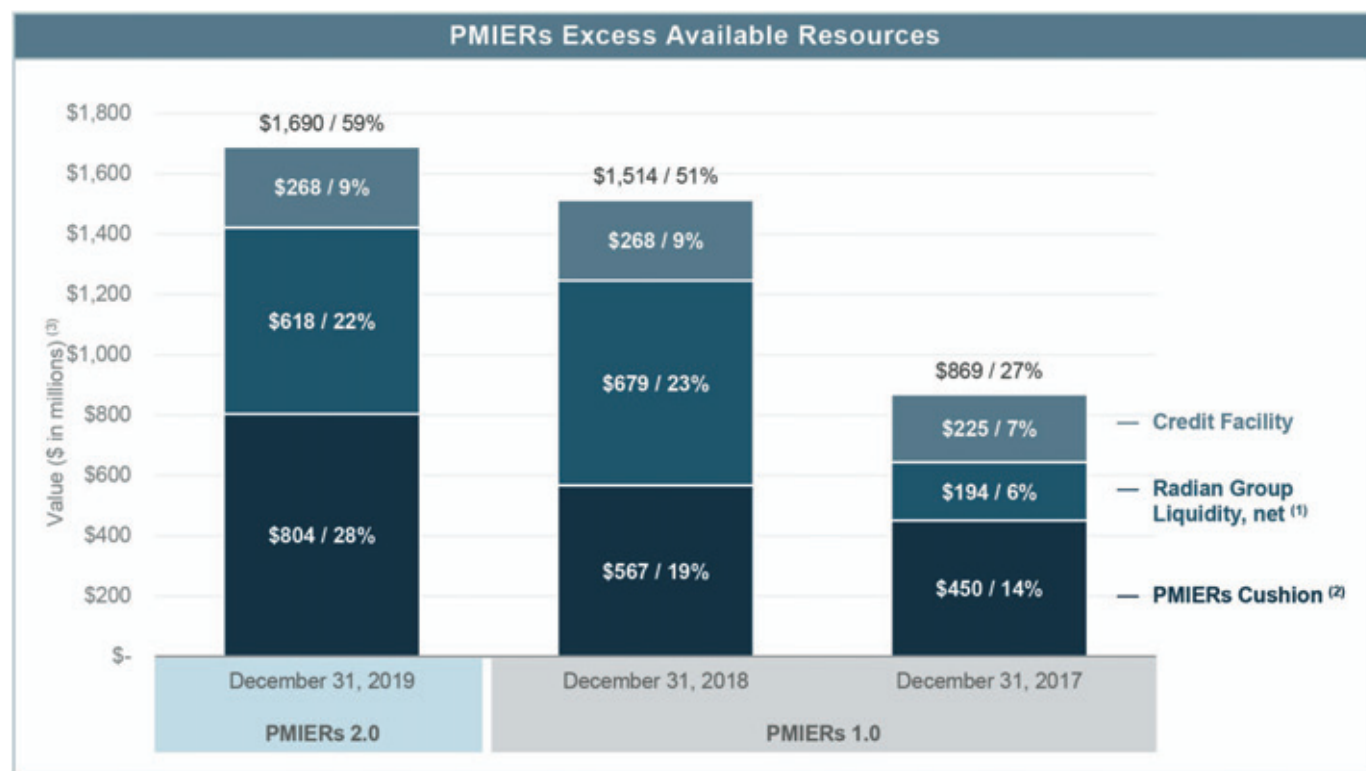
The principal demands for liquidity in our mortgage insurance business include: (i) the payment of claims and potential claim settlement transactions, net of reinsurance; (ii) expenses (including those allocated from Radian Group); (iii) repayments of FHLB advances; (iv) interest expense and repayments associated with the Surplus Notes; and (v) taxes, including potential additional purchases of U.S. Mortgage Guaranty Tax and Loss Bonds. See Notes 10 and 18 for additional information related to these non-interest bearing instruments. The principal sources of liquidity in our mortgage insurance business currently include insurance premiums, net investment income and cash flows from: (i) investment sales and maturities; (ii) FHLB advances; and (iii) capital contributions from Radian Group. We believe that the operating cash flows generated by each of our mortgage insurance subsidiaries will provide these subsidiaries with a substantial portion of the funds necessary to satisfy their needs for the foreseeable future.

As of December 31, 2019, our Mortgage Insurance segment maintained claims paying resources of \$4.7 billion on a statutory basis, which consists of contingency reserves, statutory policyholders' surplus, premiums received but not yet earned and loss reserves. In addition, our reinsurance programs are designed to provide additional claims-paying resources during times of elevated losses. See Note 8 of Notes to Consolidated Financial Statements for additional information.

Radian Guaranty's Risk-to-capital as of December 31, 2019 was 13.6 to 1. Our combined Risk-to-capital, which represents the consolidated Risk-to-capital measure for all of our mortgage insurance subsidiaries, was 12.3 to 1 as of December 31, 2019. Radian Guaranty is not expected to need additional capital to satisfy state insurance regulatory requirements in their current form. See Note 18 of Notes to Consolidated Financial Statements for additional information, including information concerning potential changes to the Model Act.

Private mortgage insurers, including Radian Guaranty, are required to comply with the PMIERS to remain approved insurers of loans purchased by the GSEs. Radian Guaranty currently is an approved mortgage insurer under the PMIERS. At December 31, 2019, Radian Guaranty's Available Assets under the current PMIERS financial requirements totaled approximately \$3.6 billion, resulting in excess available resources or a "cushion" of \$804 million, or 28%, over its Minimum Required Assets of \$2.8 billion.

The chart below summarizes our “cushion” under the PMIERS and Radian’s excess available resources as of December 31, 2019, 2018 and 2017, calculated based on the PMIERS financial requirements in effect for each date shown. Our excess available resources include our unsecured revolving credit facility and holding company liquidity, which may be utilized to enhance Radian Guaranty’s PMIERS cushion. Our cushion increased as of December 31, 2019, as compared to 2018, primarily as a result of the Eagle Re 2019-1 excess-of-loss reinsurance agreement, partially offset by the 2019 Extraordinary Distribution from Radian Guaranty to Radian Group. See Notes 8 and 18 of Notes to Consolidated Financial Statements for additional information on these transactions.



- (1) Represents Radian Group’s liquidity, net of the \$35 million minimum liquidity requirement under the unsecured revolving credit facility.
- (2) Represents Radian Guaranty’s excess of Available Assets over its Minimum Required Assets, calculated in accordance with the PMIERS financial requirements in effect at each date shown. PMIERS 1.0 was in effect for December 31, 2017 and December 31, 2018; PMIERS 2.0 was in effect for December 31, 2019.
- (3) Percentages represent the values shown as a percentage of Minimum Required Assets under the applicable PMIERS financial requirements in effect for the dates shown.

As of December 31, 2019, the coverage provided by our reinsurance programs with third parties reduced Radian Guaranty’s Minimum Required Assets by \$1.3 billion, which transactions include those with Eagle Re 2018-1 and Eagle Re 2019-1. In February 2020, Radian Guaranty entered into an additional fully collateralized reinsurance agreement with Eagle Re 2020-1. This reinsurance agreement provides for up to \$488.4 million of aggregate excess-of-loss reinsurance coverage for mortgage insurance losses on new defaults on our existing portfolio of eligible Recurring Premium Policies with RIF of \$9.9 billion that were issued between January 1, 2019 and September 30, 2019. See Note 8 of Notes to Consolidated Financial Statements for additional information on our reinsurance programs.

In January 2020, the Pennsylvania Insurance Department approved the following actions:

- the termination of the intercompany reinsurance agreement between Radian Guaranty and Radian Reinsurance;
- a \$465 million return of capital from Radian Reinsurance to Radian Group as an Extraordinary Distribution; and
- the transfer of \$200 million of cash and marketable securities from Radian Group to Radian Guaranty in exchange for a surplus note in the same amount.

See Note 18 of Notes to Consolidated Financial Statements for more information on these actions.

After consideration of the reinsurance agreement with Eagle Re 2020-1 and the net impact of the recent intercompany capital actions described above, Radian Guaranty's excess of Available Assets over its Minimum Required Assets under PMIERS would have increased from 28% to 31%.

Despite holding assets above the minimum statutory capital thresholds and PMIERS financial requirements, the ability of Radian's mortgage insurance subsidiaries to pay dividends on their common stock is restricted by certain provisions of the insurance laws of Pennsylvania, their state of domicile. Under Pennsylvania's insurance laws, ordinary dividends and distributions may only be paid out of an insurer's positive unassigned surplus, measured as of the end of the prior fiscal year, unless the Pennsylvania Insurance Department approves the payment of dividends or other distributions from another source. In light of Radian Guaranty's negative unassigned surplus related to operating losses in prior periods and the ongoing need to set aside contingency reserves, we do not anticipate that Radian Guaranty will be permitted under applicable insurance laws to pay ordinary dividends to Radian Group for the foreseeable future. See Note 18 of Notes to Consolidated Financial Statements for additional information on contingency reserve requirements. Under Pennsylvania's insurance laws, an insurer may request an Extraordinary Distribution, but payment is subject to the approval of the Pennsylvania Insurance Department. Radian Guaranty sought and received such approval to return capital by paying Extraordinary Distributions of \$375 million and \$450 million to Radian Group in 2019 and 2018, respectively.

Radian Guaranty and Radian Reinsurance are both members of the FHLB. As members, they may borrow from the FHLB, subject to certain conditions, which include the requirements to post collateral and to maintain a minimum investment in FHLB stock. Advances from the FHLB may be used to provide low-cost, supplemental liquidity for various purposes, including to fund incremental investments. Radian's current strategy includes using FHLB advances as financing to purchase additional investment securities that have similar durations, for the purpose of generating additional earnings from our investment securities portfolio with minimal incremental risk. As of December 31, 2019, there were \$134.9 million of FHLB advances outstanding.

Services

As of December 31, 2019, our Services segment maintained cash and liquid investments totaling \$39.6 million, which included restricted cash of \$0.1 million, primarily held by Radian Title Insurance. The sale of Clayton, in January 2020, is not expected to have a material impact on our liquidity.

Title insurance companies, including Radian Title Insurance, are subject to comprehensive state regulations, including minimum net worth requirements. Radian Title Insurance was in compliance with its respective minimum net worth requirements at December 31, 2019. In the event the cash flow from operations of the Services segment is not adequate to fund all of its needs, including the regulatory capital needs of Radian Title Insurance, Radian Group may provide additional funds to the Services segment in the form of an intercompany note or other capital contribution, subject to the approval of the Ohio Department of Insurance, if needed. Additional capital support may also be required for potential investments in new business initiatives to support our strategy of growing our businesses.

Liquidity levels may fluctuate depending on the levels and contractual timing of our invoicing and the payment practices of our Services clients, in combination with the timing of Services' payments for employee compensation and to external vendors. The amount, if any, and timing of the Services segment's dividend paying capacity will depend primarily on the amount of excess cash flow generated by the segment.

Ratings

Radian Group, Radian Guaranty and Radian Reinsurance have been assigned the ratings set forth in the chart below. We believe that ratings often are considered by others in assessing our credit strength and the financial strength of our primary mortgage insurance subsidiaries. The following ratings have been independently assigned by third-party statistical rating organizations, are for informational purposes only and are subject to change. See "Item 1A. Risk Factors—*The current financial strength ratings assigned to our mortgage insurance subsidiaries could weaken our competitive position.*"

	Moody's (1)	S&P (2)
Radian Group.	Ba1	BB+
Radian Guaranty	Baa1	BBB+
Radian Reinsurance.	N/A	BBB+

- (1) Based on the October 17, 2019 update, Moody's outlook for Radian Group and Radian Guaranty currently is Stable.
- (2) Based on the September 30, 2019 update, S&P's outlook for Radian Group, Radian Guaranty and Radian Reinsurance is currently Stable.

Critical Accounting Policies

SEC guidance defines Critical Accounting Policies as those policies that require the application of management's most difficult, subjective or complex judgments, often because of the need to make estimates about the effect of matters that are inherently uncertain and that may change in subsequent periods. In preparing our consolidated financial statements in accordance with GAAP, management has made estimates, assumptions and judgments that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. In preparing these financial statements, management has utilized available information, including our past history, industry standards and the current and projected economic and housing environments, among other factors, in forming its estimates, assumptions and judgments, giving due consideration to materiality. Because the use of estimates is inherent in GAAP, actual results could differ from those estimates. In addition, other companies may utilize different estimates, which may impact comparability of our results of operations to those of companies in similar businesses. A summary of the accounting policies that management believes are critical to the preparation of our consolidated financial statements is set forth below. See Note 2 of Notes to Consolidated Financial Statements for additional disclosures regarding our significant accounting policies.

Investments

We group fixed-maturity securities in our investment portfolio into one of three main categories: held to maturity, available for sale or trading securities. Fixed-maturity securities for which we have the positive intent and ability to hold to maturity, if any, are classified as held to maturity and are reported at amortized cost. Trading securities are reported at fair value, with unrealized gains and losses reported as a separate component of income. Investments in fixed-maturity securities not classified as held to maturity or trading securities are classified as available for sale and are reported at fair value, with unrealized gains and losses (net of tax) reported as a separate component of stockholders' equity as accumulated other comprehensive income (loss). Equity securities consist of holdings in common stock, preferred stock and exchange traded funds, which, effective January 1, 2018, are all recorded at fair value with unrealized gains and losses reported in income. Prior to the implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, the unrealized gains (losses) associated with equity securities that were available for sale were classified in accumulated other comprehensive income. Short-term investments consist of money market instruments, certificates of deposit and highly liquid, interest-bearing instruments with an original maturity of 12 months or less at the time of purchase. Amortization of premium and accretion of discount are calculated principally using the interest method over the term of the investment. Realized gains and losses on investments are recognized using the specific identification method.

We record an other-than-temporary impairment adjustment on a security with an unrealized loss if we intend to sell the impaired security, if it is more likely than not that we will be required to sell the impaired security prior to recovery of its amortized cost basis, or if the present value of cash flows we expect to collect is less than the amortized cost basis of the security. If a sale is likely, the security is classified as other-than-temporarily impaired and the full amount of the impairment is recognized as a loss in the statement of operations. Otherwise, losses on securities that are other-than-temporarily impaired are separated into: (i) the portion of loss that represents the credit loss and (ii) the portion that is due to other factors. The credit loss portion is recognized as a loss in the statement of operations, while the loss due to other factors is recognized in accumulated other comprehensive income (loss), net of taxes. A credit loss is determined to exist if the present value of discounted cash

flows expected to be collected from the security is less than the amortized cost basis of the security. The present value of discounted cash flows is determined using the original yield of the security. In evaluating whether a decline in value is other-than-temporary, we consider several factors in addition to the above, including, but not limited to, the following:

- the extent and the duration of the decline in value;
- the reasons for the decline in value (e.g., credit event, interest-related or market fluctuations); and
- the financial position, access to capital and near term prospects of the issuer, including the current and future impact of any specific events.

Fair Value of Financial Instruments

Our estimated fair value measurements are intended to reflect the assumptions market participants would use in pricing an asset or liability based on the best information available. Assumptions include the risks inherent in a particular valuation technique (such as a pricing model) and the risks inherent in the inputs to the model. Changes in economic conditions and capital market conditions, including but not limited to, credit spread changes, benchmark interest rate changes, market volatility and changes in the value of underlying collateral, could cause actual results to differ materially from our estimated fair value measurements. We define fair value as the current amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The fair value of fixed-maturities, short-term investments and equity securities are estimated primarily based on information derived from third-party pricing services ("pricing services"), internal models and/or broker quotes, which use a market approach, income approach or a combination of the market and income approach depending on the type of instrument and availability of information. We measure fair value and classify invested assets in a hierarchy for disclosure purposes consisting of three "levels" based on the observability of inputs available in the marketplace used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). See Note 5 of Notes to Consolidated Financial Statements for additional information.

Reserve for Losses and LAE

We establish reserves to provide for losses and LAE, which include the estimated costs of settling claims in our Mortgage Insurance segment, in accordance with the accounting standard regarding accounting and reporting by insurance enterprises. In our mortgage insurance business, the default and claim cycle begins with the receipt of a default notice from the loan servicer. Case reserves for losses are established upon receipt of notification from servicers that a borrower has missed two monthly payments, which is when we consider a loan to be in default for financial statement and internal tracking purposes. We also establish reserves for associated LAE, consisting of the estimated cost of the claims administration process, including legal and other fees and expenses associated with administering the claims process.

We maintain an extensive database of claim payment history, and use models based on a variety of loan characteristics to determine the likelihood that a default will reach claim status. Estimating our case reserve for losses involves significant reliance upon assumptions and estimates with regard to the likelihood, magnitude and timing of each potential loss, including an estimate of the impact of our Loss Mitigation Activities. The models, assumptions and estimates we use to establish loss reserves may prove to be inaccurate, especially during an extended economic downturn or a period of extreme market volatility and uncertainty. As such, we cannot be certain that our reserve estimate will be adequate to cover ultimate losses on incurred defaults. This uncertainty requires management to use considerable judgment in estimating the rate at which these loans will result in claims.

With respect to loans that are in default, considerable judgment is exercised as to the adequacy of reserve levels. We use an actuarial projection methodology referred to as a "roll rate" analysis that uses historical claim frequency information to determine the projected ultimate Default to Claim Rates based on the Stage of Default and Time in Default as well as the date that a loan goes into default. The Default to Claim Rate also includes our estimates with respect to expected Rescissions and Claim Denials, which have the effect of reducing our Default to Claim Rates. Although we believe that our Loss Mitigation Activities are justified under our policies, certain challenges have resulted in disputes and litigation, which if resolved unfavorably to us, could require us to reassume the risk on, and increase loss reserves for, those policies or pay additional claims. The assumptions embedded in our estimated Default to Claim Rate on our in-force default inventory include an adjustment to our estimated Rescissions and Claim Denials to account for the fact that we expect a certain number of policies to be reinstated and ultimately to be paid, as a result of valid challenges by such policyholders.

After estimating the Default to Claim Rate, we estimate Claim Severity based on the average of recently observed severity rates within product type, type of insurance, and Time in Default cohorts. These average severity estimates are then applied to individual loan coverage amounts to determine reserves. Similar to the Default to Claim Rate, Claim Severity also is impacted by the length of time that loans are in default and by our Loss Mitigation Activity. For claims under our primary mortgage insurance, the coverage percentage is applied to the claim amount, which consists of the unpaid loan principal, plus past due interest (for which our liability is contractually capped in accordance with the terms of our Master Policies) and certain expenses associated with the default, to determine our maximum liability. Therefore, Claim Severity generally increases the longer that a loan is in default. In addition, we estimate the impact that the amount that Claim Curtailments due to servicer noncompliance with our insurance policies and servicing guidelines have on the amount that we ultimately will have to pay with respect to claims. As part of our claims review process, we assess whether defaulted loans were serviced appropriately in accordance with our insurance policies and servicing guidelines. If a servicer failed to satisfy its servicing obligations, our insurance policies provide that we may curtail the claim payment for such default, and in some circumstances, cancel coverage or deny the claim.

We do not establish reserves for loans that are in default if we believe that we will not be liable for the payment of a claim with respect to that default unless a reserve for premium deficiency is required. We generally do not establish loss reserves for expected future claims on insured mortgages that are not in default. See Note 2 of Notes to Consolidated Financial Statements for an exception to this general principle related to premium deficiency reserve.

IBNR and Other Reserves

We also establish reserves for defaults that we estimate have been incurred but have not been reported to us on a timely basis by the servicer, as well as for previous Rescissions, Claim Denials and Claim Curtailments that we estimate will be reinstated and subsequently paid. We generally give the policyholder up to 30 days to challenge our decision to rescind coverage before we consider a policy to be rescinded and remove it from our defaulted inventory; therefore, we currently expect only a limited percentage of policies that were rescinded to be reinstated. We currently expect a significant percentage of claims that were denied to be resubmitted as a perfected claim and ultimately paid.

Sensitivity Analysis

We considered the sensitivity of first-lien loss reserve estimates at December 31, 2019 by assessing the potential changes resulting from a parallel shift in Claim Severity and Default to Claim Rate estimates for primary loans. For example, assuming all other factors remain constant, for every one percentage point change in primary Claim Severity (which we estimate to be 97.6% of risk exposure at December 31, 2019), we estimated that our loss reserves would change by approximately \$3.5 million at December 31, 2019. Assuming all other factors remain constant, for every one percentage point change in our overall primary net Default to Claim Rate (which we estimate to be 30% at December 31, 2019, including our assumptions related to Rescissions and Claim Denials), we estimated a \$11.0 million change in our loss reserves at December 31, 2019.

Senior management regularly reviews the modeled frequency, Rescission, Claim Denial, Claim Curtailments and Claim Severity estimates, which are based on historical trends, as described above. If recent emerging or projected trends differ significantly from the historical trends used to develop the modeled estimates, management evaluates these trends and determines how they should be considered in its reserve estimates.

Revenue Recognition—Insurance Premiums

Mortgage Insurance

Premiums on mortgage insurance products are written on a recurring basis, either as monthly or annual premiums, or on a multi-year basis as a single premium. Monthly premiums written are earned as coverage is provided each month. For certain monthly policies where the billing is deferred for the first month's coverage period, currently to the end of the policy, we record a net premium receivable representing the present value of such deferred premiums that we estimate will be collected at that future date. As of December 31, 2019, this net premium receivable was \$17.4 million, representing the present value of \$78.4 million in contractual deferred monthly premiums, after adjustments for the estimated collectability and timing of future billing. We recognize changes in this receivable based on changes in the estimated amount and timing of such collections, including as a result of changes in observed trends as well as our periodic review of our operations and collections practices. Annual premiums written are initially recorded as unearned premiums and amortized on a monthly, straight-line basis.

Single premiums written are initially recorded as unearned premiums and earned over time based on the anticipated claim payment pattern, which includes historical industry experience and is updated periodically. During 2019, we updated the amortization rates due to the continuing increase in the significance of borrower-paid Single Premium Policies in our portfolio following our rate reductions on borrower-paid Single Premium Policies in 2018. Under HPA, most borrower-paid policies

must be canceled automatically on the date the LTV is scheduled to reach 78% of the original value (or, if the loan is not current on that date, on the subsequent date that the loan becomes current). As a result, given the shift in our mix of Single Premium Policies toward more borrower-paid Single Premium Policies than lender-paid, the average anticipated term of our Single Premium IIF is declining compared to historical levels. We updated our analysis to reflect not only this anticipated effect of HPA cancellations on borrower-paid policies, but also changes in observed and projected loss patterns for both borrower-paid and lender-paid policies. Our results for 2019 include a \$32.9 million increase in net premiums earned and a \$0.12 increase in net income per share, resulting from a cumulative adjustment related to the updated amortization rates used to recognize revenue for Single Premium Policies.

When we rescind insurance coverage on a loan, we refund all premiums received in connection with such coverage. When insurance coverage on a loan is canceled due to claim payment, we refund all premiums received since the date of delinquency. When insurance coverage is cancelled for a reason other than Rescission or claim payment, all premium that is nonrefundable is immediately earned. Premium revenue is recognized net of our accrual for estimated premium refunds due to Rescissions or other factors, which accrual is presented in other liabilities.

With respect to our reinsurance transactions, ceded premiums written on an annual or multi-year basis are initially set up as prepaid reinsurance and are amortized in a manner consistent with the recognition of income on direct premiums.

Revenue Recognition — Services

Revenue from services is typically comprised of real estate valuation and component services, loan review, underwriting and due diligence services as well as our title and closing services. Professional services are generally sold on a fixed-price or percentage-of-sale basis. In fixed fee arrangements, revenue is recognized as services are performed as measured by costs incurred to date, compared to total estimated costs to complete the services project. Under percentage-of-sale contracts, we are paid a contractual percentage of the sale proceeds upon the sale of each property. Management applies judgment when estimating project status and the costs necessary to complete the services projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes. Services are generally invoiced upon milestones in the contract or upon consumption of the hourly resources and payments are typically due 30 days after invoice.

Income Taxes

We provide for income taxes in accordance with the provisions of the accounting standard regarding accounting for income taxes. As required under this standard, our deferred tax assets and deferred tax liabilities are recognized under the balance sheet method, which recognizes the future tax effect of temporary differences between the amounts recorded in our consolidated financial statements and the tax bases of these amounts. Deferred tax assets and deferred tax liabilities are measured using the enacted tax rates that are expected to apply to taxable income in the periods in which the deferred tax asset or deferred tax liability is expected to be realized or settled. In regards to accumulated other comprehensive income, the Company's policy for releasing disproportionate income tax effects is to release the effects as individual items are sold.

We are required to establish a valuation allowance against our deferred tax assets when it is more likely than not that all or some portion of our deferred tax assets will not be realized. At each balance sheet date, we assess our need for a valuation allowance. Our assessment is based on all available evidence, both positive and negative. This requires management to exercise judgment and make assumptions regarding whether our deferred tax assets will be realized in future periods.

Our provision for income taxes for interim financial periods is based on an estimate of our annual effective tax rate for the full year. When estimating our full year effective tax rates, we adjust our forecasted pre-tax income for gains and losses on our investments, changes in the accounting for uncertainty in income taxes, changes in our beginning of year valuation allowance, and other adjustments. The impact of these items is accounted for as Discrete Items at the applicable federal tax rate.

Deferred Policy Acquisition Costs

Incremental, direct costs associated with the successful acquisition of mortgage insurance policies, consisting of compensation, premium tax, and other policy issuance and underwriting expenses, are initially deferred and reported as deferred policy acquisition costs. Consistent with industry accounting practice, amortization of these costs for each underwriting year book of business is recognized in proportion to estimated gross profits over the estimated life of the policies.

Estimated gross profits are composed of earned premium, interest income, losses and LAE. Estimates of expected gross profit, including the Persistency Rate and loss development assumptions for each underwriting year used as a basis for amortization, are evaluated quarterly and the total amortization recorded to date is adjusted by a charge or credit to our consolidated statements of operations if actual experience or other evidence suggests that previous estimates should be revised.

Considerable judgment is used in evaluating these estimates and the assumptions on which they are based. The use of different assumptions may have a significant effect on the amortization of deferred policy acquisition costs.

Recent Accounting Pronouncements

See Note 2 of Notes to Consolidated Financial Statements for additional information regarding the impact of recent accounting pronouncements to our significant accounting policies.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Market risk represents the potential for loss due to adverse changes in the value of financial instruments as a result of changes in market conditions. Examples of market risk include changes in interest rates, credit spreads, foreign currency exchange rates and equity prices. We perform sensitivity analyses to determine the effects of market risk exposures on our investment securities by determining the potential loss in future earnings, fair values or cash flows of market-risk-sensitive instruments resulting from one or more selected hypothetical changes in the above mentioned market risks.

Interest-Rate Risk and Credit-Spread Risk

The primary market risks in our investment portfolio are interest-rate risk and credit-spread risk, namely the fair value sensitivity of our fixed income securities to changes in interest rates and credit spreads, respectively. We regularly analyze our exposure to interest-rate risk and credit-spread risk and have determined that the fair value of our investments is materially exposed to changes in both interest rates and credit spreads. As of December 31, 2019, we held \$317.2 million of investment securities for trading purposes, representing less than 6% of our total investment portfolio. Accordingly, in presenting this discussion, we have not distinguished between trading and non-trading instruments.

We calculate the duration of our fixed income securities, expressed in years, in order to estimate the interest-rate sensitivity of these securities. The average duration of our total fixed income portfolio was 4.0 years at December 31, 2019 and at December 31, 2018. To assist us in setting duration targets for the investment portfolio, we analyze: (i) the interest-rate sensitivities of our liabilities, including prepayment risk associated with premium cash flows and credit losses; (ii) entity specific cash flows under various economic scenarios; (iii) return, volatility and correlation of specific asset classes and the interconnection with our liabilities; and (iv) our current risk appetite.

Our sensitivity analysis for interest rates is based on the change in fair value of our fixed income securities, assuming a hypothetical instantaneous and parallel 100-basis point increase or decrease in the U.S. Treasury yield curve, with all other factors remaining constant. The carrying value of our fixed income securities has a balance of \$5.6 billion and \$5.1 billion. If interest rates experienced an increase of 100 basis points, our fixed income portfolio would decrease by \$220.4 million and \$198.4 million of the market value of the related fixed income portfolio for 2019 and 2018, respectively. A decrease of 100 basis points to interest rates would increase our fixed income portfolio by \$228.1 million and \$212.1 million for 2019 and 2018, respectively.

Credit spread represents the additional yield on a fixed income security, above the risk-free rate, that is paid by an issuer to compensate investors for assuming the credit risk of the issuer and market liquidity of the fixed income security. We manage credit-spread risk on both an entity and group level, across issuer, maturity, sector and asset class. Our sensitivity analysis for credit-spread risk is based on the change in fair value of our fixed income securities, assuming a hypothetical 100-basis point increase or decrease in all credit spreads, with the exception of U.S. Treasury and agency obligations for which we have assumed no change in credit spreads, and assuming all other factors remain constant. If credit-spread experienced an increase of 100 basis points, our fixed income portfolio would decrease by \$211.3 million and \$210.3 million of the market value of the related fixed income portfolio for 2019 and 2018, respectively. A decrease of 100 basis points to credit spread would increase our fixed income portfolio by \$172.1 million and \$195.7 million for 2019 and 2018, respectively.

Actual shifts in credit spreads generally vary by issuer and security, based on issuer-specific and security-specific factors such as credit quality, maturity, sector and asset class. Within a given asset class, investment grade securities generally exhibit less credit-spread volatility than securities with lower credit ratings. Our investment securities portfolio primarily consists of investment grade securities.

Our sensitivity analyses for interest-rate risk and credit-spread risk provide an indication of our investment portfolio's sensitivity to shifts in interest rates and credit spreads. However, the timing and magnitude of actual market changes may differ from the hypothetical assumptions used in our sensitivity calculations.

See "Item 1. Business—Investment Policy and Portfolio" for a discussion of portfolio strategy and risk exposure.

Securities Lending Agreements. Radian Group, Radian Guaranty and Radian Reinsurance from time to time enter into short-term securities lending agreements with third-party borrowers for the purpose of increasing the yield on our investment securities portfolio with minimal incremental risk. Market factors, including changes in interest rates, credit spreads and equity prices, may impact the timing or magnitude of cash outflows for the return of cash collateral. As of December 31, 2019 and 2018, the carrying value of these securities included in the sensitivity analyses above was \$39.0 million and \$17.8 million, respectively.

We also have the right to request the return of the loaned securities at any time. For additional information on our securities lending agreements, see Note 6 of Notes to Consolidated Financial Statements.

Item 8. Financial Statements and Supplementary Data.

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REPORT ON MANAGEMENT'S RESPONSIBILITY

Management is responsible for the preparation, integrity and objectivity of the Consolidated Financial Statements and other financial information presented in this annual report. The accompanying Consolidated Financial Statements were prepared in accordance with accounting principles generally accepted in the United States of America, applying certain estimations and judgments as required.

Our board of directors exercises its responsibility for the financial statements through its Audit Committee, which consists entirely of independent non-management board members. The Audit Committee meets periodically with management and with PricewaterhouseCoopers LLP, the independent registered public accounting firm retained to audit our Consolidated Financial Statements, both privately and with management present, to review accounting, auditing, internal control and financial reporting matters.

The accompanying report of PricewaterhouseCoopers LLP is based on its audit, which it is required to conduct in accordance with the standards of the Public Company Accounting Oversight Board (U.S.), and which includes the consideration of our internal control over financial reporting to establish a basis for reliance thereon in determining the nature, timing and extent of audit tests to be applied.

Richard G. Thornberry
Chief Executive Officer

J. Franklin Hall
Senior Executive Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Radian Group Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Radian Group Inc. and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income, changes in common stockholders’ equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and financial statement schedules listed in the index appearing under Item 15(a)(3) (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2019, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 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, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company’s management is responsible for these consolidated 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 Management’s Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and 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 consolidated 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 consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. 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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

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

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of First-Lien Primary Case Reserves for Mortgage Insurance Policies

As described in Notes 2 and 11 to the consolidated financial statements, the Company establishes case reserves for losses on mortgage insurance policies for loans that are considered to be in default, as well as reserves for loss adjustment expenses, IBNR and other reserves. As of December 31, 2019, first-lien primary case reserves were \$339.8 million of the total \$401.3 million of mortgage insurance loss reserves. Management's estimate of the case reserves involves significant reliance upon assumptions and estimates with regard to the likelihood, magnitude and timing of each potential loss. Management uses an actuarial projection methodology referred to as a "roll rate" analysis that uses historical claim frequency information to determine the projected ultimate default to claim rates based on the stage of default and time in default as well as the date that a loan goes into default. After estimating the default to claim rate, management estimates claim severity based on the average of recently observed severity rates within product type, type of insurance, and time in default cohorts.

The principal considerations for our determination that performing procedures relating to the valuation of first-lien primary case reserves for mortgage insurance policies is a critical audit matter are (i) there was significant judgment by management when developing their estimates of the default to claim rates and claim severity, which in turn led to a high degree of auditor subjectivity and judgment in performing procedures relating to such estimates, (ii) there was significant audit effort and subjectivity in evaluating the audit evidence relating to the default to claim rates, management's assessment of the relevance of historical claim frequency information and claim severity, and (iii) the audit effort included the involvement of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's valuation of first-lien primary case reserves for mortgage insurance policies, including controls over the development of the default to claim rates and claim severity. These procedures also included, among others, the involvement of professionals with specialized skill and knowledge to assist in developing an independent estimate of the case reserves for first-lien primary mortgage insurance policies using actual historical data, comparing this independent estimate to management's determined case reserves, and evaluating the reasonableness of management's assumptions related to the default to claim rates and claim severity. Performing these procedures involved testing the completeness and accuracy of data provided by management.

/s/ PricewaterhouseCoopers LLP
Philadelphia, Pennsylvania
February 28, 2020

We have served as the Company's auditor since 2007.

Radian Group Inc.
CONSOLIDATED BALANCE SHEETS

<u>(In thousands, except per-share amounts)</u>	December 31, 2019	December 31, 2018
Assets		
Investments (Notes 5 and 6)		
Fixed-maturities available for sale—at fair value (amortized cost of \$4,549,534 and \$4,098,962)	\$ 4,688,911	\$ 4,021,575
Trading securities—at fair value (amortized cost of \$297,505 and \$468,696)	317,150	469,071
Equity securities—at fair value (cost of \$125,311 and \$139,377)	130,221	130,565
Short-term investments—at fair value (includes \$25,561 and \$11,699 of reinvested cash collateral held under securities lending agreements)	518,393	528,403
Other invested assets—at fair value	4,072	3,415
Total investments	5,658,747	5,153,029
Cash	92,729	95,393
Restricted cash	3,545	11,609
Accounts and notes receivable	93,630	78,652
Deferred income taxes, net (Note 10)	—	131,643
Goodwill and other acquired intangible assets, net (Note 7)	28,187	58,998
Prepaid reinsurance premium	363,856	417,628
Other assets (Note 9)	567,619	367,700
Total assets	<u>\$ 6,808,313</u>	<u>\$ 6,314,652</u>
Liabilities and Stockholders' Equity		
Unearned premiums	\$ 626,822	\$ 739,357
Reserve for losses and loss adjustment expenses ("LAE") (Note 11)	404,765	401,361
Senior notes (Note 12)	887,110	1,030,348
FHLB advances (Note 12)	134,875	82,532
Reinsurance funds withheld	291,829	321,212
Other liabilities	414,189	251,127
Total liabilities	2,759,590	2,825,937
Commitments and Contingencies (Note 13)		
Stockholders' equity		
Common stock: par value \$.001 per share; 485,000 shares authorized at December 31, 2019 and 2018; 219,123 and 231,132 shares issued at December 31, 2019 and 2018, respectively; 201,164 and 213,473 shares outstanding at December 31, 2019 and 2018, respectively	219	231
Treasury stock, at cost: 17,959 and 17,660 shares at December 31, 2019 and 2018, respectively	(901,657)	(894,870)
Additional paid-in capital	2,449,884	2,724,733
Retained earnings	2,389,789	1,719,541
Accumulated other comprehensive income (loss) (Note 17)	110,488	(60,920)
Total stockholders' equity	4,048,723	3,488,715
Total liabilities and stockholders' equity	<u>\$ 6,808,313</u>	<u>\$ 6,314,652</u>

See Notes to Consolidated Financial Statements.

Radian Group Inc.
CONSOLIDATED STATEMENTS OF OPERATIONS

Year Ended December 31,

<u>(In thousands, except per-share amounts)</u>	2019	2018	2017
Revenues:			
Net premiums earned—insurance (Note 8)	\$ 1,145,349	\$ 1,014,007	\$ 932,773
Services revenue (Note 4)	154,596	144,972	155,103
Net investment income (Note 6)	171,796	152,475	127,248
Net gains (losses) on investments and other financial instruments	51,719	(42,476)	3,621
Other income	3,495	4,028	2,886
Total revenues	<u>1,526,955</u>	<u>1,273,006</u>	<u>1,221,631</u>
Expenses:			
Provision for losses	132,031	104,641	135,154
Policy acquisition costs	25,314	25,265	24,277
Cost of services	108,324	98,124	104,599
Other operating expenses	306,129	280,818	267,321
Restructuring and other exit costs	—	6,053	17,268
Interest expense	56,310	61,490	62,761
Loss on extinguishment of debt (Note 12)	22,738	—	51,469
Impairment of goodwill (Note 7)	4,828	—	184,374
Amortization and impairment of other acquired intangible assets	22,288	12,429	27,671
Total expenses	<u>677,962</u>	<u>588,820</u>	<u>874,894</u>
Pretax income	848,993	684,186	346,737
Income tax provision (Note 10)	176,684	78,175	225,649
Net income	<u>\$ 672,309</u>	<u>\$ 606,011</u>	<u>\$ 121,088</u>
Net income per share:			
Basic	\$ 3.22	\$ 2.83	\$ 0.56
Diluted	\$ 3.20	\$ 2.77	\$ 0.55
Weighted-average number of common shares outstanding—basic	208,773	214,267	215,321
Weighted-average number of common and common equivalent shares outstanding—diluted	210,340	218,553	220,406

See Notes to Consolidated Financial Statements.

Radian Group Inc.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Net income	\$ 672,309	\$ 606,011	\$ 121,088
Other comprehensive income (loss), net of tax (Note 17):			
Unrealized gains (losses) on investments:			
Unrealized holding gains (losses) arising during the period	180,441	(97,356)	31,903
Less: Reclassification adjustment for net gains (losses) included in net income	8,897	(10,270)	(2,642)
Net unrealized gains (losses) on investments	171,544	(87,086)	34,545
Foreign currency translation adjustments:			
Unrealized foreign currency translation adjustments	—	5	150
Less: Reclassification adjustment for liquidation of foreign subsidiary and other adjustments included in net income	3	1	(721)
Net foreign currency translation adjustments	(3)	4	871
Net actuarial gains (losses)	(133)	129	64
Other comprehensive income (loss), net of tax	171,408	(86,953)	35,480
Comprehensive income	<u>\$ 843,717</u>	<u>\$ 519,058</u>	<u>\$ 156,568</u>

See Notes to Consolidated Financial Statements.

Radian Group Inc.
CONSOLIDATED STATEMENTS OF CHANGES IN COMMON STOCKHOLDERS' EQUITY

Year Ended December 31,

<u>(In thousands)</u>	2019	2018	2017
Common Stock			
Balance, beginning of period	\$ 231	\$ 233	\$ 232
Issuance of common stock under incentive and benefit plans	1	1	1
Shares repurchased under share repurchase program (Note 14).	(13)	(3)	—
Balance, end of period	219	231	233
Treasury Stock			
Balance, beginning of period	(894,870)	(893,888)	(893,332)
Repurchases of common stock under incentive plans.	(6,787)	(982)	(556)
Balance, end of period	(901,657)	(894,870)	(893,888)
Additional Paid-in Capital			
Balance, beginning of period	2,724,733	2,754,275	2,779,891
Issuance of common stock under incentive and benefit plans	3,925	2,859	8,635
Cumulative effect of adopting accounting standard updates	—	—	756
Stock-based compensation	21,414	17,649	13,491
Impact of extinguishment of convertible senior notes (Note 12)	—	—	(52,700)
Termination of capped calls (Note 12)	—	—	4,208
Shares repurchased under share repurchase program (Note 14).	(300,188)	(50,050)	(6)
Balance, end of period	2,449,884	2,724,733	2,754,275
Retained Earnings			
Balance, beginning of period	1,719,541	1,116,333	997,890
Cumulative effect of adopting accounting standards updates.	—	(663)	(491)
Net income	672,309	606,011	121,088
Dividends declared	(2,061)	(2,140)	(2,154)
Balance, end of period	2,389,789	1,719,541	1,116,333
Accumulated Other Comprehensive Income (Loss)			
Balance, beginning of period	(60,920)	23,085	(12,395)
Cumulative effect of adopting accounting standards updates.	—	2,948	—
Net unrealized gains (losses) on investments, net of tax	171,544	(87,086)	34,545
Net foreign currency translation adjustment, net of tax	(3)	4	871
Net actuarial gains (losses)	(133)	129	64
Balance, end of period	110,488	(60,920)	23,085
Total Stockholders' Equity	\$ 4,048,723	\$ 3,488,715	\$ 3,000,038

See Notes to Consolidated Financial Statements.

Radian Group Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS

Year Ended December 31,

<u>(In thousands)</u>	2019	2018	2017
Cash flows from operating activities:			
Net income	\$ 672,309	\$ 606,011	\$ 121,088
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Net (gains) losses on investments and other financial instruments	(51,719)	42,476	(3,621)
Loss on extinguishment of debt	22,738	—	51,469
Deferred income tax provision	157,162	120,573	166,527
Impairment of goodwill	4,828	—	184,374
Amortization and impairment of other acquired intangible assets	22,288	12,429	27,797
Depreciation, other amortization, and other impairments, net	50,439	56,661	58,038
Change in:			
Accounts and notes receivable.	(25,504)	(4,599)	3,628
Prepaid reinsurance premiums.	53,772	(31,119)	(157,071)
Unearned premiums.	(112,535)	15,419	42,716
Reserve for losses and LAE.	3,404	(109,642)	(252,681)
Reinsurance funds withheld.	(29,383)	32,814	130,397
Other assets	(134,430)	43,562	(16,491)
Other liabilities.	61,062	(106,799)	4,405
Net cash provided by (used in) operating activities.	<u>694,431</u>	<u>677,786</u>	<u>360,575</u>
Cash flows from investing activities:			
Proceeds from sales of:			
Fixed-maturities available for sale.	986,647	728,584	888,219
Trading securities.	130,537	58,317	194,784
Equity securities.	69,779	95,697	38,318
Proceeds from redemptions of:			
Fixed-maturities available for sale.	464,777	457,595	463,548
Trading securities.	37,684	54,329	79,296
Purchases of:			
Fixed-maturities available for sale.	(1,913,703)	(1,875,069)	(1,947,916)
Equity securities.	(57,422)	(69,160)	(213,469)
Sales, redemptions and (purchases) of:			
Short-term investments, net	8,017	(108,325)	324,258
Other assets and other invested assets, net.	(739)	2,590	882
Net cash received (transferred) in sale of subsidiaries	—	—	(650)
Purchases of property and equipment, net	(27,626)	(26,008)	(28,676)
Acquisitions, net of cash acquired	—	(7,964)	(86)
Net cash provided by (used in) investing activities.	<u>(302,049)</u>	<u>(689,414)</u>	<u>(201,492)</u>

Radian Group Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Cash flows from financing activities:			
Dividends paid	(2,061)	(2,140)	(2,154)
Issuance of senior notes, net	442,439	—	442,163
Repayments and repurchases of senior notes	(610,763)	—	(593,527)
Proceeds from termination of capped calls	—	—	4,208
Issuance of common stock	2,416	1,385	7,132
Repurchases of common shares	(300,201)	(50,053)	(6)
Credit facility commitment fees paid	(989)	(1,510)	(1,993)
Change in secured borrowings, net (with terms 3 months or less)	13,862	39,342	19,357
Proceeds from secured borrowings (with terms greater than 3 months)	115,275	56,449	—
Repayments of secured borrowings (with terms greater than 3 months)	(62,932)	(20,917)	—
Repayments of other borrowings	(152)	(170)	(264)
Net cash provided by (used in) financing activities	(403,106)	22,386	(125,084)
Effect of exchange rate changes on cash and restricted cash	(4)	—	431
Increase (decrease) in cash and restricted cash	(10,728)	10,758	34,430
Cash and restricted cash, beginning of period	107,002	96,244	61,814
Cash and restricted cash, end of period	\$ 96,274	\$ 107,002	\$ 96,244
Supplemental disclosures of cash flow information:			
Income taxes paid (received) (Note 10)	\$ 71,469	\$ 8,364	\$ 94,328
Interest paid	45,762	56,688	57,453

See Notes to Consolidated Financial Statements.

1. Description of Business

We are a diversified mortgage and real estate services business, providing both credit-related insurance coverage and other credit risk management solutions, as well as a broad array of real estate, title and mortgage services. We have two reportable business segments—Mortgage Insurance and Services.

Mortgage Insurance

Our Mortgage Insurance segment provides credit-related insurance coverage, principally through private mortgage insurance on residential first-lien mortgage loans, as well as other credit risk management solutions, to mortgage lending institutions and mortgage credit investors. We provide our mortgage insurance products and services mainly through our wholly-owned subsidiary, Radian Guaranty. Private mortgage insurance plays an important role in the U.S. housing finance system because it promotes affordable home ownership and helps protect mortgage lenders, investors and other beneficiaries by mitigating default-related losses on residential mortgage loans. Generally, these loans are made to home buyers who make down payments of less than 20% of the purchase price for their home or, in the case of refinancings, have less than 20% equity in their home. Private mortgage insurance also facilitates the sale of these low down payment loans in the secondary mortgage market, most of which are currently sold to the GSEs. Our total direct primary mortgage IIF and RIF were \$240.6 billion and \$60.9 billion, respectively, as of December 31, 2019.

The GSEs and state insurance regulators impose various capital and financial requirements on our insurance subsidiaries. These include Risk-to-capital, other risk-based capital measures and surplus requirements, as well as the PMIERS financial requirements. Failure to comply with these capital and financial requirements may limit the amount of insurance that our mortgage insurance subsidiaries may write or prohibit our mortgage insurance subsidiaries from writing insurance altogether. The GSEs and state insurance regulators also possess significant discretion with respect to our mortgage insurance subsidiaries and all aspects of their business. See Note 18 for additional information on PMIERS and other regulatory information.

Services

Our Services segment is primarily a fee-for-service business that offers a broad array of real estate, title and mortgage services to market participants across the mortgage and real estate value chain. We offer these services primarily to mortgage lenders, financial institutions, investors and government entities. In addition, we provide title insurance and settlement services to mortgage lenders as well as directly to consumers. Our real estate services help lenders, investors and real estate agents evaluate, manage, monitor and sell properties. These real estate services include software as a service solutions and platforms, as well as managed services, such as REO asset management, real estate valuation services and real estate brokerage services. Our title services provide a comprehensive suite of insurance and non-insurance title, closing and settlement services for residential mortgage loans. Our mortgage services include a full range of services to support the single family rental business and asset class and contract underwriting to support our mortgage insurance customers.

Prior to our January 2020 sale of Clayton, our mortgage services also included transaction management services, such as loan review, RMBS securitization and distressed asset reviews and servicer and loan surveillance services. See Note 7 for additional information on the sale of Clayton.

2. Significant Accounting Policies

Basis of Presentation

Our consolidated financial statements are prepared in accordance with GAAP and include the accounts of Radian Group Inc. and its subsidiaries. All intercompany accounts and transactions, and intercompany profits and losses, have been eliminated. Certain prior period amounts have been reclassified to conform to current period presentation.

We refer to Radian Group Inc. together with its consolidated subsidiaries as “Radian,” the “Company,” “we,” “us” or “our,” unless the context requires otherwise. We generally refer to Radian Group Inc. alone, without its consolidated subsidiaries, as “Radian Group.” Unless otherwise defined in this report, certain terms and acronyms used throughout this report are defined in the Glossary of Abbreviations and Acronyms included as part of this report.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of our contingent assets and liabilities at the dates of the

financial statements, as well as the reported amounts of revenues and expenses during the reporting periods. While the amounts included in our consolidated financial statements include our best estimates and assumptions, actual results may vary materially.

Investments

We group fixed-maturity securities in our investment portfolio into one of three main categories: held to maturity, available for sale or trading securities. Fixed-maturity securities for which we have the positive intent and ability to hold to maturity, if any, are classified as held to maturity and are reported at amortized cost. Trading securities are reported at fair value, with unrealized gains and losses reported as a separate component of income. Investments in fixed-maturity securities not classified as held to maturity or trading securities are classified as available for sale and are reported at fair value, with unrealized gains and losses (net of tax) reported as a separate component of stockholders' equity as accumulated other comprehensive income (loss). Equity securities consist of holdings in common stock, preferred stock and exchange traded funds, which, effective January 1, 2018, are all recorded at fair value with unrealized gains and losses reported in income. Prior to the implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, the unrealized gains (losses) associated with equity securities that were available for sale were classified in accumulated other comprehensive income. Short-term investments consist of money market instruments, certificates of deposit and highly liquid, interest-bearing instruments with an original maturity of 12 months or less at the time of purchase. Amortization of premium and accretion of discount are calculated principally using the interest method over the term of the investment. Realized gains and losses on investments are recognized using the specific identification method. See Notes 5 and 6 for further discussion on investments.

We record an other-than-temporary impairment adjustment on a security with an unrealized loss if we intend to sell the impaired security, if it is more likely than not that we will be required to sell the impaired security prior to recovery of its amortized cost basis, or if the present value of cash flows we expect to collect is less than the amortized cost basis of the security. If a sale is likely, the security is classified as other-than-temporarily impaired and the full amount of the impairment is recognized as a loss in the statement of operations. Otherwise, losses on securities that are other-than-temporarily impaired are separated into: (i) the portion of loss that represents the credit loss and (ii) the portion that is due to other factors. The credit loss portion is recognized as a loss in the statement of operations, while the loss due to other factors is recognized in accumulated other comprehensive income (loss), net of taxes. A credit loss is determined to exist if the present value of discounted cash flows expected to be collected from the security is less than the amortized cost basis of the security. The present value of discounted cash flows is determined using the original yield of the security. In evaluating whether a decline in value is other-than-temporary, we consider several factors in addition to the above, including, but not limited to, the following:

- the extent and the duration of the decline in value;
- the reasons for the decline in value (e.g., credit event, interest-related or market fluctuations); and
- the financial position, access to capital and near term prospects of the issuer, including the current and future impact of any specific events.

Fair Value of Financial Instruments

Our estimated fair value measurements are intended to reflect the assumptions market participants would use in pricing an asset or liability based on the best information available. Assumptions include the risks inherent in a particular valuation technique (such as a pricing model) and the risks inherent in the inputs to the model. Changes in economic conditions and capital market conditions, including but not limited to, credit spread changes, benchmark interest rate changes, market volatility and changes in the value of underlying collateral, could cause actual results to differ materially from our estimated fair value measurements. We define fair value as the current amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

In accordance with GAAP, we established a three-level valuation hierarchy for disclosure of fair value measurements based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level I measurements) and the lowest priority to unobservable inputs (Level III measurements). The level in the fair value hierarchy within which the fair value measurement falls is determined based on the lowest level input that is significant to the measurement in its entirety. The three levels of the fair value hierarchy are defined below:

- Level I — Unadjusted quoted prices for identical assets or liabilities in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;
- Level II — Prices or valuations based on observable inputs other than quoted prices in active markets for identical assets and liabilities; and
- Level III — Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable. Level III inputs are used to measure fair value only to the extent that observable inputs are not available.

For markets in which inputs are not observable or are limited, we use significant judgment and assumptions that a typical market participant would use to evaluate the market price of an asset or liability. Given the level of judgment necessary, another market participant may derive a materially different estimate of fair value. These assets and liabilities are classified in Level III of our fair value hierarchy.

Available for sale securities, trading securities, equity securities and certain other assets are recorded at fair value as described in Note 5. All changes in fair value of trading securities, equity securities (effective January 1, 2018) and certain other assets are included in our consolidated statements of operations.

Restricted Cash

Included in our restricted cash balances as of December 31, 2019 were cash funds held in trusts for the benefit of: a mortgage insurance reserve policy held in escrow for any future duties, rights and liabilities; certain policyholders; servicer liabilities; and title services obligations.

Accounts and Notes Receivable

Accounts and notes receivable primarily consist of accrued premiums receivable due from our Mortgage Insurance customers, amounts billed and due from our Services customers for services our Services segment has performed, and profit commission receivable, if any, related to our reinsurance transactions. See Note 8 for details. Accounts and notes receivable are carried at their estimated collectible amounts, net of any allowance for doubtful accounts, and are periodically evaluated for collectability based on past payment history and current economic conditions. Accounts and notes receivable exclude unbilled receivables totaling \$13.8 million, which represent receivables for services performed that are not yet billed. Unbilled receivables are presented in other assets.

Income Taxes

We provide for income taxes in accordance with the provisions of the accounting standard regarding accounting for income taxes. As required under this standard, our deferred tax assets and deferred tax liabilities are recognized under the balance sheet method, which recognizes the future tax effect of temporary differences between the amounts recorded in our consolidated financial statements and the tax bases of these amounts. Deferred tax assets and deferred tax liabilities are measured using the enacted tax rates that are expected to apply to taxable income in the periods in which the deferred tax asset or deferred tax liability is expected to be realized or settled. In regards to accumulated other comprehensive income, the Company's policy for releasing disproportionate income tax effects is to release the effects as individual items are sold.

We are required to establish a valuation allowance against our deferred tax assets when it is more likely than not that all or some portion of our deferred tax assets will not be realized. At each balance sheet date, we assess our need for a valuation allowance. Our assessment is based on all available evidence, both positive and negative. This requires management to exercise judgment and make assumptions regarding whether our deferred tax assets will be realized in future periods.

Our provision for income taxes for interim financial periods is based on an estimate of our annual effective tax rate for the full year. When estimating our full year effective tax rates, we adjust our forecasted pre-tax income for gains and losses on our investments, changes in the accounting for uncertainty in income taxes, changes in our beginning of year valuation allowance, and other adjustments. The impact of these items is accounted for as Discrete Items at the applicable federal tax rate.

Reserve for Losses and LAE

We establish reserves to provide for losses and LAE, which include the estimated costs of settling claims in our Mortgage Insurance segment, in accordance with the accounting standard regarding accounting and reporting by insurance enterprises (ASC 944). Although this standard specifically excludes mortgage insurance from its guidance relating to the reserve for losses, because there is no specific guidance for mortgage insurance, we establish reserves for mortgage insurance as described below, using the guidance contained in this standard supplemented with other accounting guidance.

In our mortgage insurance business, the default and claim cycle begins with the receipt of a default notice from the loan servicer. Case reserves for losses are established upon receipt of notification from servicers that a borrower has missed two monthly payments, which is when we consider a loan to be in default for financial statement and internal tracking purposes. We also establish reserves for associated LAE, consisting of the estimated cost of the claims administration process, including legal and other fees and expenses associated with administering the claims process.

With respect to loans that are in default, considerable judgment is exercised as to the adequacy of reserve levels. We use an actuarial projection methodology referred to as a “roll rate” analysis that uses historical claim frequency information to determine the projected ultimate Default to Claim Rates based on the Stage of Default and Time in Default as well as the date that a loan goes into default. The Default to Claim Rate also includes our estimates with respect to expected Rescissions and Claim Denials, which have the effect of reducing our Default to Claim Rates.

After estimating the Default to Claim Rate, we estimate Claim Severity based on the average of recently observed severity rates within product type, type of insurance, and Time in Default cohorts. These average severity estimates are then applied to individual loan coverage amounts to determine reserves.

Estimating our case reserve for losses involves significant reliance upon assumptions and estimates with regard to the likelihood, magnitude and timing of each potential loss, including an estimate of the impact of our Loss Mitigation Activities. The models, assumptions and estimates we use to establish loss reserves may prove to be inaccurate, especially during an extended economic downturn or a period of extreme market volatility and uncertainty. As such, we cannot be certain that our reserve estimate will be adequate to cover ultimate losses on incurred defaults. This uncertainty requires management to use considerable judgment in estimating the rate at which these loans will result in claims.

We also establish reserves for defaults that we estimate have been incurred but have not been reported (“IBNR”) to us on a timely basis by the servicer, as well as for previous Rescissions, Claim Denials, and Claim Curtailments that we estimate will be reinstated and subsequently paid. We generally give the policyholder up to 30 days to challenge our decision to rescind coverage before we consider a policy to be rescinded and remove it from our defaulted inventory. We currently expect a significant percentage of claims that were denied to be resubmitted as a perfected claim and ultimately paid. All estimates are periodically reviewed and adjustments are made as they become necessary.

The impact to our reserve due to estimated future Loss Mitigation Activities incorporates our expectations regarding the number of policies that we expect to be reinstated as a result of our claims rebuttal process. Rescissions, Claim Denials and Claim Curtailments may occur for various reasons, including, without limitation, underwriting negligence, fraudulent applications and appraisals, breach of representations and warranties and inadequate documentation, primarily related to our insurance written in years prior to and including 2008.

We do not establish reserves for loans that are in default if we believe that we will not be liable for the payment of a claim with respect to that default. We generally do not establish loss reserves for expected future claims on insured mortgages that are not in default. See “—Reserve for Premium Deficiency” below for an exception to these general principles.

Unless a liability associated with such activities or discussions becomes probable and can be reasonably estimated, we consider our claim payments and our Rescissions, Claim Denials and Claim Curtailments to be resolved for financial reporting purposes. Under the accounting standard regarding contingencies, an estimated loss is accrued only if we determine that the loss is probable and can be reasonably estimated. For populations of disputed Rescissions, Claim Denials and Claim Curtailments where we determine that a settlement is probable and that a loss can be reasonably estimated, we reflect our best estimate of the expected loss related to the populations under discussion in our financial statements, primarily as a component of our IBNR reserve. While our reserves include our best estimate of such losses, the outcome of the discussions or potential legal proceedings that could ensue is uncertain, and it is reasonably possible that a loss exists in excess of the amount accrued.

Reserve for Premium Deficiency

Insurance enterprises are required to establish a PDR if the net present value of the expected future losses and expenses for a particular product line exceeds the net present value of expected future premiums and existing reserves for that product line. We reassess our expectations for premiums, losses and expenses for our mortgage insurance business at least quarterly and update our premium deficiency analyses accordingly. For our mortgage insurance business, we group our mortgage insurance products into two categories: first-lien and second-lien mortgage loans. As of December 31, 2019 and 2018, the combination of the net present value of our expected future premiums and existing reserves (net of reinsurance recoverables) significantly exceeded the net present value of our future expected losses and expenses associated with our first lien mortgage insurance portfolio. Our second-lien PDR, which was \$0.2 million and \$0.9 million as of December 31, 2019 and 2018, respectively, is recorded as a component of other liabilities.

Revenue Recognition—Insurance Premiums

Mortgage Insurance

Premiums on mortgage insurance products are written on a recurring basis, either as monthly or annual premiums, or on a multi-year basis as a single premium. Monthly premiums written are earned as coverage is provided each month. For certain monthly policies where the billing is deferred for the first month's coverage period, currently to the end of the policy, we record a net premium receivable representing the present value of such deferred premiums that we estimate will be collected at that future date. As of December 31, 2019, this net premium receivable was \$17.4 million, representing the present value of \$78.4 million in contractual deferred monthly premiums, after adjustments for the estimated collectability and timing of future billing. We recognize changes in this receivable based on changes in the estimated amount and timing of such collections, including as a result of changes in observed trends as well as our periodic review of our operations and collections practices. Annual premiums written are initially recorded as unearned premiums and amortized on a monthly, straight-line basis.

Single premiums written are initially recorded as unearned premiums and earned over time based on the anticipated claim payment pattern, which includes historical industry experience and is updated periodically. During 2019, we updated the amortization rates due to the continuing increase in the significance of borrower-paid Single Premium Policies in our portfolio following our rate reductions on borrower-paid Single Premium Policies in 2018. Under HPA, most borrower-paid policies must be canceled automatically on the date the LTV is scheduled to reach 78% of the original value (or, if the loan is not current on that date, on the subsequent date that the loan becomes current). As a result, given the shift in our mix of Single Premium Policies toward more borrower-paid Single Premium Policies than lender-paid, the average anticipated term of our Single Premium IIF is declining compared to historical levels. We updated our analysis to reflect not only this anticipated effect of HPA cancellations on borrower-paid policies, but also changes in observed and projected loss patterns for both borrower-paid and lender-paid policies. Our results for 2019 include a \$32.9 million increase in net premiums earned and a \$0.12 increase in net income per share, resulting from a cumulative adjustment related to the updated amortization rates used to recognize revenue for Single Premium Policies.

When we rescind insurance coverage on a loan, we refund all premiums received in connection with such coverage. When insurance coverage on a loan is canceled due to claim payment, we refund all premiums received since the date of delinquency. When insurance coverage is cancelled for a reason other than Rescission or claim payment, all premium that is nonrefundable is immediately earned. Premium revenue is recognized net of our accrual for estimated premium refunds due to Rescissions or other factors, which accrual is presented in other liabilities.

With respect to our reinsurance transactions, ceded premiums written on an annual or multi-year basis are initially set up as prepaid reinsurance and are amortized in a manner consistent with the recognition of income on direct premiums.

Title Insurance

Title insurance premiums are typically due and earned in full when the real estate transaction is closed. Premiums generally are calculated with reference to the policy amount. The premium charged by a title insurer or an agent is subject to regulation in most areas. Such regulations vary from state to state.

Revenue Recognition—Services

The FASB issued an update to the accounting standard regarding revenue recognition, *Revenue from Contracts with Customers*, which establishes principles for reporting information about the nature, amount, timing and uncertainty of revenue and cash flows arising from our contracts with customers to provide services. We adopted this update effective January 1, 2018,

using the modified retrospective approach. The principle of this update requires an entity to recognize revenue representing the transfer of services to customers in an amount that reflects the consideration that it expects to be entitled to receive in exchange for those services, recognized as the performance obligations are satisfied.

This update is primarily applicable to revenues from our Services segment. This update did not change revenue recognition principles related to our investments and insurance products, which together represented the majority of our total revenue for 2018 and are subject to other GAAP guidance discussed elsewhere within our disclosures. See Note 1 “—Services” for information about the services we offer.

Revenue expected to be recognized in any future period related to remaining performance obligations, such as contracts where revenue is recognized as invoiced and contracts with variable consideration related to undelivered performance obligations, is not material.

Fee-for-Service Contracts

Generally, our contracts with our Services clients do not include minimum volume commitments and can be terminated at any time by our clients. Although some of our contracts and assignments are recurring in nature, and include repetitive monthly assignments, a portion of our engagements are transactional in nature. Due to the transactional nature of our business, our Services segment revenues may fluctuate from period to period as transactions are commenced or completed. We do not recognize revenue or expense related to amounts advanced by us and subsequently reimbursed by clients for maintenance or repairs, because we do not take control of the service prior to the client taking control. We record an expense if an advance is made by us that is not in accordance with a client contract, and the client is not obligated to reimburse us.

Due to the nature of the services provided, our Services arrangements with customers may include fixed price contracts, and to a lesser extent, percentage-of-sale contracts.

Fixed-Price Contracts. Following the Clayton sale, we use fixed-price contracts in our real estate valuation and asset management business activities, our title and closing services, as well as our services related to single family rental services and contract underwriting. Prior to the Clayton sale, we also used fixed-price contracts in our surveillance business for our servicer oversight services and RMBS surveillance services. Under fixed-price contracts we agree to perform the specified services and deliverables for a pre-determined per-unit or per-file price or day rate. Each service qualifies as a separate performance obligation and revenue is recognized as the service performed is made available to the client.

Percentage-of-Sale Contracts. Under percentage-of-sale contracts, we are paid a contractual percentage of the sale proceeds upon the sale of each property. These contracts are only used for a portion of our REO management services and our real estate brokerage services. In addition, through the use of our proprietary technology, property leads are sent to select clients. Revenue attributable to services provided under a percentage-of-sale contract is recognized over time and measured based on the progress to date and typically coincides with the client’s successful closing on the property. The revenue recognized for these transactions is based on a percentage of the sale.

In certain instances, fees are received at the time that an asset is assigned to Radian for management. These fees are recorded as deferred revenue and are recognized over time based on progress to date and the availability to customers.

Cost of Services

Cost of services consists primarily of costs paid to outside vendors, including real estate agents that provide valuation and related services, as well as data acquisition costs and other compensation-related expenses to maintain software application platforms that directly support our businesses. Cost of services also includes employee compensation and related payroll benefits, as well as corresponding travel and related expenses incurred in providing such services to clients in our Services segment. Cost of services does not include an allocation of overhead costs.

Leases

We determine if an arrangement includes a lease at inception, and if it does, we recognize a right-of-use asset and lease liability in other assets and other liabilities, respectively, in our consolidated balance sheet. Right-of-use assets represent our right to use an underlying asset for the lease term and are recognized net of any payments made or received from the lessor. Lease liabilities represent our obligation to make lease payments arising from the lease and are based on the present value of lease payments over the lease term. In determining the net present value of lease payments, we use our incremental borrowing rate based on the information available at the lease commencement date or as of our date of adoption, January 1, 2019.

Lease expense is recognized on a straight-line basis over the expected lease term. For lease agreements entered into after the adoption of a new accounting standard in 2019, lease and non-lease components are generally not accounted for separately. For more information regarding this new accounting standard, see “—Recent Accounting Pronouncements—*Accounting Standards Adopted During 2019*” below. We have elected the short-term exemption for contracts with lease terms of 12 months or less.

Our lease agreements primarily relate to operating leases for office space we use in our operations. Certain of our leases include renewal options and/or termination options that we did not consider in the determination of the right-of-use asset or the lease liability as we did not believe it was reasonably certain that we would exercise such options. Our lease agreements do not contain any variable lease payments, material residual value guarantees or material restrictive covenants.

Reinsurance

We cede insurance risk through the use of reinsurance contracts and follow reinsurance accounting for those transactions where significant risk is transferred. Loss reserves and unearned premiums are established before consideration is given to amounts related to our reinsurance agreements.

In accordance with the terms of the Single Premium QSR Program, rather than making a cash payment or transferring investments for ceded premiums written, Radian Guaranty holds the related amounts to collateralize the reinsurers’ obligations and has established a corresponding funds withheld liability. Any loss recoveries and any potential profit commission to Radian Guaranty will be realized from this account. The reinsurers’ share of earned premiums is paid from this account on a quarterly basis. This liability also includes an interest credit on funds withheld, which is recorded as ceded premiums at a rate specified in the agreement and, depending on experience under the contract, may be paid to either Radian Guaranty or the reinsurers. The ceding commission earned for premiums ceded pursuant to this transaction is attributable to other underwriting costs (including any related deferred policy acquisition costs). The unamortized portion of the ceding commission in excess of our related acquisition cost is reflected in other liabilities. Ceded premiums written are recorded on the balance sheet as prepaid reinsurance premiums and amortized to ceded premiums earned in a manner consistent with the recognition of income on direct premiums. See Note 8 for further discussion of our reinsurance transactions.

Variable Interest Entity

In connection with our reinsurance programs for our mortgage insurance business, we may enter into contracts with variable interest entities (“VIEs”). VIEs include corporations, trusts or partnerships in which: (i) the entity has insufficient equity at risk to allow it to finance its activities without additional subordinated financial support or (ii) at-risk equity holders, as a group, do not have the characteristics of a controlling financial interest.

We perform an evaluation to determine whether we are required to consolidate the VIE’s assets and liabilities in our consolidated financial statements, based on whether we are deemed to be the primary beneficiary. The primary beneficiary of a VIE is the variable interest holder that is determined to have the controlling financial interest as a result of having both: (i) the power to direct the activities of a VIE that most significantly impact the economic performance of the VIE and (ii) the obligation to absorb losses or right to receive benefits from the VIE that potentially could be significant to the VIE. See Note 8 for additional information.

Goodwill and Other Acquired Intangible Assets, Net

Goodwill and other acquired intangible assets were established in connection with acquisitions. Goodwill is an asset representing the estimated future economic benefits arising from the assets we have acquired that were not individually identified and separately recognized, and includes the value of discounted expected future cash flows of the entities acquired, the workforce, and expected synergies with our other affiliates and other unidentifiable intangible assets. Goodwill is deemed to have an indefinite useful life and is subject to review for impairment annually, or more frequently, whenever circumstances indicate potential impairment at the reporting unit level. A reporting unit represents a business for which discrete financial information is available; more than one reporting unit may be aggregated into a single reporting unit if they have similar economic characteristics. We have concluded that we have one reporting unit, the Services segment, for purposes of our goodwill impairment assessment. Events that could result in an interim assessment of goodwill impairment and/or a potential impairment charge include, but are not limited to: (i) a more-likely-than-not expectation of selling or disposing of all, or a portion, of a reporting unit; (ii) significant under-performance relative to historical or projected future operating results; (iii) significant changes in the strategy for the Services segment; (iv) significant negative industry or economic trends; and (v) a decline in Radian’s market capitalization below book value if such decline is attributable to the Services segment. Management

regularly updates certain assumptions related to our projections, including the likelihood of achieving the assumed potential revenues from new initiatives and business strategies, and if these or other items have a significant negative impact on the reporting unit's projections we may perform additional analysis to determine whether an impairment charge is needed. Lower earnings over sustained periods also can lead to impairment of goodwill, which could result in a charge to earnings. The value of goodwill is primarily supported by revenue projections, which are mostly driven by projected transaction volume and margins.

Acquired intangible assets, other than goodwill, primarily consist of customer relationships and represents the value of the specifically acquired customer relationships and are valued using the excess earnings approach using estimated client revenues, attrition rates, implied royalty rates and discount rates. The excess earnings approach estimates the present value of expected earnings in excess of a traditional return on business assets. For financial reporting purposes, intangible assets with finite lives are amortized over their applicable estimated useful lives in a manner that approximates the pattern of expected economic benefit from each intangible asset.

The calculation of the estimated fair value of goodwill and other acquired intangibles is performed primarily using an income approach and requires the use of significant estimates and assumptions that are highly subjective in nature, such as attrition rates, discount rates, future expected cash flows and market conditions. The most significant assumptions relate to the valuation of customer relationships. Our estimates are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. For more information on our accounting for goodwill and other acquired intangibles, including our impairment analysis policy, see Note 7.

Internal-use software, Property and Equipment

We capitalize certain costs associated with the development of internal-use software and the purchase of property and equipment. Software, property and equipment are carried at cost, net of accumulated depreciation and amortization. Amortization and depreciation commence during the month of our placement of the assets into use. Amortization and depreciation are calculated on a straight-line basis over the estimated useful life of the respective assets, typically from three to seven years, unless factors indicate a shorter useful life. Leasehold improvements are depreciated over the lesser of the estimated useful life of the asset improved or the remaining term of the lease. See Note 9 for additional information.

Deferred Policy Acquisition Costs

Incremental, direct costs associated with the successful acquisition of mortgage insurance policies, consisting of compensation, premium tax, and other policy issuance and underwriting expenses, are initially deferred and reported as deferred policy acquisition costs. Consistent with industry accounting practice, amortization of these costs for each underwriting year book of business is recognized in proportion to estimated gross profits over the estimated life of the policies.

Estimated gross profits are composed of earned premium, interest income, losses and LAE. Estimates of expected gross profit, including the Persistency Rate and loss development assumptions for each underwriting year used as a basis for amortization, are evaluated quarterly and the total amortization recorded to date is adjusted by a charge or credit to our consolidated statements of operations if actual experience or other evidence suggests that previous estimates should be revised. Considerable judgment is used in evaluating these estimates and the assumptions on which they are based. The use of different assumptions may have a significant effect on the amortization of deferred policy acquisition costs. Ceding commissions received under our reinsurance arrangements related to these costs are also deferred and accounted for using similar assumptions. See Notes 8 and 9 for additional information.

Earnings per Share

Basic net income per share is computed by dividing net income by the weighted-average number of common shares outstanding, while diluted net income per share is computed by dividing net income attributable to common stockholders by the sum of the weighted-average number of common shares outstanding and the weighted-average number of dilutive potential common shares. Dilutive potential common shares relate primarily to our share-based compensation arrangements. For all calculations, the determination of whether potential common shares are dilutive or anti-dilutive is based on net income.

Accounting for Share-Based Compensation

The stock-based compensation cost related to share-based equity instruments is measured based on the grant-date fair value at the date of issuance. For share-based awards with performance conditions related to our own operations, the expense

recognized is dependent on the probability of the performance measure being achieved. Compensation cost is generally recognized over the periods that an employee provides service in exchange for the award. See Note 15 for further information.

Recent Accounting Pronouncements

Accounting Standards Adopted During 2019

We adopted ASU 2016-02, Leases, on January 1, 2019. Most significantly, this update requires a lessee to recognize, as of the lease commencement date, a liability to make lease payments and an asset with respect to its right to use the underlying asset for the lease term. Upon adoption for contracts in effect as of January 1, 2019, we recorded a lease liability of \$73.5 million within other liabilities, and a right-of-use asset of \$49.4 million within other assets, corresponding to the lease liability as adjusted for deferred rent and unamortized allowances and incentives of \$24.1 million. We elected the optional transition method and the practical expedients for transitioning existing leases to the new standard as of the effective date. As a result of applying the practical expedients: (i) we did not reassess expired or existing contracts to determine if they contain additional leases; (ii) we did not reassess the lease classification for expired and existing leases; and (iii) we did not reassess initial direct costs for existing leases. Prior period amounts continue to be reported in accordance with our historic accounting under previous lease guidance. We do not have material sublease agreements. As of December 31, 2019, there were no leases that had not yet commenced but that created significant rights and obligations for us. See Note 13 for more information about our lease agreements.

We adopted ASU 2017-08, Receivables-Nonrefundable Fees and Other Costs, on January 1, 2019. The new standard requires certain premiums on purchased callable debt securities to be amortized to the earliest call date. The amortization period for callable debt securities purchased at a discount will not be impacted. The adoption of this update did not have a material effect on our financial statements and disclosures.

In August 2018, the FASB issued ASU 2018-15, Intangibles-Goodwill and Other-Internal-Use Software. This ASU requires the capitalization of implementation costs for activities performed in a cloud computing arrangement that is a service contract. The new standard aligns the accounting for implementation costs of hosting arrangements that are service contracts with the accounting for capitalizing internal-use software. This update is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. We elected to early adopt this update effective December 31, 2019. The adoption of this update did not have a material effect on our financial statements and disclosures.

Accounting Standards Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, Financial Instruments-Credit Losses, and issued subsequent amendments to the initial guidance. This ASU and the associated subsequent amendments require that financial assets measured at their amortized cost basis be presented at the net amount expected to be collected. Credit losses relating to our available-for-sale debt securities are to be recorded through an allowance for credit losses, rather than a write-down of the asset, with the amount of the allowance limited to the amount by which fair value is less than amortized cost. This allowance method will allow reversals of credit losses if the estimate of credit losses declines. This ASU will also affect certain of our accounts and notes receivable, including premiums receivable, and certain of our other assets, including reinsurance recoverables. However, this ASU is not applicable to the accounting for insurance losses and loss adjustment expenses. Due to the nature of our assets affected by this update, we do not expect it to have a material effect on our financial statements and disclosures. This update is effective for public companies for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. We will adopt this standard effective January 1, 2020 using the modified retrospective adoption approach. The adoption of this ASU is not expected to have a material effect on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-12, Financial Services-Insurance. The new standard: (i) requires that assumptions used to measure the liability for future policy benefits be reviewed at least annually; (ii) defines and simplifies the measurement of market risk benefits; (iii) simplifies the amortization of deferred acquisition costs; and (iv) enhances the required disclosures about long-duration contracts. This update is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. Early adoption is permitted. We are currently evaluating the impact on our financial statements and future disclosures as a result of this update.

In April 2019, the FASB issued ASU 2019-04, Codification Improvements related to Financial Instruments-Credit Losses, Derivatives and Hedging, and Financial Instruments. This update to the accounting standards regarding financial instruments and derivatives and hedging clarifies the accounting treatment for the measurement of credit losses and provides further clarification on previously issued updates. This update is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted for fiscal years beginning after December 15,

2018, including interim periods within those fiscal years. We will adopt this standard effective January 1, 2020 using the modified retrospective adoption approach. The adoption of this ASU is not expected to have a material effect on the Company's consolidated financial statements.

3. Net Income Per Share

The calculation of basic and diluted net income per share is as follows:

	Year Ended December 31,		
	2019	2018	2017
(In thousands, except per-share amounts)			
Net income—basic	\$ 672,309	\$ 606,011	\$ 121,088
Adjustment for dilutive Convertible Senior Notes due 2019, net of tax	—	—	(215)
Net income—diluted	<u>\$ 672,309</u>	<u>\$ 606,011</u>	<u>\$ 120,873</u>
Average common shares outstanding—basic	208,773	214,267	215,321
Dilutive effect of Convertible Senior Notes due 2017 and 2019	—	—	780
Dilutive effect of stock-based compensation arrangements (1)	1,567	4,286	4,305
Adjusted average common shares outstanding—diluted	<u>210,340</u>	<u>218,553</u>	<u>220,406</u>
Net income per share:			
Basic	\$ 3.22	\$ 2.83	\$ 0.56
Diluted	\$ 3.20	\$ 2.77	\$ 0.55

(1) The following number of shares of our common stock equivalents issued under our share-based compensation arrangements were not included in the calculation of diluted net income per share because they were anti-dilutive:

	Year Ended December 31,		
	2019	2018	2017
(In thousands)			
Shares of common stock equivalents	221	337	353

4. Segment Reporting

We have two strategic business segments that we manage separately—Mortgage Insurance and Services. Adjusted pretax operating income (loss) for each segment represents segment results on a standalone basis; therefore, inter-segment eliminations and reclassifications required for consolidated GAAP presentation have not been reflected. Inter-segment activities are recorded at market rates for segment reporting and eliminated in consolidation.

We allocate to our Mortgage Insurance segment: (i) corporate expenses based on the segment's forecasted annual percentage of total revenue, which approximates the estimated percentage of time spent on the segment; (ii) except as described below for periods prior to January 1, 2019, all interest expense; and (iii) all net investment income from corporate cash and investments. Effective January 1, 2019, Radian Group recapitalized the Services segment with a capital contribution that enabled the Services segment to repay the Clayton Intercompany Note and its accumulated allocated interest expense associated with the note, and thereafter, all interest expense is allocated to our Mortgage Insurance segment.

We allocate to our Services segment: (i) corporate expenses based on the segment's forecasted annual percentage of total revenue, which approximates the estimated percentage of time spent on the segment and (ii) until January 1, 2019, the allocated interest expense related to the Clayton Intercompany Note as described above.

With the exception of goodwill and other acquired intangible assets that relate to our Services segment, which are reviewed as part of our annual goodwill impairment assessment, we do not manage assets by segment.

Adjusted Pretax Operating Income (Loss)

Our senior management, including our Chief Executive Officer (Radian's chief operating decision maker), uses adjusted pretax operating income (loss) as our primary measure to evaluate the fundamental financial performance of each of Radian's business segments and to allocate resources to the segments. Adjusted pretax operating income (loss) is defined as pretax income (loss) from continuing operations excluding the effects of: (i) net gains (losses) on investments and other financial instruments; (ii) loss on extinguishment of debt; (iii) amortization and impairment of goodwill and other acquired intangible assets; and (iv) impairment of other long-lived assets and other non-operating items, such as gains (losses) from the sale of lines of business and acquisition-related expenses.

Although adjusted pretax operating income excludes certain items that have occurred in the past and are expected to occur in the future, the excluded items represent those that are: (i) not viewed as part of the operating performance of our primary activities or (ii) not expected to result in an economic impact equal to the amount reflected in pretax income. These adjustments, along with the reasons for their treatment, are described below.

- (1) *Net gains (losses) on investments and other financial instruments.* The recognition of realized investment gains or losses can vary significantly across periods as the activity is highly discretionary based on the timing of individual securities sales due to such factors as market opportunities, our tax and capital profile and overall market cycles. Unrealized gains and losses arise primarily from changes in the market value of our investments that are classified as trading or equity securities. These valuation adjustments may not necessarily result in realized economic gains or losses.

Trends in the profitability of our fundamental operating activities can be more clearly identified without the fluctuations of these realized and unrealized gains or losses and changes in fair value of other financial instruments. We do not view them to be indicative of our fundamental operating activities.

- (2) *Loss on extinguishment of debt.* Gains or losses on early extinguishment of debt and losses incurred to purchase our debt prior to maturity are discretionary activities that are undertaken in order to take advantage of market opportunities to strengthen our financial and capital positions; therefore, we do not view these activities as part of our operating performance. Such transactions do not reflect expected future operations and do not provide meaningful insight regarding our current or past operating trends.
- (3) *Amortization and impairment of goodwill and other acquired intangible assets.* Amortization of acquired intangible assets represents the periodic expense required to amortize the cost of acquired intangible assets over their estimated useful lives. Acquired intangible assets are also periodically reviewed for potential impairment, and impairment adjustments are made whenever appropriate. We do not view these charges as part of the operating performance of our primary activities.
- (4) *Impairment of other long-lived assets and other non-operating items.* Includes activities that we do not view to be indicative of our fundamental operating activities, such as: (i) gains (losses) from the sale of lines of business and (ii) acquisition-related expenses.

The reconciliation of adjusted pretax operating income (loss) for our reportable segments to consolidated pretax income is as follows:

<u>(In thousands)</u>	December 31,		
	2019	2018	2017
Adjusted pretax operating income (loss):			
Mortgage insurance	\$ 868,898	\$ 772,614	\$ 651,015
Services (1)	(14,263)	(27,119)	(33,840)
Net gains (losses) on investments and other financial instruments	51,719	(42,476)	3,621
Loss on extinguishment of debt	(22,738)	—	(51,469)
Impairment of goodwill	(4,828)	—	(184,374)
Amortization and impairment of other acquired intangible assets	(22,288)	(12,429)	(27,671)
Impairment of other long-lived assets and other non-operating items	(7,507)	(6,404)	(10,545)
Consolidated pretax income	\$ 848,993	\$ 684,186	\$ 346,737

(1) Includes inter-segment revenues as reflected in the tables below.

Revenue and Other Segment Information

The following tables reconcile reportable segment revenues to consolidated revenues and summarize interest expense, depreciation expense, allocation of corporate operating expenses and adjusted pretax operating income for our reportable segments as follows:

<u>(In thousands)</u>	December 31, 2019					
	Mortgage Insurance	Services	Reportable Segment Total	Inter-segment	Adjustments	Consolidated Total
Premiums earned	\$1,134,214	\$ 11,135	\$1,145,349	\$ —	\$ —	\$1,145,349
Services revenue	—	158,629	158,629	(4,033)	—	154,596
Net investment income	171,116	680	171,796	—	—	171,796
Other income	3,495	—	3,495	—	—	3,495
Add: Net gains (losses) on investments and other financial instruments	—	—	—	—	51,719	51,719
Total revenues	\$1,308,825	\$ 170,444	\$1,479,269	\$ (4,033)	\$ 51,719	\$1,526,955
Other segment information:						
Interest expense	\$ 56,310	\$ —	\$ 56,310			
Depreciation	15,317	3,684	19,001			
Allocation of corporate operating expenses (1)	104,078	16,943	121,021			

(1) Includes additional depreciation expense of \$1.6 million, \$0.2 million and \$1.8 million allocated to Mortgage Insurance, Services and Reportable Segment Total, respectively.

December 31, 2018						
<u>(In thousands)</u>	<u>Mortgage Insurance</u>	<u>Services</u>	<u>Reportable Segment Total</u>	<u>Inter-segment</u>	<u>Adjustments</u>	<u>Consolidated Total</u>
Premiums earned.....	\$1,006,721	\$ 7,286	\$1,014,007	\$ —	\$ —	\$1,014,007
Services revenue.....	—	148,217	148,217	(3,245)	—	144,972
Net investment income.....	152,102	373	152,475	—	—	152,475
Other income.....	2,794	1,234	4,028	—	—	4,028
Add: Net gains (losses) on investments and other financial instruments.....	—	—	—	—	(42,476)	(42,476)
Total revenues.....	<u>\$1,161,617</u>	<u>\$ 157,110</u>	<u>\$1,318,727</u>	<u>\$ (3,245)</u>	<u>\$ (42,476)</u>	<u>\$1,273,006</u>
Other segment information:						
Interest expense.....	\$ 43,685	\$ 17,805	\$ 61,490			
Depreciation.....	15,229	3,563	18,792			
Allocation of corporate operating expenses (1).....	80,134	11,974	92,108			

(1) Includes additional depreciation expense of \$0.5 million, \$0.1 million and \$0.6 million allocated to Mortgage Insurance, Services and Reportable Segment Total, respectively.

December 31, 2017						
<u>(In thousands)</u>	<u>Mortgage Insurance</u>	<u>Services</u>	<u>Reportable Segment Total</u>	<u>Inter-segment</u>	<u>Adjustments</u>	<u>Consolidated Total</u>
Premiums earned.....	\$ 932,773	\$ —	\$ 932,773	\$ —	\$ —	\$ 932,773
Services revenue.....	—	161,833	161,833	(6,730)	—	155,103
Net investment income.....	127,248	—	127,248	—	—	127,248
Other income.....	2,886	—	2,886	—	—	2,886
Add: Net gains (losses) on investments and other financial instruments.....	—	—	—	—	3,621	3,621
Total revenues.....	<u>\$1,062,907</u>	<u>\$ 161,833</u>	<u>\$1,224,740</u>	<u>\$ (6,730)</u>	<u>\$ 3,621</u>	<u>\$1,221,631</u>
Other segment information:						
Interest expense.....	\$ 45,016	\$ 17,745	\$ 62,761			
Depreciation.....	13,315	3,758	17,073			
Allocation of corporate operating expenses (1).....	55,441	14,319	69,760			

(1) Includes additional depreciation expense of \$0.2 million, \$0.1 million and \$0.3 million allocated to Mortgage Insurance, Services and Reportable Segment Total, respectively.

The table below represents the disaggregation of services revenues by revenue type:

<u>(In thousands)</u>	<u>Year Ended December 31,</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Services revenue			
Mortgage Services (1)	\$ 74,007	\$ 76,050	\$ 77,121
Real Estate Services	64,945	60,059	54,649
Title Services	15,644	8,863	23,333
Total services revenue	<u>\$ 154,596</u>	<u>\$ 144,972</u>	<u>\$ 155,103</u>

(1) Includes \$48.4 million, \$50.8 million and \$46.1 million for the years ended December 31, 2019, 2018 and 2017, respectively, related to Clayton, which was sold in January 2020.

Our Services segment revenues are recognized over time and measured each period based on the progress to date as services are performed and made available to customers. Our contracts with customers, including payment terms, are generally short-term in nature; therefore, any impact related to timing is immaterial. Revenue recognized related to services made available to customers and billed is reflected in accounts and notes receivable. Revenue recognized related to services performed and not yet billed is recorded in unbilled receivables and reflected in other assets. We have no material bad-debt expense. The following represents balances related to service revenue contracts as of the dates indicated:

<u>(In thousands)</u>	<u>December 31, 2019 (1)</u>	<u>December 31, 2018</u>
Accounts receivable	\$ 10,773	\$ 15,461
Unbilled receivables	13,772	19,917
Deferred revenues	1,784	3,204

(1) Excludes \$10.5 million and \$3.9 million of accounts receivable and unbilled receivables, respectively, that are related to Clayton and classified as held-for-sale.

There was no single customer that accounted for more than 10% of NIW or more than 10% of our consolidated revenues (excluding net gains (losses) on investments and other financial instruments) in 2019, 2018 or 2017.

5. Fair Value of Financial Instruments

The following is a list of assets that are measured at fair value by hierarchy level as of December 31, 2019:

<u>(In thousands)</u>	<u>Level I</u>	<u>Level II</u>	<u>Total</u>
Assets at fair value			
Investments:			
Fixed-maturities available for sale:			
U.S. government and agency securities	\$ 143,884	\$ 35,700	\$ 179,584
State and municipal obligations	—	119,994	119,994
Corporate bonds and notes	—	2,237,611	2,237,611
RMBS	—	779,354	779,354
CMBS	—	608,015	608,015
Other ABS	—	759,129	759,129
Foreign government and agency securities	—	5,224	5,224
Total fixed-maturities available for sale	<u>143,884</u>	<u>4,545,027</u>	<u>4,688,911</u>
Trading securities:			
State and municipal obligations	—	118,949	118,949
Corporate bonds and notes	—	147,232	147,232
RMBS	—	16,180	16,180
CMBS	—	34,789	34,789
Total trading securities	<u>—</u>	<u>317,150</u>	<u>317,150</u>
Equity securities	<u>124,009</u>	<u>6,212</u>	<u>130,221</u>
Short-term investments:			
U.S. government and agency securities	127,152	—	127,152
State and municipal obligations	—	21,475	21,475
Money market instruments	202,461	—	202,461
Corporate bonds and notes	—	20,298	20,298
Other investments (1)	—	147,007	147,007
Total short-term investments	<u>329,613</u>	<u>188,780</u>	<u>518,393</u>
Total investments at fair value (2)	<u>597,506</u>	<u>5,057,169</u>	<u>5,654,675</u>
Other assets:			
Loaned securities: (3)			
U.S. government and agency securities	35,309	—	35,309
Corporate bonds and notes	—	3,669	3,669
Equity securities	27,464	—	27,464
Total assets at fair value (2)	<u>\$ 660,279</u>	<u>\$ 5,060,838</u>	<u>\$ 5,721,117</u>

(1) Comprising short-term certificates of deposit and commercial paper.

(2) Does not include other invested assets of \$2.6 million that are primarily invested in limited partnership investments valued using the net asset value as a practical expedient and \$1.5 million invested in a private convertible promissory note.

(3) Securities loaned to third-party borrowers under securities lending agreements are classified as other assets in our consolidated balance sheets. See Note 6 for more information.

The following is a list of assets that are measured at fair value by hierarchy level as of December 31, 2018:

<u>(In thousands)</u>	<u>Level I</u>	<u>Level II</u>	<u>Total</u>
Assets at fair value			
Investments:			
Fixed-maturities available for sale:			
U.S. government and agency securities	\$ 55,658	\$ 28,412	\$ 84,070
State and municipal obligations	—	138,313	138,313
Corporate bonds and notes	—	2,222,473	2,222,473
RMBS	—	332,142	332,142
CMBS	—	539,915	539,915
Other ABS	—	704,662	704,662
Total fixed-maturities available for sale	<u>55,658</u>	<u>3,965,917</u>	<u>4,021,575</u>
Trading securities:			
State and municipal obligations	—	168,359	168,359
Corporate bonds and notes	—	228,152	228,152
RMBS	—	21,082	21,082
CMBS	—	51,478	51,478
Total trading securities	<u>—</u>	<u>469,071</u>	<u>469,071</u>
Equity securities	<u>126,607</u>	<u>3,958</u>	<u>130,565</u>
Short-term investments:			
U.S. government and agency securities	133,657	—	133,657
State and municipal obligations	—	18,070	18,070
Money market instruments	95,132	—	95,132
Corporate bonds and notes	—	105,625	105,625
Other ABS	—	806	806
Other investments (1)	—	175,113	175,113
Total short-term investments	<u>228,789</u>	<u>299,614</u>	<u>528,403</u>
Total investments at fair value (2)	<u>411,054</u>	<u>4,738,560</u>	<u>5,149,614</u>
Other assets:			
Loaned securities: (3)			
U.S. government and agency securities	9,987	—	9,987
Corporate bonds and notes	—	7,818	7,818
Equity securities	10,055	—	10,055
Total assets at fair value (2)	<u>\$ 431,096</u>	<u>\$ 4,746,378</u>	<u>\$ 5,177,474</u>

- (1) Comprising short-term certificates of deposit and commercial paper.
- (2) Does not include other invested assets of \$3.4 million that are primarily invested in limited partnerships valued using the net asset value as a practical expedient.
- (3) Securities loaned to third-party borrowers under securities lending agreements are classified as other assets in our consolidated balance sheets. See Note 6 for more information.

At December 31, 2019 and 2018, there were no material Level III assets measured at fair value, and no Level III liabilities. There were no investment transfers to or from Level III for the years ended December 31, 2019 and 2018. Activity

related to Level III assets and liabilities (including realized and unrealized gains and losses, purchases, sales, issuances, settlements and transfers) was immaterial for the years ended December 31, 2019 and 2018.

Valuation Methodologies for Assets Measured at Fair Value

The following are descriptions of our valuation methodologies for financial assets measured at fair value.

We are responsible for the determination of the value of all investments carried at fair value and the supporting methodologies and assumptions. To assist us in this responsibility, we utilize independent third-party valuation service providers to gather, analyze and interpret market information and estimate fair values based upon relevant methodologies and assumptions for various asset classes and individual securities. We perform monthly quantitative and qualitative analyses on the prices received from third parties to determine whether the prices are reasonable estimates of fair value. Our analysis includes: (i) a review of the methodology used by third-party pricing services; (ii) a comparison of pricing services' valuations to other independent sources; (iii) a review of month-to-month price fluctuations; and (iv) a comparison of actual purchase and sale transactions with valuations received from third parties. These processes are designed to ensure that our investment values are accurately recorded, that the data inputs and valuation techniques utilized are appropriate and consistently applied and that the assumptions are reasonable and consistent with the objective of determining fair value.

U.S. Government and Agency Securities. The fair value of U.S. government and agency securities is estimated using observed market transactions, including broker-dealer quotes and actual trade activity as a basis for valuation. U.S. government and agency securities are categorized in either Level I or Level II of the fair value hierarchy.

State and Municipal Obligations. The fair value of state and municipal obligations is estimated using recent transaction activity, including market observations. Valuation models are used, which incorporate bond structure, yield curve, credit spreads and other factors. These securities are generally categorized in Level II of the fair value hierarchy or in Level III when market-based transaction activity is unavailable.

Money Market Instruments. The fair value of money market instruments is based on daily prices, which are published and available to all potential investors and market participants. As such, these securities are categorized in Level I of the fair value hierarchy.

Corporate Bonds and Notes. The fair value of corporate bonds and notes is estimated using recent transaction activity, including market observations. Spread models are used that incorporate issuer and structure characteristics, such as credit risk and early redemption features, where applicable. These securities are generally categorized in Level II of the fair value hierarchy or in Level III when market-based transaction activity is unavailable.

RMBS, CMBS, and Other ABS. The fair value of these instruments is estimated based on prices of comparable securities and spreads and observable prepayment speeds. These securities are generally categorized in Level II of the fair value hierarchy or in Level III when market-based transaction activity is unavailable. The fair value of any Level III securities is generally estimated by discounting estimated future cash flows.

Foreign Government and Agency Securities. The fair value of foreign government and agency securities is estimated using observed market yields used to create a maturity curve and observed credit spreads from market makers and broker-dealers. These securities are categorized in Level II of the fair value hierarchy.

Equity Securities. The fair value of these securities is generally estimated using observable market data in active markets or bid prices from market makers and broker-dealers. Generally, these securities are categorized in Level I or II of the fair value hierarchy, as observable market data are readily available. From time to time, certain equity securities may be categorized in Level III of the fair value hierarchy due to a lack of market-based transaction data or the use of model-based valuations.

Other Investments. These securities primarily consist of commercial paper and short-term certificates of deposit, which are categorized in Level II of the fair value hierarchy. The fair value of these investments is estimated using market data for comparable instruments of similar maturity and average yield.

Other Fair Value Disclosure

The carrying value and estimated fair value of other selected liabilities not carried at fair value in our consolidated balance sheets were as follows as of the dates indicated:

<u>(In thousands)</u>	December 31, 2019		December 31, 2018	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Liabilities:				
Senior notes	\$ 887,110	\$ 949,500	\$ 1,030,348	\$ 1,007,687
FHLB advances	134,875	135,997	82,532	82,899

The fair value of our senior notes is estimated based on the quoted market prices. The fair value of our FHLB advances is estimated based on expected cash flows for similar borrowings. These liabilities are categorized in Level II of the fair value hierarchy. See Note 12 for further information.

6. Investments

Available for Sale Securities

Our available for sale securities within our investment portfolio consisted of the following as of the dates indicated:

(In thousands)	December 31, 2019			
	Amortized Cost	Fair Value	Gross Unrealized Gains	Gross Unrealized Losses
Fixed-maturities available for sale:				
U.S. government and agency securities	\$ 198,613	\$ 199,928	\$ 2,048	\$ 733
State and municipal obligations	112,003	119,994	8,032	41
Corporate bonds and notes	2,136,819	2,241,280	106,189	1,728
RMBS	766,429	779,354	14,452	1,527
CMBS	593,647	608,015	14,993	625
Other ABS	760,785	759,129	2,018	3,674
Foreign government and agency securities	5,091	5,224	133	—
Total securities available for sale, including loaned securities	<u>4,573,387</u>	<u>4,712,924</u>	<u>\$ 147,865</u>	<u>\$ 8,328</u>
Less: loaned securities	<u>23,853</u>	<u>24,013</u>		
Total fixed-maturities available for sale	<u>\$ 4,549,534</u>	<u>\$ 4,688,911</u>		
	December 31, 2018			
(In thousands)	Amortized Cost	Fair Value	Gross Unrealized Gains	Gross Unrealized Losses
Fixed-maturities available for sale:				
U.S. government and agency securities	\$ 85,532	\$ 84,070	\$ 46	\$ 1,508
State and municipal obligations	138,022	138,313	2,191	1,900
Corporate bonds and notes	2,288,720	2,229,885	5,053	63,888
RMBS	334,843	332,142	1,785	4,486
CMBS	546,729	539,915	544	7,358
Other ABS	712,748	704,662	814	8,900
Total securities available for sale, including loaned securities	<u>4,106,594</u>	<u>4,028,987</u>	<u>\$ 10,433</u>	<u>\$ 88,040</u>
Less: loaned securities	<u>7,632</u>	<u>7,412</u>		
Total fixed-maturities available for sale	<u>\$ 4,098,962</u>	<u>\$ 4,021,575</u>		

Gross Unrealized Losses and Related Fair Values of Available for Sale Securities

For securities deemed “available for sale” and that are in an unrealized loss position, the following tables show the gross unrealized losses and fair values, aggregated by investment category and length of time that individual securities have been in a continuous unrealized loss position, as of the dates indicated. Included in the amounts as of December 31, 2019 and 2018, are loaned securities under securities lending agreements that are classified as other assets in our consolidated balance sheets, as further described below.

(\$ in thousands) Description of Securities	December 31, 2019								
	Less Than 12 Months			12 Months or Greater			Total		
	# of securities	Fair Value	Unrealized Losses	# of securities	Fair Value	Unrealized Losses	# of securities	Fair Value	Unrealized Losses
U.S. government and agency securities	2	\$ 26,142	\$ 731	2	\$ 2,529	\$ 2	4	\$ 28,671	\$ 733
State and municipal obligations	1	3,959	41	—	—	—	1	3,959	41
Corporate bonds and notes	25	110,871	1,728	—	—	—	25	110,871	1,728
RMBS	27	184,378	535	16	36,192	992	43	220,570	1,527
CMBS	36	109,589	478	8	6,346	147	44	115,935	625
Other ABS	63	225,944	670	44	209,661	3,004	107	435,605	3,674
Total	<u>154</u>	<u>\$ 660,883</u>	<u>\$ 4,183</u>	<u>70</u>	<u>\$ 254,728</u>	<u>\$ 4,145</u>	<u>224</u>	<u>\$ 915,611</u>	<u>\$ 8,328</u>

(\$ in thousands) Description of Securities	December 31, 2018								
	Less Than 12 Months			12 Months or Greater			Total		
	# of securities	Fair Value	Unrealized Losses	# of securities	Fair Value	Unrealized Losses	# of securities	Fair Value	Unrealized Losses
U.S. government and agency securities	2	\$ 27,415	\$ 796	8	\$ 23,476	\$ 712	10	\$ 50,891	\$ 1,508
State and municipal obligations	12	41,263	955	16	39,982	945	28	81,245	1,900
Corporate bonds and notes	330	1,208,430	36,284	126	601,533	27,604	456	1,809,963	63,888
RMBS	15	92,315	782	28	77,395	3,704	43	169,710	4,486
CMBS	62	328,696	3,973	33	125,728	3,385	95	454,424	7,358
Other ABS	129	503,109	7,917	26	89,628	983	155	592,737	8,900
Total	<u>550</u>	<u>\$2,201,228</u>	<u>\$ 50,707</u>	<u>237</u>	<u>\$ 957,742</u>	<u>\$ 37,333</u>	<u>787</u>	<u>\$3,158,970</u>	<u>\$ 88,040</u>

Although we held available for sale securities in an unrealized loss position as of December 31, 2019, we did not consider those securities to be other-than-temporarily impaired as of such date. For all investment categories, the unrealized losses of 12 months or greater duration as of December 31, 2019 were generally caused by interest rate or credit spread movements since the purchase date, and as such, we expect to recover the amortized cost basis of these securities. As of December 31, 2019, we did not have the intent to sell any available for sale securities in an unrealized loss position, and we determined that it is more likely than not that we will not be required to sell the securities before recovery of their cost basis, which may be at maturity; therefore, we did not consider these investments to be other-than-temporarily impaired at December 31, 2019.

Other-Than-Temporary Impairment Activity. To the extent we determine that a security is deemed to have had an other-than-temporary impairment, an impairment loss is recognized. While there were no other-than-temporary impairment losses in earnings during the year ended December 31, 2019, we recognized such losses during the years ended December 31, 2018 and 2017. There were no other-than-temporary impairment losses recognized in accumulated other comprehensive income (loss) for any of those periods.

For the year ended December 31, 2018, we recorded other-than-temporary impairment losses in earnings of \$1.7 million due to our intent to sell certain securities. For the year ended December 31, 2017, we recorded other-than-temporary impairment losses in earnings of \$1.4 million, due primarily to credit deterioration in certain securities.

Securities Lending Agreements

During the third quarter of 2017, we commenced participation in a securities lending program whereby we loan certain securities in our investment portfolio to third parties, generally large banks, for short periods of time. These securities lending agreements are collateralized financing arrangements whereby we transfer securities to third parties through an intermediary in exchange for cash or other securities. However, pursuant to the terms of these agreements, we maintain effective control over all loaned securities. Although we report such securities at fair value within other assets in our consolidated balance sheets, rather than in investments, the detailed information provided in this Note includes these securities. See Note 9 for additional information.

Under our securities lending agreements, the borrower is required to provide to us collateral, consisting of cash or securities, in amounts generally equal to or exceeding: (i) 102% of the value of the loaned securities (105% in the case of foreign securities) or (ii) another agreed-upon percentage not less than 100% of the market value of the loaned securities. Any cash collateral we receive may be invested in liquid assets. Cash collateral, which is reinvested for our benefit by the intermediary in accordance with the investment guidelines contained in the securities lending and collateral agreements, is reflected in short-term investments, with an offsetting liability recognized in other liabilities for the obligation to return the cash collateral. Securities collateral we receive is held on deposit for the borrower's benefit and we may not transfer or loan such securities collateral unless the borrower is in default. Therefore, such securities collateral is not reflected in our consolidated financial statements given that the risks and rewards of ownership are not transferred to us from the borrowers.

Fees received and paid in connection with securities lending agreements are recorded in net investment income and interest expense, respectively, on the consolidated statements of operations.

All of our securities lending agreements are classified as overnight and revolving. Securities collateral on deposit with us from third-party borrowers totaling \$42.4 million and \$16.8 million as of December 31, 2019 and December 31, 2018, respectively, may not be transferred or re-pledged unless the third-party borrower is in default, and is therefore not reflected in our consolidated financial statements.

Net Investment Income

Net investment income consisted of:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Investment income:			
Fixed-maturities	\$ 155,104	\$ 141,552	\$ 122,890
Equity securities	7,028	7,157	4,318
Short-term investments	17,255	10,270	5,453
Other	545	976	987
Gross investment income	179,932	159,955	133,648
Investment expenses	(8,136)	(7,480)	(6,400)
Net investment income	<u>\$ 171,796</u>	<u>\$ 152,475</u>	<u>\$ 127,248</u>

Net Gains (Losses) on Investments

Net gains (losses) on investments consisted of:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Net realized gains (losses) on investments:			
Fixed-maturities available for sale (1)	\$ 11,262	\$ (11,256)	\$ (3,014)
Trading securities	(303)	(1,840)	(5,995)
Equity securities	(719)	532	368
Other investments	603	470	38
Net realized gains (losses) on investments	10,843	(12,094)	(8,603)
Other-than-temporary impairment losses	—	(1,744)	(1,420)
Net unrealized gains (losses) on investments (2)	33,220	(27,287)	13,230
Total net gains (losses) on investments	<u>\$ 44,063</u>	<u>\$ (41,125)</u>	<u>\$ 3,207</u>

(1) Components of net realized gains (losses) on fixed-maturities available for sale include:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Gross investment gains from sales and redemptions	\$ 17,663	\$ 1,986	\$ 6,052
Gross investment losses from sales and redemptions	(6,401)	(13,242)	(9,066)

(2) These amounts include unrealized gains (losses) on investment securities other than securities available for sale. For 2017, the unrealized gains (losses) on investments exclude the net change in unrealized gains and losses on equity securities. Prior to the implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, the unrealized gains (losses) associated with equity securities were classified in accumulated other comprehensive income.

The net changes in unrealized gains (losses) recognized in earnings on investments that were still held at each period-end were as follows:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Net unrealized gains (losses) on investments still held:			
Trading securities	\$ 16,346	\$ (16,281)	\$ 8,945
Equity securities (1)	11,906	(8,886)	—
Other investments	(174)	447	(118)
Net unrealized gains (losses) on investments still held	<u>\$ 28,078</u>	<u>\$ (24,720)</u>	<u>\$ 8,827</u>

(1) Prior to the implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, the unrealized gains (losses) associated with equity securities were classified in accumulated other comprehensive income.

Change in Unrealized Gains (Losses) Recorded in Accumulated Other Comprehensive Income (Loss)

The change in unrealized gains (losses) recorded in accumulated other comprehensive income (loss) consisted of the following:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Fixed-maturities:			
Unrealized holding gains (losses) arising during the period, net of tax	\$ 180,441	\$ (97,356)	\$ 32,147
Less reclassification adjustment for net gains (losses) included in net income (loss), net of tax	8,897	(10,270)	(2,556)
Net unrealized gains (losses) on investments, net of tax	<u>\$ 171,544</u>	<u>\$ (87,086)</u>	<u>\$ 34,703</u>
Equities (1):			
Unrealized holding gains (losses) arising during the period, net of tax	\$ —	\$ —	\$ (244)
Less reclassification adjustment for net gains (losses) included in net income (loss), net of tax	—	—	(86)
Net unrealized gains (losses) on investments, net of tax	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (158)</u>

- (1) Prior to our implementation of the update to the standard for the accounting of financial instruments effective January 1, 2018, the unrealized losses associated with equity securities were classified in accumulated other comprehensive income. Effective January 1, 2018, we measure our equity investments at fair value, with changes in fair value recognized in net income.

Contractual Maturities

The contractual maturities of fixed-maturities available for sale were as follows:

<u>(In thousands)</u>	December 31, 2019	
	Amortized Cost	Fair Value
Due in one year or less	\$ 146,985	\$ 147,541
Due after one year through five years (1)	834,096	852,660
Due after five years through 10 years (1)	1,062,725	1,121,536
Due after 10 years (1)	408,720	444,689
RMBS (2)	766,429	779,354
CMBS (2)	593,647	608,015
Other ABS (2)	760,785	759,129
Total	<u>4,573,387</u>	<u>4,712,924</u>
Less: loaned securities	23,853	24,013
Total fixed-maturities available for sale	<u>\$ 4,549,534</u>	<u>\$ 4,688,911</u>

- (1) Actual maturities may differ as a result of calls before scheduled maturity.
(2) RMBS, CMBS, and Other ABS are shown separately, as they are not due at a single maturity date.

Other

For the years ended December 31, 2019, 2018 and 2017, we did not transfer any securities to or from the available for sale or trading categories.

Our fixed-maturities available for sale include securities totaling \$16.8 million and \$17.6 million at December 31, 2019 and 2018, respectively, on deposit and serving as collateral with various state regulatory authorities. Our fixed-maturities available for sale also include securities serving as collateral for our FHLB advances. See Note 12 for additional information about our FHLB advances.

7. Goodwill and Other Acquired Intangible Assets, Net

All of our goodwill and other acquired intangible assets relate to our Services segment. The purchase price allocation for the acquisition of Five Bridges in December 2018 was finalized in the first quarter of 2019. In comparison to the preliminary fair value amounts recorded as of December 31, 2018, the final calculations resulted in an increase in goodwill of \$0.5 million and a decrease in other acquired intangible assets of \$0.5 million.

The following table shows the changes in the carrying amount of goodwill as of and for the years ended December 31, 2019 and 2018:

(In thousands)	Goodwill	Accumulated Impairment Losses	Net
Balance at December 31, 2017	\$ 197,391	\$ (186,469)	\$ 10,922
Goodwill acquired.	3,170	—	3,170
Balance at December 31, 2018	200,561	(186,469)	14,092
Goodwill acquired.	538	—	538
Impairment losses	—	(4,828)	(4,828)
Balance at December 31, 2019	<u>\$ 201,099</u>	<u>\$ (191,297)</u>	<u>\$ 9,802</u>

The following is a summary of the gross and net carrying amounts and accumulated amortization (including impairment) of our other acquired intangible assets as of the periods indicated:

(In thousands)	December 31, 2019 (1)		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Client relationships	\$ 43,550	\$ (27,269)	\$ 16,281
Technology	8,435	(6,789)	1,646
Trade name and trademarks.	480	(404)	76
Licenses	463	(81)	382
Total	<u>\$ 52,928</u>	<u>\$ (34,543)</u>	<u>\$ 18,385</u>

(In thousands)	December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Client relationships	\$ 84,000	\$ (48,227)	\$ 35,773
Technology	17,362	(13,141)	4,221
Trade name and trademarks.	8,340	(3,864)	4,476
Non-competition agreements.	185	(177)	8
Licenses	463	(35)	428
Total	<u>\$ 110,350</u>	<u>\$ (65,444) (2)</u>	<u>\$ 44,906</u>

- (1) Excludes total gross carrying amount and accumulated amortization (including impairment) related to Clayton of \$60.9 million and \$57.2 million, respectively, which were reclassified to assets held-for-sale and included in other assets on our consolidated balance sheets at December 31, 2019.
- (2) Includes accumulated impairment charges of \$15.8 million as of December 31, 2018, which were related entirely to Clayton.

For the years ended December 31, 2019, 2018 and 2017, amortization expense was \$8.6 million, \$12.4 million and \$11.8 million, respectively. The estimated aggregate expense for 2020 and thereafter is as follows:

<u>(In thousands)</u>	
2020	\$ 3,880
2021	3,516
2022	3,463
2023	3,428
2024	3,343
Thereafter	755
Total	<u>\$ 18,385</u>

Impairment Analysis

2019 Activity

As described below, in 2017, we undertook a strategic review of our Services business and made several decisions with respect to the business strategy that were designed to reposition this business to drive future growth and profitability. As a further step in this strategic repositioning, we initiated a process in 2019 to evaluate a potential sale of Clayton, through which we provided mortgage services related to loan acquisition, RMBS securitization and distressed asset reviews and servicer and loan surveillance services. This sale was completed in January 2020.

We report an asset group as held for sale when: (i) management is committed to a formal plan to sell the assets; (ii) the asset group is available for immediate sale; (iii) it is being actively marketed at a price that is reasonable in relation to its fair value; (iv) there is an active program to locate a buyer and other actions required to complete the plan to sell the asset have been initiated; (v) the sale is probable and expected to be completed within one year; and (vi) it is deemed unlikely that significant changes to the plan will be made or that the plan will be withdrawn. Based on developments in the fourth quarter of 2019, we determined that the asset group associated with the sale of Clayton met the criteria to be reclassified as held for sale as of December 31, 2019.

An asset group classified as held for sale is reflected at the lower of its carrying amount or estimated fair value less cost to sell. If the carrying amount of the business exceeds its estimated fair value, a loss is recognized. Due to the reclassification as held for sale of the asset group associated with the sale of Clayton, we recognized an impairment charge of \$4.8 million for goodwill allocated to this asset group. The allocation was based on the estimated relative indicated fair value of the Clayton asset group and the remaining Services reporting unit. In addition, we recognized an impairment of other acquired intangible assets for \$13.7 million and reclassified the remaining other acquired intangible assets balance associated with the asset group of \$3.7 million as held for sale as of December 31, 2019.

Assets and liabilities related to Clayton classified as held for sale are presented in other assets and other liabilities, respectively, in the consolidated balance sheets in the period in which the business is classified as held for sale. See Notes 4 and 9 for additional detail on assets held for sale as of December 31, 2019.

We generally perform our annual goodwill impairment test during the fourth quarter of each year, using balances as of the prior quarter. Following the reclassification to held for sale of allocated goodwill and other acquired intangible assets and the related impairment recognized, we elected to perform a qualitative impairment analysis for the remaining goodwill and other acquired intangible assets in the fourth quarter of 2019. The qualitative analysis requires us to assess all relevant events and circumstances that could affect the significant inputs used to determine the fair value of the reporting unit. We considered factors such as: (i) our recent impairment of goodwill and other acquired intangible assets related to the sale of Clayton and (ii) the increase in and timing of revenues during the third and fourth quarters of 2019 for the remaining reporting unit (as compared to the forecasted amounts for the same periods), including the impact of higher margin business. Based on our qualitative assessment in the fourth quarter of 2019, we concluded that it is not “more likely than not” that the fair value of the remaining Services reporting unit is less than its carrying amount as of December 31, 2019. In addition, based on our analysis, there was no impairment indicated for the remaining other acquired intangible assets, as the carrying amounts were estimated to be recoverable from future cash flows.

2018 Activity

As part of our annual goodwill impairment assessment in 2018, which was conducted in the fourth quarter of 2018, we estimated the fair value of the reporting unit using primarily an income approach and, to a lesser extent, a market approach. The key factor in our fair value analysis was forecasted future cash flows. We considered both positive and negative factors and concluded that, after considering all of the factors and evidence available, there was no impairment of goodwill as of December 31, 2018 because the estimated fair value of the reporting unit exceeded our carrying amount.

As of December 31, 2018, we also evaluated the recoverability of our other acquired intangible assets. Factors affecting the estimated fair value of our goodwill were also considered in estimating the recoverability of our other acquired intangible assets. Based on our analysis, there was no impairment indicated for other acquired intangible assets, as the carrying amounts were estimated to be recoverable from future cash flows.

2017 Activity

Our Chief Executive Officer joined Radian in March 2017 and initiated a review to evaluate the strategic direction of the Services segment. Based on this strategic review, in the second quarter of 2017, we made several decisions with respect to business strategy for the segment in order to reposition the Services business to drive future growth and profitability. We determined to: (i) discontinue certain initiatives and (ii) shift the strategy of the Services segment to focus on core products and services that were expected to have higher growth potential, to produce more predictable, recurring revenue streams over time and to better align with our market expertise and the needs of our customers.

During the second quarter of 2017, the Services segment performed below forecasted levels. The anticipated business and growth opportunities for certain business lines in our Services segment had been impacted by: (i) market demand, which was lower than anticipated; (ii) increased competition, including with respect to product alternatives and pricing; and (iii) delays in the realization of efficiencies and margin improvements associated with certain technology initiatives. The impact of the observed market trends, which we expected to continue, together with our strategic decisions in 2017 discussed above, resulted in changes to our expected product mix and the expected growth rates associated with various initiatives, which in turn generated material reductions to our forecasted net cash flows. As a result of the quantitative goodwill analysis, we recorded an impairment charge of \$184.4 million for the three months ended June 30, 2017, to reduce the carrying amount of the Services segment to its estimated fair value. Prior to finalizing this amount, we also evaluated the recoverability of the segment's other acquired intangible assets and recorded impairment charges of \$15.8 million related to the Services segment's other acquired intangible assets.

During the fourth quarter of 2017, we elected to perform a qualitative annual goodwill impairment analysis, which requires us to assess all relevant events and circumstances that could affect the significant inputs used to determine the fair value of the reporting unit. We considered factors such as: (i) the increase in and timing of revenues during the third and fourth quarters of 2017 (as compared to the forecasted amounts for the same periods); (ii) the impact to projected cash flows, a significant input used to determine the fair value of the reporting unit, associated with the TCJA enacted in the fourth quarter of 2017; (iii) our recent interim goodwill impairment test and recognition of impairment charges; and (iv) the January 2020 sale of a business line. Based on our qualitative assessment in the fourth quarter of 2017, we concluded that it was not "more likely than not" that the fair value of the Services reporting unit was less than its carrying amount as of December 31, 2017.

For additional information on our accounting policies for goodwill and other acquired intangible assets, see Note 2.

8. Reinsurance

In our mortgage insurance and title insurance businesses, we use reinsurance as part of our risk distribution strategy, including to manage our capital position and risk profile. The reinsurance arrangements for our mortgage insurance business include premiums ceded under the QSR Program, the Single Premium QSR Program, and the Excess-of-Loss Program. The Company's related PMIERS credit under these programs are subject to GSE approval.

The effect of all of our reinsurance programs on our net income is as follows:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Net premiums written—insurance:			
Direct	\$ 1,132,338	\$ 1,089,720	\$ 1,032,735
Assumed	10,379 (1)	6,901 (1)	25
Ceded (2)	(56,132)	(98,314)	(214,343)
Net premiums written—insurance	<u>\$ 1,086,585</u>	<u>\$ 998,307</u>	<u>\$ 818,417</u>
Net premiums earned—insurance:			
Direct	\$ 1,244,870	\$ 1,074,298	\$ 990,016
Assumed	10,382 (1)	6,904 (1)	28
Ceded (2)	(109,903)	(67,195)	(57,271)
Net premiums earned—insurance	<u>\$ 1,145,349</u>	<u>\$ 1,014,007</u>	<u>\$ 932,773</u>
Ceding commissions earned (3)	\$ 48,659	\$ 33,446	\$ 26,896
Ceded losses	5,859	5,086	3,261

- (1) Includes premiums earned from our participation in certain credit risk transfer programs.
(2) Net of profit commission.
(3) Deferred ceding commissions of \$74.8 million and \$91.4 million are included in other liabilities on our consolidated balance sheets at December 31, 2019 and 2018, respectively.

QSR Program

In 2012, Radian Guaranty entered into the QSR Program with a third-party reinsurance provider. Radian Guaranty has ceded the maximum amount permitted under the QSR Program and is no longer ceding NIW under this program. RIF ceded under the QSR Program was \$0.6 billion, \$0.9 billion and \$1.2 billion as of December 31, 2019, 2018 and 2017, respectively.

Single Premium QSR Program

2016 Single Premium QSR Agreement. In 2016, Radian Guaranty entered into the 2016 Single Premium QSR Agreement with a panel of third-party reinsurers. Under the 2016 Single Premium QSR Agreement, effective January 1, 2016, Radian Guaranty began ceding the following Single Premium IIF and NIW, subject to certain conditions:

- 20% of its existing performing Single Premium Policies written between January 1, 2012 and March 31, 2013;
- 35% of its existing performing Single Premium Policies written between April 1, 2013 and December 31, 2015; and
- 35% of its Single Premium NIW from January 1, 2016 to December 31, 2017.

Radian Guaranty received a 25% ceding commission for ceded premiums written pursuant to this transaction. Radian Guaranty also receives a profit commission, provided that the loss ratio on the loans covered under the agreement generally remains below 55%. Losses on the ceded risk above this level reduce Radian Guaranty’s profit commission on a dollar-for-dollar basis.

The agreement is scheduled to terminate on December 31, 2027. Radian Guaranty has the option, based on certain conditions and subject to a termination fee, to terminate the agreement at the end of any calendar quarter on or after January 1, 2020. If Radian Guaranty exercises this option in the future, it would result in Radian Guaranty reassuming the related RIF in exchange for a net payment to the reinsurer calculated in accordance with the terms of the agreement. Radian Guaranty also may terminate this agreement prior to the scheduled termination date under certain circumstances/conditions, including if one or both of the GSEs no longer grant full PMIERS credit for the reinsurance.

Effective December 31, 2017, we amended the 2016 Single Premium QSR Agreement to increase the amount of ceded risk on performing loans under the agreement from 35% to 65% for the 2015 through 2017 vintages. As of the effective date, the result of this amendment increased the amount of risk ceded on Single Premium Policies, including for the purposes of calculating any future ceding commissions and profit commissions that Radian Guaranty will earn. It also increased the future

amounts of our ceded premiums and ceded losses. RIF ceded under the 2016 Single Premium QSR Agreement was \$5.4 billion as of December 31, 2019, compared to \$6.3 billion and \$6.9 billion as of December 31, 2018 and 2017, respectively. As of January 1, 2018, Radian Guaranty is no longer ceding NIW under this arrangement.

2018 Single Premium QSR Agreement. In October 2017, we entered into the 2018 Single Premium QSR Agreement with a panel of third-party reinsurers. Under the 2018 Single Premium QSR Agreement, we ceded 65% of our Single Premium NIW beginning with the business written in January 2018, subject to certain conditions.

Radian Guaranty received a 25% ceding commission for ceded premiums written pursuant to this transaction. Radian Guaranty also receives an annual profit commission based on the performance of the loans subject to the agreement, provided that the loss ratio on the subject loans is below 56% for that calendar year.

The agreement is scheduled to terminate on December 31, 2029. Radian Guaranty has the option, based on certain conditions and subject to a termination fee, to terminate the agreement as of January 1, 2022, or at the end of any calendar quarter thereafter, which would result in Radian Guaranty reassuming the related RIF in exchange for a net payment to the reinsurer calculated in accordance with the terms of the agreement. Radian Guaranty also may terminate this agreement prior to the scheduled termination date under certain circumstances/conditions, including if one or both of the GSEs no longer grant full PMIERS credit for the reinsurance. RIF ceded under the 2018 Single Premium QSR Agreement was \$3.2 billion as of December 31, 2019, compared to \$1.9 billion as of December 31, 2018. As of January 1, 2020, Radian Guaranty is no longer ceding NIW under this arrangement.

2020 Single Premium QSR Agreement. In January 2020, we entered into the 2020 Single Premium QSR Agreement with a panel of third-party reinsurers. Under the 2020 Single Premium QSR Agreement, beginning with the business written in January 2020, we expect to cede 65% of our Single Premium NIW, subject to certain conditions and a limitation on ceded premiums written equal to \$250 million for policies issued between January 1, 2020 and December 31, 2021. The parties may mutually agree to increase the amount of ceded risk above this level.

Radian Guaranty will receive a 25% ceding commission for ceded premiums written pursuant to this transaction. Radian Guaranty will also receive an annual profit commission based on the performance of the loans subject to the agreement, provided that the loss ratio on the subject loans is below 56% for that calendar year. Radian Guaranty may discontinue ceding new policies under the agreement at the end of any calendar quarter.

The agreement is scheduled to terminate on December 31, 2031. Radian Guaranty has the option, based on certain conditions and subject to a termination fee, to terminate the agreement as of January 1, 2024, or at the end of any calendar quarter thereafter, which would result in Radian Guaranty reassuming the related RIF in exchange for a net payment to the reinsurer calculated in accordance with the terms of the agreement. Radian Guaranty also may terminate this agreement prior to the scheduled termination date under certain circumstances/conditions, including if one or both of the GSEs no longer grant full PMIERS credit for the reinsurance.

Excess-of-Loss Program

Through December 31, 2019, Radian Guaranty entered into two fully collateralized reinsurance arrangements with the Eagle Re Issuers. For the respective coverage periods, Radian Guaranty will retain the first-loss layer of aggregate losses, as well as any losses in excess of the outstanding reinsurance coverage amounts. The Eagle Re Issuers will provide the second layer coverage up to the outstanding coverage amounts. The aggregate excess-of-loss reinsurance coverage for these transactions decreases over a ten-year period as the principal balances of the underlying covered mortgages decrease and as any claims are paid by the applicable Eagle Re Issuer or the mortgage insurance is canceled. The outstanding reinsurance coverage amount will begin amortizing after an initial period in which a target level of credit enhancement is obtained and will stop amortizing if certain thresholds are reached, such as if the reinsured mortgages were to experience an elevated level of delinquencies or certain credit enhancement tests were not maintained. Radian Guaranty has rights to terminate the reinsurance agreements upon the occurrence of certain events. The Eagle Re Issuers financed their coverage by issuing mortgage insurance-linked notes to eligible third-party capital markets investors in an unregistered private offering.

Eagle Re 2019-1 (Issued April 2019)

(In millions)	As of December 31, 2019					
	Initial RIF	Initial Coverage	First Layer Retention	RIF	Remaining Coverage	First Layer Retention
Policy In-force Dates						
Jan 1, 2018-Dec 31, 2018	\$ 10,705	\$ 562	\$ 268	\$ 8,409	\$ 487	\$ 267

Eagle Re 2018-1 (Issued November 2018)

(In millions)	As of December 31, 2019					
	Initial RIF	Initial Coverage (1)	First Layer Retention	RIF	Remaining Coverage (1)	First Layer Retention
Policy In-force Dates						
Jan 1, 2017-Dec 31, 2017	\$ 9,109	\$ 434	\$ 205	\$ 7,026	\$ 343	\$ 204

- (1) Excludes a separate excess-of-loss reinsurance agreement entered into by Radian Guaranty that initially provided up to \$21.4 million of coverage.

The Eagle Re Issuers are not subsidiaries or affiliates of Radian Guaranty. Based on the accounting guidance that addresses VIEs, we have not consolidated any of the Eagle Re Issuers in our consolidated financial statements, because Radian does not have: (i) the power to direct the activities that most significantly affect the Eagle Re Issuers' economic performances or (ii) the obligation to absorb losses or the right to receive benefits from the Eagle Re Issuers that potentially could be significant to the Eagle Re Issuers.

The reinsurance premium due to the Eagle Re Issuers is calculated by multiplying the outstanding reinsurance coverage amount at the beginning of a period by a coupon rate, which is the sum of one-month LIBOR plus a contractual risk margin, and then subtracting actual investment income collected on the assets in the reinsurance trust during the preceding month. As a result, the premiums we pay will vary based on: (i) the spread between LIBOR and the rates on the investments held by the reinsurance trust and (ii) the outstanding amount of reinsurance coverage. As the reinsurance premium will vary based on changes in these rates, we concluded that the reinsurance agreements contain embedded derivatives, which we have accounted for separately as freestanding derivatives and recorded in other assets on our consolidated balance sheets. See Note 2 for more information on our accounting treatment of VIEs.

As of December 31, 2019 and 2018, our maximum exposure to loss associated with our Eagle Re Issuers was \$0.4 million and \$1.1 million, respectively, which represents the fair value of the embedded derivatives. In the event the VIE is unable to meet its future obligations to us, if any, our insurance subsidiaries would be liable to make claims payments to our policyholders. In the event that all of the assets in the reinsurance trust (consisting of U.S. government money market funds, cash or U.S. Treasury securities) have become worthless and the VIE is unable to make its payments to us, our maximum potential loss would be the amount of mortgage insurance claim payments for losses on the insured policies, net of the aggregate reinsurance payments already received, up to the full aggregate excess-of-loss reinsurance coverage amount. In the same scenario, the related embedded derivative would no longer have value.

The Eagle Re Issuers represent our only VIEs as of December 31, 2019. The following table presents the total assets of the Eagle Re Issuers as of the dates indicated.

<u>(In thousands)</u>	<u>Total VIE Assets and Liabilities (1)</u>	
	<u>Year Ended December 31,</u>	
	<u>2019</u>	<u>2018</u>
Eagle Re 2018-1	\$ 357,005	\$ 434,034
Eagle Re 2019-1	508,449	—
Total	<u>\$ 865,454</u>	<u>\$ 434,034</u>

(1) Assets held by the Eagle Re Issuers are required to be invested in U.S. government money market funds, cash or U.S. Treasury securities. Liabilities of Eagle Re Issuers consist of their mortgage insurance-linked notes, as described above.

In February 2020, Radian Guaranty entered into a fully collateralized reinsurance agreement with Eagle Re 2020-1. Eagle Re 2020-1 is a VIE and is not a subsidiary or affiliate of Radian Guaranty. This reinsurance agreement provides for up to \$488.4 million of aggregate excess-of-loss reinsurance coverage for the mortgage insurance losses on new defaults on an existing portfolio of eligible Recurring Premium Policies with RIF of \$9.9 billion that were issued between January 1, 2019 and September 30, 2019. Eagle Re 2020-1 financed its coverage by issuing mortgage insurance-linked notes in an aggregate amount of \$488.4 million to eligible third-party capital markets investors in an unregistered private offering.

Other Collateral

Although we use reinsurance as one of our risk management tools, reinsurance does not relieve us of our obligations to our policyholders. In the event the reinsurers are unable to meet their obligations to us, our insurance subsidiaries would be liable for any defaulted amounts. However, consistent with the PMIERS reinsurer counterparty collateral requirements, Radian Guaranty's reinsurers have established trusts to help secure our potential cash recoveries. In addition to the total VIE assets of the Eagle Re Issuers discussed above, the amount held in reinsurance trusts was \$203.2 million as of December 31, 2019, compared to \$212.2 million as of December 31, 2018. In addition, for the Single Premium QSR Program, Radian Guaranty holds amounts received from ceded premiums written to collateralize the reinsurers' obligations, which is reported in reinsurance funds withheld on our consolidated balance sheets. Any loss recoveries and profit commissions paid to Radian Guaranty related to the Single Premium QSR Program are expected to be realized from this account.

9. Other Assets

The following table shows the components of other assets for the periods indicated:

<u>(In thousands)</u>	December 31,	
	2019	2018
Prepaid federal income taxes (Note 10)	\$ 134,800	\$ —
Company-owned life insurance	105,721	83,377
Loaned securities (Note 6)	66,442	27,860
Internal-use software (1)	58,356	51,367
Right-of-use assets (2)	37,866	—
Accrued investment income	32,333	34,878
Property and equipment (3)	29,523	37,090
Assets held for sale (4)	24,908	—
Deferred policy acquisition costs	20,759	17,311
Reinsurance recoverables	16,976	14,402
Unbilled receivables	13,772	19,917
Current federal income tax receivable (5)	—	44,506
Other	26,163	36,992
Total other assets	\$ 567,619	\$ 367,700

- (1) Internal-use software, at cost, has been reduced by accumulated amortization of \$73.5 million and \$60.3 million at December 31, 2019 and 2018, respectively, as well as \$3.8 million of impairment charges in 2019 and \$5.1 million of impairment charges in 2018. Amortization expense was \$13.0 million, \$11.4 million and \$10.7 million for the years ended December 31, 2019, 2018 and 2017, respectively.
- (2) Represents right-of-use assets recognized as a result of our adoption, as of January 1, 2019, of the new accounting and disclosure requirements for leases of property, plant and equipment. See Note 2 for additional information. Right-of-use assets are shown less accumulated amortization of \$8.5 million at December 31, 2019.
- (3) Property and equipment at cost, less accumulated depreciation of \$68.4 million and \$62.9 million at December 31, 2019 and 2018, respectively. Depreciation expense was \$7.8 million, \$8.0 million and \$6.9 million for the years ended December 31, 2019, 2018 and 2017, respectively.
- (4) Related to the sale of Clayton. See Notes 4 and 7 for additional information on assets held for sale. Liabilities held for sale at December 31, 2019 are included in other liabilities on our consolidated balance sheets.
- (5) During the year ended December 31, 2019, current federal income tax receivable was reduced by our receipt of the remaining \$57.2 million refund from amounts on deposit with the IRS related to the settlement of the IRS Matter.

10. Income Taxes

Income Tax Provision

The components of our consolidated income tax provision from continuing operations are as follows:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Current provision (benefit)	\$ 19,522	\$ (42,398)	\$ 59,122
Deferred provision	157,162	120,573	166,527
Total income tax provision	\$ 176,684	\$ 78,175	\$ 225,649

The reconciliation of taxes computed at the statutory tax rate of 21% in 2019 and 2018 and 35% in 2017 to the provision for income taxes is as follows:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Provision for income taxes computed at the statutory tax rate	\$ 178,289	\$ 143,679	\$ 121,358
Change in tax resulting from:			
Repurchase premium on convertible notes	—	—	(96)
State tax provision (benefit), net of federal impact	(293)	5,570	(15,641)
Valuation allowance	1,941	(1,856)	18,197
Remeasurement of net deferred tax assets due to the TCJA . . .	—	—	102,617
Impact related to settlement of IRS Matter	—	(73,585)	—
Other, net	(3,253)	4,367	(786)
Provision for income taxes	\$ 176,684	\$ 78,175	\$ 225,649

Deferred Tax Assets and Liabilities

The significant components of our net deferred tax assets and liabilities from continuing operations are summarized as follows:

<u>(In thousands)</u>	December 31,	
	2019	2018
Deferred tax assets:		
Accrued expenses	\$ 11,642	\$ 17,487
Unearned premiums	34,394	34,686
Differences in fair value of financial instruments	—	1,115
Net unrealized loss on investments	—	16,297
State income taxes	65,917	67,069
Loss reserves	1,920	1,044
Goodwill and intangibles	36,282	35,068
Deferred policy acquisition and ceding commission costs	11,190	15,288
Share-based compensation	11,238	10,776
Lease liability	13,293	—
Other	11,188	13,091
Total deferred tax assets	197,064	211,921
Deferred tax liabilities:		
Differences in fair value of financial instruments	5,708	—
Net unrealized gain on investments	29,303	—
Depreciation	12,803	12,201
Contingency reserve	137,983	—
Other	15,914	3,581
Total deferred tax liabilities	201,711	15,782
Less: Valuation allowance	66,437	64,496
Net deferred tax asset (liability)	\$ (71,084)	\$ 131,643

Current and Deferred Taxes

As of December 31, 2019, we recorded a net current income tax payable of \$39.1 million, which primarily relates to applying the standards of accounting for uncertainty in income taxes. Certain entities within our consolidated group have generated net deferred tax assets of approximately \$65.8 million, relating primarily to state and local NOL carryforwards which, if unutilized, will expire during various future tax periods.

As a mortgage guaranty insurer, we are eligible for a tax deduction, subject to certain limitations, under Internal Revenue Code Section 832(e) for amounts required by state law or regulation to be set aside in statutory contingency reserves. The deduction is allowed only to the extent that we purchase non-interest bearing U.S. Mortgage Guaranty Tax and Loss Bonds issued by the U.S. Department of the Treasury in an amount equal to the tax benefit derived from deducting any portion of our statutory contingency reserves. As of December 31, 2019, we held \$134.8 million of these bonds, which are included as prepaid income taxes within other assets in our consolidated balance sheets. The corresponding deduction of our statutory contingency reserves resulted in the recognition of a net deferred tax liability, which is included in other liabilities in our consolidated balance sheets.

Valuation Allowances

We are required to establish a valuation allowance against our deferred tax assets when it is more likely than not that all or some portion of our deferred tax assets will not be realized. At each balance sheet date, we assess our need for a valuation allowance. Our assessment is based on all available evidence, both positive and negative. This requires management to exercise judgment and make assumptions regarding whether our deferred tax assets will be realized in future periods. We have determined that certain non-insurance entities within Radian may continue to generate taxable losses on a separate company basis in the near term and may not be able to fully utilize certain state and local NOLs on their state and local tax returns. Therefore, with respect to deferred tax assets relating to these state and local NOLs and other state timing adjustments, we retained a valuation allowance of \$66.4 million at December 31, 2019 and \$64.5 million at December 31, 2018.

IRS Matter

In July 2018, we finalized a settlement with the IRS related to adjustments we had been contesting that resulted from the examination by the IRS of our 2000 through 2007 consolidated federal income tax returns. This settlement with the IRS resolved the issues and concluded all disputes related to the IRS Matter. During 2018, we recorded tax benefits of \$73.6 million, which includes both the impact of the settlement with the IRS as well as the reversal of certain previously accrued state and local tax liabilities. In 2018, under the terms of the settlement, Radian utilized its “qualified deposits” with the U.S. Department of the Treasury to settle its \$31 million obligation to the IRS, and during the first quarter of 2019, the IRS refunded to Radian the remaining \$57.2 million that was previously on deposit. See Note 9 for additional information about these qualified deposits.

Unrecognized Tax Benefits

As of December 31, 2019, we have \$17.8 million of unrecognized tax benefits, including \$1.3 million of interest and penalties, that would affect the effective tax rate, if recognized. Our policy for the recognition of interest and penalties associated with uncertain tax positions is to record such items as a component of our income tax provision, of which \$1.3 million and \$2.2 million were recorded for the years ended December 31, 2019 and 2017, respectively. In 2018, we recorded an income tax benefit of \$61.6 million for interest and penalties primarily related to our IRS settlement.

A reconciliation of the beginning and ending unrecognized tax benefits is as follows:

<u>(In thousands)</u>	Year Ended December 31,	
	2019	2018
Balance at beginning of period	\$ 33,552	\$ 123,951
Tax positions related to the current year:		
Increases	3,215	5,058
Tax positions related to prior years:		
Increases	441	26,465
Decreases	—	(43,146)
Settlements with taxing authorities	—	(52,353)
Lapses of applicable statute of limitation	—	(26,423)
Balance at end of period	\$ 37,208	\$ 33,552

Our total net unrecognized tax benefits increased by \$3.7 million from December 31, 2018 to December 31, 2019, primarily due to the impact of unrecognized tax benefits associated with our recognition of certain premium income. Over the next 12 months, our unrecognized tax benefits may decrease by approximately \$7.5 million due to the expiration of the applicable statute of limitations relating to the 2015 and 2016 tax years. The statute of limitations related to our federal consolidated income tax return remains open for tax years 2015-2018. Additionally, among the entities within our consolidated group, various tax years remain open to potential examination by state and local taxing authorities.

11. Losses and Loss Adjustment Expenses

Our reserve for losses and LAE, at the end of each period indicated, consisted of:

<u>(In thousands)</u>	Year Ended December 31,	
	2019	2018
Mortgage Insurance loss reserves (1)	\$ 401,273	\$ 397,891
Services loss reserves (2)	3,492	3,470
Total reserve for losses and LAE	\$ 404,765	\$ 401,361

- (1) Primarily comprises first lien primary case reserves of \$339.8 million and \$361.7 million at December 31, 2019 and 2018, respectively.
- (2) A majority of this amount is subject to reinsurance, with the related reinsurance recoverables reported in other assets in our consolidated balance sheet, and relates to Radian Title Insurance. For all periods presented, total incurred losses and paid claims for Radian Title Insurance were not material.

For the periods indicated, the following table presents information relating to our mortgage insurance reserve for losses, including our IBNR reserve and LAE, but excluding our second-lien mortgage loan PDR:

<u>(In thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Balance at January 1,	\$ 397,891	\$ 507,588	\$ 760,269
Less: Reinsurance recoverables (1)	11,009	8,350	6,851
Balance at January 1, net of reinsurance recoverables	386,882	499,238	753,418
Add: Losses and LAE incurred in respect of default notices reported and unreported in:			
Current year (2)	146,733	135,291	185,486
Prior years	(14,709)	(31,699)	(49,286)
Total incurred	132,024	103,592	136,200
Deduct: Paid claims and LAE related to:			
Current year (2)	4,220	5,856	25,011
Prior years	128,007	210,092	365,369
Total paid	132,227	215,948	390,380 ⁽³⁾
Balance at end of period, net of reinsurance recoverables	386,679	386,882	499,238
Add: reinsurance recoverables (1)	14,594	11,009	8,350
Balance at December 31,	\$ 401,273	\$ 397,891	\$ 507,588

- (1) Related to ceded losses recoverable, if any, on reinsurance transactions. See Note 8 for additional information.
- (2) Related to underlying defaulted loans with a most recent default notice dated in the year indicated. For example, if a loan had defaulted in a prior year, but then subsequently cured and later re-defaulted in the current year, that default would be considered a current year default. For 2017, includes payments made on pool commutations, in some cases for loans not previously in default.
- (3) Includes the payment of \$54.8 million made in connection with the scheduled final settlement of the Freddie Mac Agreement in the third quarter of 2017.

Reserve Activity

Incurred Losses

For all periods presented, our case reserves established for new first-lien primary default notices were the primary driver of our total incurred losses, and they were primarily impacted by the number of new primary default notices received in the period and our related gross Default to Claim Rate assumption applied to those new defaults, as reflected in the Default to Claim Rate table below. Additionally, our provision for losses was positively impacted by favorable reserve development on prior year defaults. This favorable development in all periods was primarily driven by a reduction during the period in certain Default to Claim Rate assumptions for these prior year defaults based on observed trends. For 2019, this favorable development was partially offset by a \$30.5 million increase in our IBNR reserve estimate. The increase in our IBNR reserve estimate is related to certain legal proceedings involving challenges from certain servicers regarding our Loss Mitigation Activities, which challenges may result in the reversal of certain decisions regarding prior Rescissions, Claim Denials or Claim Curtailments. See Note 13 for additional information.

Hurricane Impact 2018/2017. During the third quarter of 2017, Hurricanes Harvey and Irma caused extensive property damage to areas of Texas, Florida and Georgia, as well as other general disruptions including power outages and flooding. Following Hurricanes Harvey and Irma, we observed an increase in new primary defaults from FEMA Designated Areas associated with these hurricanes. As expected, most of these hurricane-related defaults cured by the end of 2018, and at higher cure rates than the rates for our general population of defaults. These incremental defaults did not have a material impact on our provision for losses in 2017 or 2018.

Default to Claim Rate. Our Default to Claim Rate estimates on defaulted loans are mainly developed based on the Stage of Default and Time in Default of the underlying defaulted loans grouped according to the period in which the default occurred,

as measured by the progress toward foreclosure sale and the number of months in default. Our estimate of expected Rescissions and Claim Denials (net of expected Reinstatements) embedded in our estimated Default to Claim Rate is generally based on our recent experience. Consideration is also given to differences in characteristics between those rescinded policies and denied claims and the loans remaining in our defaulted inventory. The following table shows our gross Default to Claim Rates on our primary portfolio based on the Time in Default and as of the dates indicated:

	December 31,		
	2019	2018	2017
Default to Claim Rate on:			
New defaults (1)	7.5%	8.0%	10.0%
Defaults not in Foreclosure Stage:			
Time in Default: <= 5 years (1) (2)	23.9%	25.8%	28.3%
Time in Default: > 5 years	63.0%	68.0%	62.0%
Foreclosure Stage Defaults	70.0%	75.0%	81.0%

- (1) A 3% Default to Claim Rate assumption was assigned to the new primary defaults from FEMA Designated Areas associated with Hurricanes Harvey and Irma that were reported subsequent to those two natural disasters in 2017 and through February 2018.
- (2) Represents the weighted average Default to Claim Rate for all defaults not in foreclosure stage that have been in default for up to five years, including new defaults. The estimated Default to Claim Rates applied to defaults within this population vary by Time in Default, and range from the Default to Claim Rates on new defaults shown above, up to 55.6%, 57.4% and 62.0% for more aged defaults in this category as of December 31, 2019, 2018, and 2017, respectively.

Claims Paid

Total claims paid continue to decrease consistent with the ongoing decline in the outstanding default inventory. Claims paid for 2017 were higher because they included payments that were made in connection with the scheduled final settlement of the Freddie Mac Agreement in the third quarter of 2017.

Concentration of Risk

As of December 31, 2019, California is the only state that accounted for more than 10% of our mortgage insurance business measured by primary RIF. California accounted for 11.2% of our Mortgage Insurance segment’s primary RIF at December 31, 2019, compared to 12.3% at December 31, 2018. California accounted for 10.6% of our Mortgage Insurance segment’s direct primary NIW for the year ended December 31, 2019, compared to 11.9% and 14.1% for the years ended December 31, 2018 and 2017, respectively.

Additional Disclosures

The following tables provide information as of and for the periods indicated about: (i) incurred losses, net of reinsurance; (ii) the total of IBNR liabilities plus expected development on reported claims, included within the net incurred loss amounts; (iii) the cumulative number of reported defaults; and (iv) cumulative paid claims, net of reinsurance. The default year represents the period that a new default notice is first reported to us by loan servicers, related to borrowers that missed two monthly payments.

The information about net incurred losses and paid claims development for the years ended prior to 2019 is presented as supplementary information.

Incurred Losses, Net of Reinsurance											As of December 31, 2019		
Year Ended December 31,													
Unaudited													
(\$ in thousands)											Total of IBNR Liabilities Plus Expected Development on Reported Claims (1)	Cumulative Number of Reported Defaults (2)	
Default Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
2010	\$1,102,856	\$1,215,136	\$1,192,482	\$1,195,056	\$1,207,774	\$1,220,289	\$1,218,264	\$1,219,469	\$1,221,938	\$1,225,474	\$	5,292	146,324
2011		1,058,625	1,152,016	1,052,277	1,050,555	1,062,579	1,061,161	1,059,116	1,060,376	1,064,054		5,020	118,972
2012			803,831	763,969	711,213	720,502	715,646	714,783	713,750	713,839		2,652	89,845
2013				505,732	405,334	401,444	404,333	402,259	400,243	399,356		1,172	71,749
2014					337,784	247,074	265,891	264,620	260,098	261,507		398	58,215
2015						222,555	198,186	178,042	183,952	183,546		160	49,825
2016							201,016	165,440	149,753	148,811		115	46,264
2017								180,851	151,802	133,357		264	47,283
2018									131,513	116,634		650	39,598
2019										143,475		3,117	42,884
									Total	<u>\$4,390,053</u>			

- (1) Represents reserves as of December 31, 2019 related to IBNR liabilities.
- (2) Represents total number of new default notices received in each calendar year as compiled monthly based on reports received from loan servicers. As reflected in our Default to Claim Rate assumptions, a significant portion of reported defaults generally do not result in a claim. In certain instances, a defaulted loan may cure, and then re-default in a later period. Consistent with our reserving practice, each new event of default is treated as a unique occurrence and therefore certain loans that cure and re-default may be included as a reported default in multiple periods.

Cumulative Paid Claims, Net of Reinsurance

Year Ended December 31,

(In thousands)

Unaudited

Default Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
2010	\$ 11,810	\$ 394,278	\$ 700,316	\$ 956,598	\$ 1,055,935	\$ 1,145,497	\$ 1,178,546	\$ 1,198,031	\$ 1,210,281	\$ 1,214,558	
2011		40,392	323,216	756,820	892,959	982,830	1,016,855	1,038,582	1,048,966	1,052,688	
2012			19,200	295,332	528,744	631,982	672,271	692,291	702,136	704,770	
2013				34,504	191,040	307,361	357,087	379,036	388,688	392,818	
2014					13,108	115,852	200,422	233,607	246,611	252,619	
2015						10,479	84,271	142,421	163,916	172,645	
2016							11,061	76,616	119,357	134,115	
2017								24,653	66,585	99,678	
2018									5,584	36,066	
2019										4,220	
									Total	\$ 4,064,177	
										All outstanding liabilities before 2010, net of reinsurance	51,883
										Liabilities for claims, net of reinsurance (1)	\$ 377,759

(1) Calculated as follows:

(In thousands)

Incurring losses, net of reinsurance	\$ 4,390,053
Add: All outstanding liabilities before 2010, net of reinsurance . . .	51,883
Less: Cumulative paid claims, net of reinsurance	4,064,177
Liabilities for claims, net of reinsurance	<u>\$ 377,759</u>

The following table provides a reconciliation of the net incurred losses and paid claims development tables above to the Mortgage Insurance reserve for losses and LAE at December 31, 2019:

(In thousands)

	December 31, 2019
Net outstanding liabilities - Mortgage Insurance:	
Reserve for losses and LAE, net of reinsurance	\$ 377,759
Reinsurance recoverables on unpaid claims	14,594
Unallocated LAE	8,920
Total gross reserve for losses and LAE (1)	<u>\$ 401,273</u>

(1) Excludes Services reserve for losses and LAE of \$3.5 million.

The following is supplementary information about average historical claims duration as of December 31, 2019, representing the average distribution of when claims are paid relative to the year of default:

Average Annual Percentage Payout of Incurred Losses by Age, Net of Reinsurance (Unaudited)

Years	1	2	3	4	5	6	7	8	9	10
Mortgage Insurance . . .	6.0%	35.2%	30.6%	13.6%	6.2%	3.6%	1.8%	1.0%	0.7%	0.3%

12. Borrowings and Financing Activities

The carrying value of our debt at December 31, 2019 and 2018 was as follows:

(\$ in thousands)	December 31,	
	2019	2018
Senior notes:		
5.500% Senior Notes due 2019	\$ —	\$ 158,324
5.250% Senior Notes due 2020	—	232,729
7.000% Senior Notes due 2021	—	195,867
4.500% Senior Notes due 2024	444,445	443,428
4.875% Senior Notes due 2027	442,665	—
Total Senior Notes	\$ 887,110	\$ 1,030,348
FHLB advances:		
FHLB advances due 2019	\$ —	\$ 60,550
FHLB advances due 2020	79,002	2,991
FHLB advances due 2021	19,000	8,000
FHLB advances due 2022	11,925	—
FHLB advances due 2023	14,994	8,995
FHLB advances due 2024	9,954	1,996
Total FHLB advances	\$ 134,875	\$ 82,532

Extinguishment of Debt

2019 Activity

Repayment of Senior Notes due 2019. In accordance with the terms of the notes under the related indenture, we retired the remaining aggregate principal amount of \$158.6 million of outstanding Senior Notes due 2019 upon their maturity in June 2019.

Repurchases of Senior Notes due 2020 and 2021. During the second quarter of 2019, pursuant to cash tender offers to purchase any and all of our outstanding Senior Notes due 2020 and 2021, we purchased aggregate principal amounts of \$207.2 million and \$127.3 million of our Senior Notes due 2020 and 2021, respectively. We funded the purchases with \$351.8 million in cash (which includes accrued and unpaid interest due on the purchased notes). These purchases resulted in a loss on extinguishment of debt of \$16.8 million.

During the third quarter of 2019, we redeemed the remaining \$27.0 million and \$70.4 million aggregate principal amount of Senior Notes due 2020 and 2021, respectively, in accordance with the terms of the related indentures. The aggregate redemption amount paid was \$103.1 million, which includes accrued interest through the applicable redemption dates. These purchases resulted in a loss on extinguishment of debt of \$5.9 million.

Following these purchases and redemptions, there were no remaining principal amounts outstanding on the Senior Notes due 2020 and 2021 at December 31, 2019.

2017 Activity

Repurchases of Senior Notes due 2019, 2020 and 2021. During the third quarter of 2017, pursuant to cash tender offers, we purchased aggregate principal amounts of \$141.4 million, \$115.9 million and \$152.3 million of our Senior Notes due 2019, 2020 and 2021, respectively. We funded the purchases with \$450.8 million in cash (plus accrued and unpaid interest due on the purchased notes). These purchases resulted in a loss on extinguishment of debt of \$45.8 million. At December 31, 2017, the remaining principal amounts of our outstanding Senior Notes due 2019, 2020 and 2021 were \$158.6 million, \$234.1 million and \$197.7 million, respectively.

Repurchases of Convertible Senior Notes due 2017 and 2019. During the second quarter of 2017, we purchased an aggregate principal amount of \$21.6 million of our outstanding Convertible Senior Notes due 2017. We funded the purchases

with \$31.6 million in cash (plus accrued and unpaid interest due on the purchased notes). These purchases of Convertible Senior Notes due 2017 resulted in a loss on extinguishment of debt of \$1.2 million.

In connection with our purchases of Convertible Senior Notes due 2017, we terminated a corresponding portion of the capped call transactions we entered into in 2010 related to the initial issuance of the Convertible Senior Notes due 2017. We received proceeds of \$4.1 million for this termination.

In November 2016, we announced our intent to exercise our redemption option for the remaining \$68.0 million aggregate principal amount of our Convertible Senior Notes due 2019. As a result of the average closing price of our common stock exceeding the conversion price of \$10.60 prior to the redemption date, all of the holders of these notes elected to exercise their conversion rights. Radian elected to settle all of the notes surrendered for conversion with cash. We settled our obligations with respect to these conversions on January 27, 2017, with a cash payment of \$110.1 million. At the time of settlement, this transaction resulted in a pretax charge of \$4.5 million, representing the difference between the fair value and the carrying value, net of unamortized issuance costs, of the liability component of the Convertible Senior Notes due 2019. This transaction also resulted in an aggregate decrease as of the settlement date of 6.4 million diluted shares for the purposes of determining diluted net income per share.

As of December 31, 2017, there were no Convertible Senior Notes due 2017 or Convertible Senior Notes due 2019 outstanding.

Senior Notes

Senior Notes due 2024. In September 2017, we issued \$450 million aggregate principal amount of Senior Notes due 2024 and received net proceeds of \$442.2 million. These notes mature on October 1, 2024 and bear interest at a rate of 4.500% per annum, payable semi-annually on April 1 and October 1 of each year, with interest payments commencing on April 1, 2018.

Senior Notes due 2027. In June 2019, we issued \$450 million aggregate principal amount of Senior Notes due 2027 and received net proceeds of \$442.2 million. These notes mature on March 15, 2027 and bear interest at a rate of 4.875% per annum, payable semi-annually on March 15 and September 15 of each year, with interest payments commencing on March 15, 2020.

Redemption Terms in Senior Notes. We have the option to redeem the Senior Notes due 2024 and 2027, in whole or in part, at any time, or from time to time, prior to July 1, 2024 (the date that is three months prior to the maturity date of the Senior notes due 2024) and September 15, 2026 (the date that is six months prior to the maturity date of the Senior notes due 2027) (the "Par Call Date"), respectively, at a redemption price equal to the greater of: (i) 100% of the aggregate principal amount of the notes to be redeemed and (ii) the make-whole amount, which is the sum of the present values of the remaining scheduled payments of principal and interest in respect of the notes to be redeemed from the redemption date to the Par Call Date discounted to the redemption date at the applicable treasury rate plus 50 basis points, plus, in each case, accrued and unpaid interest thereon to, but excluding, the redemption date. At any time on or after the Par Call Date, we may, at our option, redeem the notes in whole or in part, at a redemption price equal to 100% of the aggregate principal amount of the notes to be redeemed, plus accrued and unpaid interest thereon to, but excluding, the redemption date.

Covenants in Senior Notes. The indentures governing the Senior Notes due 2024 and 2027 contain covenants customary for securities of this nature, including covenants related to the payments of the notes, periodic reporting and certificates to be issued and covenants related to amendments to the indentures. Additionally, the indentures include covenants restricting us from encumbering the capital stock of a designated subsidiary (as defined in the indenture for the notes) or disposing of any capital stock of any designated subsidiary unless either all of the stock is disposed of or we retain more than 80% of the stock. We were in compliance with all covenants as of December 31, 2019.

FHLB Advances

In August 2016, Radian Guaranty and Radian Reinsurance became members of the FHLB. As members, they may borrow from the FHLB, subject to certain conditions, which include the need to post collateral and the requirement to maintain a minimum investment in FHLB stock, in part depending on the level of their outstanding FHLB advances.

As of December 31, 2019, we had \$134.9 million of fixed-rate advances outstanding with a weighted average interest rate of 2.14%. Interest on the FHLB advances is payable quarterly, or at maturity if the term of the advance is less than 90 days. Principal is due at maturity. For obligations with maturities greater than or equal to 90 days, we may prepay the debt at any time, subject to a prepayment fee calculation.

The FHLB advances are required to be collateralized by eligible assets with a market value that must be maintained at a minimum of approximately 103% to 105% of the principal balance of the FHLB advances. Our fixed-maturities available for sale include securities totaling \$143.1 million and \$88.4 million at December 31, 2019 and 2018, respectively, which serve as collateral for our FHLB advances to satisfy this requirement.

Revolving Credit Facility

Radian Group has in place a \$267.5 million unsecured revolving credit facility with a syndicate of bank lenders, which is scheduled to expire on October 16, 2020. Terms of the credit facility include an accordion feature that allows Radian Group, at its option, to increase the total borrowing capacity during the term of the agreement, subject to our obtaining the necessary increased commitments from lenders (which may include then existing or other lenders), up to a total of \$300 million.

Subject to certain limitations, borrowings under the credit facility may be used for working capital and general corporate purposes, including capital contributions to Radian Group's insurance and reinsurance subsidiaries as well as growth initiatives. The credit facility contains customary representations, warranties, covenants, terms and conditions. Our ability to borrow under the credit facility is conditioned on the satisfaction of certain financial and other covenants, including covenants related to minimum net worth and statutory surplus, a maximum debt-to-capitalization level, limits on certain types of indebtedness and liens, minimum liquidity levels and Radian Guaranty's eligibility as a private mortgage insurer with the GSEs. At December 31, 2019, Radian Group was in compliance with all the covenants and there were no amounts outstanding under this revolving credit facility.

13. Commitments and Contingencies

Legal Proceedings

We are routinely involved in a number of legal actions and proceedings, including reviews, audits and inquiries by various regulatory entities, as well as litigation and other disputes arising in the ordinary course of our business. These proceedings could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief that could require significant expenditures or have other effects on our business. Management believes, based on current knowledge and after consultation with counsel, that the outcome of such actions will not have a material adverse effect on our consolidated financial condition. The outcome of litigation and other legal and regulatory matters and proceedings is inherently uncertain, and it is possible that one or more of the matters currently pending or threatened could have an adverse effect on our liquidity, financial condition or results of operations for any particular period. In accordance with applicable accounting standards and guidance, we establish accruals only when we determine both that it is probable that a loss has been incurred and the amount of the loss is reasonably estimable. We accrue the amount that represents our best estimate of the probable loss; however, if we can only determine a range of estimated losses, we accrue an amount within the range that, in our judgment, reflects the most likely outcome, and if none of the estimates within the range is more likely, we accrue the minimum amount of the range.

In the course of our regular review of pending legal and regulatory matters, we determine whether it is reasonably possible that a potential loss may have a material impact on our liquidity, results of operations or financial condition. If we determine such a loss is reasonably possible, we disclose information relating to such potential loss, including an estimate or range of loss or a statement that such an estimate cannot be made. On a quarterly basis, we review relevant information with respect to loss contingencies and update our accruals, disclosures and estimates of reasonably possible losses or range of losses based on such reviews. We are often unable to estimate the possible loss or range of loss until developments in such matters have provided sufficient information to support an assessment of the range of possible loss, such as quantification of a damage demand from plaintiffs, discovery from other parties and investigation of factual allegations, rulings by the court on motions or appeals, analysis by experts, and the progress of settlement negotiations. In addition, we generally make no disclosures for loss contingencies that are determined to be remote. For matters for which we disclose an estimated loss, the disclosed estimate reflects the reasonably possible loss or range of loss in excess of the amount accrued, if any.

Loss estimates are inherently subjective, based on currently available information, and are subject to management's judgment and various assumptions. Due to the inherently subjective nature of these estimates and the uncertainty and unpredictability surrounding the outcome of legal and other proceedings, actual results may differ materially from any amounts that have been accrued.

On December 22, 2016, Ocwen Loan Servicing, LLC and Homeward Residential, Inc. (collectively, "Ocwen") filed a complaint in the U.S. District Court for the Eastern District of Pennsylvania against Radian Guaranty alleging breach of contract and bad faith claims and seeking monetary damages and declaratory relief. Ocwen has also initiated similar legal

proceedings against several other mortgage insurers. On December 17, 2016, Ocwen separately filed a parallel arbitration petition against Radian Guaranty before the American Arbitration Association (“AAA”) asserting substantially the same allegations (the “Arbitration”). Ocwen’s filings together listed 9,420 mortgage insurance certificates issued under multiple insurance policies, including Pool Insurance policies, as subject to the dispute. On June 5, 2017, Ocwen filed an amended complaint and an amended petition (collectively, the “Amended Filings”) with both the court and the AAA, respectively, together listing 8,870 certificates as subject to the dispute. On April 11, 2018, the parties entered into a confidential agreement with respect to all certificates subject to the dispute. The confidential agreement resolved certain categories of claims involved in the dispute and, on April 12, 2018, the parties filed a stipulation of voluntary dismissal of the federal court proceeding and the trial judge issued an order dismissing all claims and counterclaims subject to the parties’ agreement. Radian Guaranty was not required to make any payment in connection with this confidential agreement. Pursuant to the confidential agreement, the parties: (1) dismissed the federal court proceeding; (2) narrowed the scope of the dispute to Ocwen’s breach of contract claims seeking payment of insurance benefits on approximately 2,500 certificates that Ocwen was previously pursuing through the Amended Filings; and (3) agreed to resolve the remaining dispute through the Arbitration. The Arbitration is proceeding, and Radian continues to defend against Ocwen’s claims vigorously.

On August 31, 2018, Nationstar Mortgage LLC d/b/a Mr. Cooper (“Nationstar”) filed a complaint in the U.S. District Court for the Eastern District of Pennsylvania against Radian Guaranty (the “Complaint”) alleging breach of contract, bad faith, equitable indemnification, unjust enrichment, and conversion claims and seeking monetary damages and declaratory relief. Exhibit 1 to the Complaint lists 3,014 mortgage insurance certificates issued under multiple insurance policies as subject to disputes involving insurance coverage decisions (the “Coverage Disputed Loans”). Exhibit 2 to the Complaint further lists 2,231 mortgage insurance certificates issued under multiple insurance policies as subject to disputes involving premium refund requests. In December 2018, Radian Guaranty filed a motion to dismiss the Complaint. In March 2019, the trial judge issued an order granting in part, and denying in part, our motion to dismiss, and dismissed Nationstar’s unjust enrichment and conversion claims. In May 2019, Radian Guaranty filed an answer, with affirmative defenses and counterclaims, in response to the Complaint. On September 23, 2019, the trial judge entered as an order a joint stipulation submitted by Nationstar and Radian Guaranty that narrowed the scope of the dispute involving Coverage Disputed Loans to claims relating to 1,704 mortgage insurance certificates. Radian Guaranty believes that Nationstar’s allegations and claims in the legal proceedings described above are without merit and legally deficient, and continues to defend against these claims vigorously.

In 2019, the Company increased its IBNR reserve estimate by \$30.5 million related to our best estimate of our probable loss in connection with the above legal proceedings. While Radian believes it has substantial defenses in these matters and intends to continue to defend against these claims vigorously, it is not feasible to predict the ultimate outcome of these disputes, and the Company could in the future be required to pay amounts as a result of settlements or decisions in these matters, potentially in excess of accruals.

We also are periodically subject to reviews and audits, as well as inquiries, information-gathering requests and investigations. In connection with these matters, from time to time we receive requests and subpoenas seeking information and documents related to aspects of our business.

Our Master Policies establish the timeline within which any suit or action arising from any right of an insured under the policy generally must be commenced. In general, any suit or action arising from any right of an insured under the policy must be commenced within two years after such right first arose for primary insurance and within three years for certain other policies, including certain Pool Insurance policies. Although we believe that our Loss Mitigation Activities are justified under our policies, from time to time we face challenges from certain lender and servicer customers regarding our Loss Mitigation Activities. These challenges could result in additional arbitration or judicial proceedings and we may need to reassume the risk on, and increase loss reserves for, the associated policies or pay additional claims.

The legal and regulatory matters discussed above could result in adverse judgments, settlements, fines, injunctions, restitutions or other relief that could require significant expenditures or have other effects on our business.

Other

We provide contract underwriting as an outsourced service to our customers. Under our current contract underwriting program the remedy we offer is limited indemnification to our contract underwriting customers only with respect to those loans that we simultaneously underwrite for both secondary market compliance and for potential mortgage insurance eligibility. In 2019, payments for losses related to contract underwriting remedies were de minimis. In 2019, our provision for contract underwriting expenses was de minimis. We monitor this risk and negotiate our underwriting fee structure and recourse agreements on a client-by-client basis. We also routinely audit the performance of our contract underwriters.

Lease Liability

Our lease liability represents the present value of future lease payments over the lease term. Our leases do not provide a readily determinable implicit rate. Therefore, we must estimate our incremental borrowing rate, on a collateralized basis, to discount the lease payments based on information available at lease commencement. Our leases expire periodically through August 2032, and contain provisions for scheduled periodic rent increases. We estimate the incremental borrowing rate based on the yields of Radian Group corporate bonds, as adjusted to reflect a collateralized borrowing rate, results in discount rates ranging from 4.22% to 7.08%. While the majority of our lease population expires within one year of one of the Radian Group corporate bonds, our more significant leases do not. For those leases, we adjust the corporate bond rate for both U.S. Department of the Treasury rate yields and a corporate spread adjustment determined from recent market data.

The following tables provide additional information related to our leases, including: (i) the components of our total lease cost; (ii) the cash flows arising from our lease transactions; (iii) supplemental balance sheet information; (iv) the weighted-average remaining lease term; (v) the weighted-average discount rate used for our leases; and (vi) the remaining maturities of our lease liabilities, as of and for the periods indicated:

<u>(\$ in thousands)</u>	<u>Year Ended December 31, 2019</u>
Operating lease cost	\$ 9,332
Short-term lease cost	140
Total lease cost	<u>\$ 9,472</u>
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ (10,615)
<u>(\$ in thousands)</u>	<u>December 31, 2019</u>
Operating leases: (1)	
Operating lease right-of-use assets (2)	\$ 37,866
Operating lease liabilities (3)	59,452
Weighted-average remaining lease term - operating leases (in years)	10.2 years
Weighted-average discount rate - operating leases	6.80%
Remaining maturities of lease liabilities for future years is as follows:	
2020	\$ 9,781
2021	9,299
2022	9,474
2023	9,594
2024	9,316
2025 and thereafter	44,350
Total lease payments	<u>91,814</u>
Less: Imputed interest	(32,362)
Present value of lease liabilities (3)	<u>\$ 59,452</u>

- (1) Operating lease right-of-use assets and liabilities of \$2.6 million and \$3.8 million, respectively, are classified as held for sale and are excluded from the amounts in this disclosure.
- (2) Classified in other assets in our consolidated balance sheets. See Note 9.
- (3) Classified in other liabilities in our consolidated balance sheets.

Pursuant to the previous lease accounting standard, rent expense for each of the years ended December 31, 2018 and 2017 was \$9.7 million and \$5.7 million, respectively. Our commitment for non-cancelable leases in future years as of December 31, 2018, as disclosed in our 2018 Form 10-K, was as follows (in thousands):

2019	\$ 11,310
2020	10,847
2021	10,165
2022	10,100
2023	10,251
2024 and thereafter	56,317
Total	<u>\$ 108,990</u>

At December 31, 2019 and 2018, there were no future minimum receipts expected from sublease rental payments.

14. Capital Stock

2019 Activity

On August 16, 2018, Radian Group’s board of directors approved a share repurchase program that authorized the Company to repurchase up to \$100 million of its common stock in the open market or in privately negotiated transactions, based on market and business conditions, stock price and other factors. On March 20, 2019, Radian Group’s board of directors approved a \$150 million increase in authorization for this program, bringing the total authorization to repurchase shares up to \$250 million, excluding commissions. Radian operated this program pursuant to a trading plan under Rule 10b5-1 of the Exchange Act, which permitted the Company to purchase shares, according to the parameters in the plan, when it may have otherwise been precluded from doing so. During 2019, the Company completed this program by purchasing 11,258,574 shares at an average price of \$22.22 per share, including commissions, which represents 5.3% of the shares outstanding at the beginning of the program. As of December 31, 2019, no further purchase authority remains under this program.

On August 14, 2019, Radian Group’s board of directors approved a share repurchase program authorizing the Company to spend up to \$200 million, excluding commissions, to repurchase Radian Group common stock in the open market or in privately negotiated transactions, based on market and business conditions, stock price and other factors. Radian operates this program pursuant to a trading plan under Rule 10b5-1 of the Exchange Act, which permits the Company to purchase shares, at pre-determined price targets, when it may otherwise be precluded from doing so. During 2019, the Company purchased 2,195,661 shares at an average price of \$22.79 per share, including commissions. As of December 31, 2019, purchase authority of up to \$150.0 million remained available under this program.

On February 13, 2020, Radian Group’s board of directors authorized a \$275 million increase in this program, bringing the total authorization to repurchase shares up to \$475 million, excluding commissions, and extended the expiration of this program extension from July 31, 2020 to August 31, 2021.

Subsequent to December 31, 2019, the Company purchased 2,738,462 shares of its common stock under its share repurchase program at an average price of \$24.03 per share, including commissions. As of February 25, 2020, purchase authority of up to \$359.2 million remained available under this program.

2018 Activity

On August 9, 2017, Radian Group’s board of directors authorized a share repurchase program to spend up to \$50 million to repurchase Radian Group common stock in the open market or in privately negotiated transactions, based on market and business conditions, stock price and other factors. Radian established a trading plan under Rule 10b5-1 of the Exchange Act to implement the program. The Company completed this program during the first half of 2018 by purchasing 3,022,856 shares of Radian Group common stock at an average price of \$16.56 per share, including commissions.

2017 Activity

On June 29, 2016, Radian Group’s board of directors authorized a share repurchase program to spend up to \$125 million to repurchase Radian Group common stock. In order to implement the program, Radian adopted a trading plan under Rule 10b5-1 of the Exchange Act during the third quarter of 2016. During the second quarter of 2017, 380 shares were purchased at

an average price of \$15.59 per share, which represented the only purchases made under the plan. This share repurchase program expired on June 30, 2017.

Other Purchases

We may purchase shares on the open market to settle stock options exercised by employees and purchases under our Employee Stock Purchase Plan. Through December 31, 2019, from time to time we also purchased shares on the open market to fund certain 401(k) matches. In addition, upon the vesting of certain restricted stock awards under our equity compensation plans, we may withhold from such vested awards shares of our common stock to satisfy the tax liability of the award recipients.

Dividends Paid

In each of the quarters during 2019, 2018 and 2017, we declared quarterly cash dividends on our common stock equal to \$0.0025 per share. On February 13, 2020, Radian Group's board of directors authorized an increase to the Company's quarterly cash dividend from \$0.0025 to \$0.125 per share.

15. Share-Based and Other Compensation Programs

On May 10, 2017, our stockholders approved the Amended and Restated Equity Compensation Plan, which amended and restated the 2014 Equity Plan. In addition to the Amended and Restated Equity Compensation Plan, we also have awards outstanding under our 2008 Equity Plan and 1995 Equity Plan. The last awards granted pursuant to the 2008 Equity Plan and 1995 Equity Plan were granted in 2014 and 2008, respectively. All awards granted under the Equity Plans have been performance-based or time-based awards in the form of non-qualified stock options, restricted stock, RSUs, phantom stock, or stock appreciation rights. The maximum contractual term for stock options and similar instruments under the Equity Plans is 10 years, although awards of these instruments may be granted with shorter terms.

The Amended and Restated Equity Compensation Plan authorizes the issuance of up to 8,954,109 shares, plus such number of shares of common stock that were subject to awards outstanding under the 2014 Equity Plan and the 2008 Equity Plan prior to the effective date of the Amended and Restated Equity Plan that subsequently terminate, expire or are cancelled and become available for issuance under the Amended and Restated Equity Compensation Plan ("Prior Plan Shares"). There were 6,266,017 shares available for grant under the Amended and Restated Equity Compensation Plan as of December 31, 2019 (the "share reserve"), which includes Prior Plan Shares. Each grant of restricted stock, RSUs, or performance share awards under the Amended and Restated Equity Compensation Plan (other than those settled in cash) reduces the share reserve available for grant under the Amended and Restated Equity Compensation Plan by 1.31 shares for every share subject to such grant. Absent this share reserve adjustment for outstanding restricted stock, RSUs, phantom stock or performance share awards, our shares remaining available for grant under the Amended and Restated Equity Compensation Plan would have been 9,678,723 shares as of December 31, 2019. Awards under the Amended and Restated Equity Compensation Plan that provide for settlement solely in cash (and not common shares) do not count against the share reserve.

Most awards vest at the end of the performance or service period and will vest earlier under certain circumstances. In the event of a grantee's death or disability, awards generally vest immediately. Upon retirement, awards generally vest immediately or at the end of the performance period, if any. Certain time-based RSU awards granted to officers under our Amended and Restated Equity Compensation Plan will vest in whole or in part in the event the grantee's employment is terminated by us without cause or for "good reason." Awards granted under the Equity Plans to officers and our non-employee directors provide for "double trigger" vesting in the event of a change of control. As a result, awards granted to officers will vest in connection with a change of control only in the event the grantee's employment is terminated by us without cause or the grantee terminates employment for "good reason," in each case within 90 days before or one year after the change of control. Awards to our non-employee directors will vest in connection with a change of control only in the event the grantee fails to be appointed to the board of directors of the surviving entity or is not nominated for reelection, or fails to be reelected after nomination, to the board of directors of the Company or the surviving entity, in each case at any time beginning upon the change of control and ending 90 days following the first meeting of the stockholders of the Company or the surviving entity after the change in control. In the event of a hypothetical change of control as of December 31, 2019, we estimate that the vesting of awards, assuming for purposes of this hypothetical that "double trigger" vesting occurred, would have resulted in a pretax accounting charge to us of approximately \$21.4 million, representing the acceleration of compensation expense.

We use the Monte Carlo valuation model to determine the fair value of all cash-settled awards where stock price is a factor in determining the vesting, as well as for cash- or equity-settled performance awards where there exists a similar stock price-based market condition. The Monte Carlo valuation model incorporates multiple input variables, including expected life,

volatility, risk-free rate of return and dividend yield for each award to estimate the probability that a vesting condition will be achieved. In determining these assumptions for the Monte Carlo valuations, we consider historic and observable market data.

The following table summarizes the compensation cost recognized and additional information regarding all share-based awards for the years indicated:

(In thousands)	Year Ended December 31,		
	2019	2018	2017
Compensation cost recognized (1):			
RSUs	\$ 20,694	\$ 16,591	\$ 12,207
Non-Qualified Stock Options	274	603	851
Phantom Stock	2	2	2
Employee Stock Purchase Plan	444	453	432
Total compensation cost recognized	21,414	17,649	13,492
Less: Costs deferred as acquisition costs	373	324	269
Stock-based compensation expense	<u>\$ 21,041</u>	<u>\$ 17,325</u>	<u>\$ 13,223</u>

- (1) Compensation cost is generally recognized over the periods that an employee provides service in exchange for the award. For purposes of calculating compensation cost recognized, we generally consider awards effectively vested (and we recognize the full compensation costs) when grantees become retirement eligible.

As of December 31, 2019, unrecognized compensation expense related to the unvested portion of all of our share-based awards was \$24.8 million. Absent a change of control under the Equity Plans, this expense is expected to be recognized over a weighted-average period of approximately 1.9 years.

RSUs

Information with regard to RSUs to be settled in stock for the periods indicated is as follows:

	Performance-Based		Time-Vested	
	Number of Shares	Weighted-Average Grant Date Fair Value	Number of Shares	Weighted-Average Grant Date Fair Value
Unvested, December 31, 2018 (1)	2,692,949	\$ 14.32	704,062	\$ 16.51
Granted (2)	656,854	\$ 21.45	380,568	\$ 22.76
Performance adjustment (3)	400,757	\$ —	—	\$ —
Vested (4)	(1,246,824)	\$ 8.43	(368,325)	\$ 16.81
Forfeited	(55,389)	\$ 17.81	(18,729)	\$ 18.31
Unvested, December 31, 2019 (1)	<u>2,448,347</u>	<u>\$ 17.03</u>	<u>697,576</u>	<u>\$ 19.72</u>

- (1) The final amount of RSUs distributed depends on the level of performance achieved along with each employee's continued service through the vest date, which could result in changes in vested RSUs.
(2) For performance-based RSUs, amount represents the probable outcome at grant date.
(3) Represents an adjustment to the number of unvested performance-based RSUs due to changes during the period in our estimated payouts, which can range from 0 to 200% of target depending on results over the applicable performance periods.
(4) Represents amounts vested during the year, which can include both original shares granted and the impact of performance adjustments.

The weighted-average grant date fair value of RSUs granted during 2018 and 2017 was \$15.43 and \$16.60, respectively. The fair value as of the respective vesting dates of RSUs vested during 2019, 2018 and 2017 was \$36.2 million, \$3.3 million, and \$1.4 million, respectively.

Performance-Based RSUs. In 2019, 2018 and 2017, executive and non-executive officers were granted performance-based RSUs to be settled in common stock with target awards totaling 486,540, 595,320, and 456,510 RSUs, respectively. The maximum payout at the end of the three-year performance period is 200% of a grantee's target number of RSUs. The maximum payout for awards based on the TSR Measures described below is generally subject to a maximum cap of six times the value of the grantee's target award on the grant date. Performance-based RSUs granted to executive officers are subject to a one-year post vesting holding period.

In 2019 and 2018, the vesting of the performance-based RSUs granted to each executive officer and non-executive will be based upon the cumulative growth in Radian's book value per share, adjusted for certain defined items, over a three-year performance period. In 2017, approximately 50% of the performance-based RSUs granted to each executive and non-executive officer will vest based on the cumulative growth in Radian book value per share, adjusted for certain defined items over a three-year period. The vesting of the remaining 50% of each performance-based RSU granted in 2017 is dependent upon: (i) Radian Group's total stockholder return ("TSR") compared to the median TSR of a designated peer group of companies as of the date of grant and (ii) Radian Group's absolute TSR, in each case measured over a three-year performance period and subject to certain conditions.

The grant date fair value of the performance-based RSUs that are based on the cumulative growth in Radian's book value per share is calculated based on the stock price as of the grant date, discounted for executives for the one-year post-vesting holding period. The compensation cost that is recognized over the remaining requisite service period is based on our expectations of the probable level of achievement of the performance condition.

Time-Vested RSUs. With the exception of certain time-vested RSUs granted in 2019 and 2018 to non-employee directors, the time-vested RSU awards granted in 2019, 2018 and 2017 are scheduled to vest in: (i) pro rata installments on each of the first three anniversaries of the grant date or (ii) generally at the end of three years. Certain time-vested RSU awards granted in 2019 and 2018 to non-employee directors generally are subject to one-year cliff vesting.

Non-Qualified Stock Options

Information with regard to stock options for the periods indicated is as follows:

<u>(\$ in thousands, except per-share amounts)</u>	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value (1)
Outstanding, December 31, 2018.	1,312,791	\$ 9.39		
Granted.	—	—		
Exercised	(329,900)	7.41		
Forfeited.	(1,344)	12.25		
Expired.	—	—		
Outstanding, December 31, 2019.	981,547	10.05	4.0	\$ 14,833
Exercisable, December 31, 2019	853,041	\$ 9.73	3.7	\$ 13,163
Available for grant, December 31, 2019	6,266,017			

(1) Based on the market price of \$25.16 at December 31, 2019.

The following table summarizes additional information concerning stock option activity for the periods indicated:

<u>(\$ in thousands, except per-share amounts)</u>	Years Ended December 31,		
	2019	2018	2017
Aggregate intrinsic value of options exercised.	\$ 4,984	\$ 6,274	\$ 14,389
Tax benefit of options exercised.	1,047	1,318	5,036
Cash received from options exercised	2,416	1,425	7,131

Upon the exercise of stock options, we generally issue shares from the authorized, unissued share reserves when the exercise price is less than the treasury stock repurchase price and from treasury stock when the exercise price is greater than the treasury stock repurchase price.

The following table summarizes information concerning outstanding and exercisable options at December 31, 2019:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
\$2.45 - \$3.58	377,117	2.4	\$ 2.45	377,117	\$ 2.45
\$10.42 - \$15.44	449,976	4.9	\$ 13.54	321,470	\$ 14.09
\$18.42	154,454	5.3	\$ 18.42	154,454	\$ 18.42
	<u>981,547</u>	4.0	\$ 10.05	<u>853,041</u>	\$ 9.73

Generally, the stock option awards have a four-year vesting period, with 50% of the award vesting on or after the third anniversary of the grant date and the remaining 50% of the award vesting on or after the fourth anniversary of the grant date, provided the applicable stock price performance hurdle is met. The fair value of stock options vested during the year ended December 31, 2019 was \$30 thousand, as compared to \$1.3 million in 2018 and \$3.3 million in 2017.

There were no stock options granted in 2017, 2018 and 2019.

Employee Stock Purchase Plan

On May 9, 2018, stockholders of Radian approved the Amended and Restated Radian Group Inc. ESPP, which amended and restated the Radian Group Inc. 2008 Employee Stock Purchase Plan. Under this plan, we issued 107,009; 103,668; and 105,476 shares to employees during the years ended December 31, 2019, 2018 and 2017, respectively, and when amended in 2018, an additional 1,250,000 shares of our authorized but unissued common stock were reserved for issuance. In January 2020, we issued 39,332 shares from the shares available for issuance under our Amended and Restated Radian Group Inc. ESPP. As a result, 1,902,459 shares currently remain available for issuance under the Amended and Restated Radian Group Inc. ESPP.

The Amended and Restated Radian Group Inc. ESPP is designed to allow eligible employees to purchase shares of our common stock at a discount of 15% off the lower of the fair market value of our common stock at the beginning or end of a six-month offering period (each period being the first and second six months in a calendar year).

The following assumptions were used in our calculation of Employee Stock Purchase Plan compensation expense during 2019:

	January 1, 2019	July 1, 2019
Expected life	6 months	6 months
Risk-free interest rate	2.76%	2.18%
Volatility	36.24%	27.90%
Dividend yield	0.06%	0.04%

16. Benefit Plans

The Radian Group Inc. Savings Incentive Plan (“Savings Plan”) covers substantially all of our full-time and our part-time employees. Participants can contribute up to 100% of their base earnings as pretax and/or after-tax (Roth IRA) contributions up to a maximum amount of \$19,000 for 2019. The Savings Plan also includes a catch-up contribution provision whereby participants who are or will be age 50 and above during the Savings Plan year may contribute an additional contribution. The maximum catch-up contribution for the Savings Plan in 2019 was \$6,000. We match up to 100% of the first 6.0% of base earnings contributed in any given year. Our expense for matching funds for the years ended December 31, 2019, 2018 and 2017 was \$5.6 million, \$6.1 million and \$4.8 million, respectively.

Certain of the benefits of this plan are as follows:

- allows for the immediate eligibility of new hire participation and provides for the automatic enrollment of eligible employees;
- provides for the immediate vesting of matching contributions (including existing unvested matching contributions attributable to prior periods) and the elimination of all restrictions (other than Radian Group’s Insider Trading Policy) on a participant’s ability to diversify his/her position in matching contributions; and

- permits Radian Group to make discretionary, pro rata (based on eligible pay) cash allocations to each eligible participant’s account, with vesting upon completion of three years of service with us.

17. Accumulated Other Comprehensive Income (Loss)

The following table shows the rollforward of accumulated other comprehensive income (loss) as of the periods indicated:

<u>(In thousands)</u>	Year Ended December 31, 2019		
	Before Tax	Tax Effect	Net of Tax
Balance at beginning of period	\$ (77,114)	\$ (16,194)	\$ (60,920)
Other comprehensive income (loss) (“OCI”):			
Unrealized gains (losses) on investments:			
Unrealized holding gains (losses) arising during the period	228,406	47,965	180,441
Less: Reclassification adjustment for net gains (losses) included in net income (1)	11,262	2,365	8,897
Net unrealized gains (losses) on investments	217,144	45,600	171,544
Foreign currency translation adjustments:			
Unrealized foreign currency translation adjustments	—	—	—
Less: Reclassification adjustment for liquidation of foreign subsidiary and other adjustments included in net income (2)	4	1	3
Net foreign currency translation adjustments	(4)	(1)	(3)
Net actuarial gains (losses)	(168)	(35)	(133)
OCI	216,972	45,564	171,408
Balance at end of period	\$ 139,858	\$ 29,370	\$ 110,488

(In thousands)	Year Ended December 31, 2018		
	Before Tax	Tax Effect	Net of Tax
Balance at beginning of period	\$ 32,669	\$ 9,584	\$ 23,085
Cumulative effect of adopting accounting standard updates	284	(2,664)	2,948
Balance adjusted for cumulative effect of adopting accounting standard updates	<u>32,953</u>	<u>6,920</u>	<u>26,033</u>
OCI:			
Unrealized gains (losses) on investments:			
Unrealized holding gains (losses) arising during the period	(123,235)	(25,879)	(97,356)
Less: Reclassification adjustment for net gains (losses) included in net income (1)	(13,000)	(2,730)	(10,270)
Net unrealized gains (losses) on investments	<u>(110,235)</u>	<u>(23,149)</u>	<u>(87,086)</u>
Foreign currency translation adjustments:			
Unrealized foreign currency translation adjustments	5	1	4
Less: Reclassification adjustment for liquidation of foreign subsidiary and other adjustments included in net income (2)	—	—	—
Net foreign currency translation adjustments	<u>5</u>	<u>1</u>	<u>4</u>
Net actuarial gains (losses)	163	34	129
OCI	<u>(110,067)</u>	<u>(23,114)</u>	<u>(86,953)</u>
Balance at end of period	<u>\$ (77,114)</u>	<u>\$ (16,194)</u>	<u>\$ (60,920)</u>

(In thousands)	Year Ended December 31, 2017		
	Before Tax	Tax Effect	Net of Tax
Balance at beginning of period	\$ (19,063)	\$ (6,668)	\$ (12,395)
OCI:			
Unrealized gains (losses) on investments:			
Unrealized holding gains (losses) arising during the period	46,235	14,332	31,903
Less: Reclassification adjustment for net gains (losses) included in net income (1)	(4,065)	(1,423)	(2,642)
Net unrealized gains (losses) on investments	<u>50,300</u>	<u>15,755</u>	<u>34,545</u>
Foreign currency translation adjustments:			
Unrealized foreign currency translation adjustments	225	75	150
Less: Reclassification adjustment for liquidation of foreign subsidiary and other adjustments included in net income (2)	(1,109)	(388)	(721)
Net foreign currency translation adjustments	<u>1,334</u>	<u>463</u>	<u>871</u>
Net actuarial gains (losses)	98	34	64
OCI	<u>51,732</u>	<u>16,252</u>	<u>35,480</u>
Balance at end of period	<u>\$ 32,669</u>	<u>\$ 9,584</u>	<u>\$ 23,085</u>

- (1) Included in net gains (losses) on investments and other financial instruments in our consolidated statements of operations.
(2) Included in restructuring and other exit costs in our consolidated statements of operations.

18. Statutory Information

Radian Group serves as the holding company for our insurance subsidiaries, through which we conduct our mortgage insurance and title insurance businesses. These insurance subsidiaries are subject to comprehensive, detailed regulation by the insurance departments in the various states where our insurance subsidiaries are domiciled or licensed to transact business. Insurance laws vary from state to state, but generally grant broad supervisory powers to state agencies or officials to examine insurance companies and enforce rules or exercise discretion affecting almost every significant aspect of the insurance business, including the power to revoke or restrict an insurance company's ability to write new business. In addition, in order to be eligible to insure loans purchased by the GSEs, mortgage insurers such as Radian Guaranty must meet the GSEs' eligibility requirements, or PMIERS. The PMIERS are comprehensive, covering virtually all aspects of the business and operations of a private mortgage insurer, including internal risk management and quality controls, the relationship between the GSEs and the approved insurer, as well as the approved insurer's financial condition.

The PMIERS and state insurance regulations include various capital requirements and dividend restrictions based on our insurance subsidiaries' statutory financial position and results of operations, as described below. Our failure to maintain adequate levels of capital could lead to intervention by the various insurance regulatory authorities, which could materially and adversely affect our business, business prospects and financial condition.

Statutory Financial Statements

We prepare our statutory financial statements in accordance with the accounting practices required or permitted, if applicable, by the insurance departments of the respective states of domicile of our insurance subsidiaries. Required SAP are established by the NAIC, as well as state laws, regulations and general administrative rules. In addition, insurance departments have the right to permit other specific practices that may deviate from prescribed practices. As of December 31, 2019, we did not have any prescribed or permitted SAP that resulted in reported statutory surplus or risk-based capital being different from what would have been reported had NAIC statutory accounting practices been followed.

Reflecting the principal differences between SAP and GAAP, statutory financial statements typically do not include unrealized gains or losses on fixed maturity securities, deferred policy acquisition costs, and certain net deferred tax assets and certain other less readily marketable assets that are designated as non-admitted assets. In addition to these general differences, SAP also requires that mortgage insurance companies establish a special contingency reserve equal to 50% of premiums earned in each year, generally to be maintained for 10 years, to protect policyholders against loss during adverse economic cycles. As a result of the requirement to establish and maintain this statutory liability, contingency reserves affect the ability of a mortgage insurer to pay dividends, as described below. With regulatory approval, a mortgage insurance company may make early withdrawals from this contingency reserve when incurred losses exceed 35% of net premiums in a calendar year. Neither Radian Guaranty nor any other of our other mortgage insurance subsidiaries released any amounts from their contingency reserves in 2019, 2018 or 2017. Based on the typical 10-year holding requirement, Radian Guaranty is scheduled to release contingency reserves to unassigned surplus in material amounts beginning in 2024.

As a mortgage guaranty insurer, we are eligible for a tax deduction, subject to certain limitations, related to amounts required to be set aside in statutory contingency reserves to the extent we purchase U.S. Mortgage Guaranty Tax and Loss Bonds issued by the U.S. Department of the Treasury. Under SAP, this deduction reduces the tax provision reflected in the statutory financial statements, which in turn increases statutory net income and surplus. See Note 10 for additional information.

All of our mortgage insurance subsidiaries are domiciled in Pennsylvania, and we currently write new business using two principal subsidiaries, Radian Guaranty and Radian Reinsurance.

Radian Guaranty, our only approved insurer under the PMIERS, is authorized as a monoline insurer to write mortgage guaranty insurance (or in states where there is no specific authorization for mortgage guaranty insurance, the applicable line of insurance under which mortgage guaranty insurance is regulated) in all 50 states, the District of Columbia and Guam. Radian Reinsurance is licensed only in Pennsylvania as a stock casualty insurance company authorized to carry on the business of credit insurance, which includes the authority to write direct mortgage guaranty insurance. We use Radian Reinsurance to participate in the credit risk transfer programs developed by Fannie Mae and Freddie Mac. Prior to the January 2020 actions described below, we also used Radian Reinsurance to provide reinsurance to Radian Guaranty. Our mortgage insurance subsidiaries also include Radian Insurance, Radian Mortgage Assurance, Radian Guaranty Reinsurance Inc., Radian Investor Surety Inc. and Radian Mortgage Guaranty Inc.; however, Radian Insurance is our only other mortgage insurance entity that had any remaining RIF as of December 31, 2019, totaling \$10.2 million.

Our mortgage insurance subsidiaries' statutory net income, statutory policyholders' surplus and contingency reserve as of and for the years ended December 31, 2019, 2018 and 2017 were as follows:

<u>(In millions)</u>	December 31,		
	2019	2018	2017
<u>Radian Guaranty</u>			
Statutory net income	\$ 703.4	\$ 501.9	\$ 445.1
Statutory policyholders' surplus	637.7	814.1	1,201.0
Contingency reserve	2,607.8	2,109.9	1,667.0
<u>Radian Reinsurance</u>			
Statutory net income	\$ 101.6	\$ 86.1	\$ 64.3
Statutory policyholders' surplus	455.6	356.2	328.9
Contingency reserve	360.3	293.5	234.0
<u>All Other Mortgage Insurance Subsidiaries</u>			
Statutory net income	\$ 0.1	\$ (2.8)	\$ 0.1
Statutory policyholders' surplus	45.7	58.0	58.6
Contingency reserve	1.8	1.7	1.7

In January 2020, in connection with the termination of an intercompany reinsurance agreement between Radian Reinsurance and Radian Guaranty, Radian Reinsurance transferred \$6.0 billion in RIF to Radian Guaranty and released substantially all of its contingency reserves to unassigned surplus. In turn, Radian Guaranty established equivalent contingency reserves with a corresponding decrease to its unassigned surplus. As part of these actions, the Pennsylvania Insurance Department approved a \$465 million return of capital from Radian Reinsurance to Radian Group as well as the transfer of \$200 million of cash and marketable securities from Radian Group to Radian Guaranty in exchange for a surplus note. This intercompany surplus note has a 3% interest rate and a stated maturity of January 31, 2030. The surplus note may be redeemed at any time upon 30 days prior notice, subject to a request by Radian Guaranty for the approval of the Pennsylvania Insurance Department.

Additionally, as part of our title services, we offer title insurance through Radian Title Insurance, an Ohio domiciled title insurance underwriter and settlement services company that is licensed to issue title insurance policies in 39 states and the District of Columbia. Radian Title Insurance's statutory policyholders' surplus and statutory net income were \$27.0 million and \$0.3 million, respectively, as of and for the year ended December 31, 2019.

Statutory Capital Requirements

Under state insurance regulations, Radian Guaranty is required to maintain minimum surplus levels and, in certain states, a minimum ratio of statutory capital relative to the level of net RIF, or Risk-to-capital. There are 16 RBC States that currently impose a Statutory RBC Requirement. The most common Statutory RBC Requirement is that a mortgage insurer's Risk-to-capital may not exceed 25 to 1. In certain of the RBC States, a mortgage insurer must satisfy a MPP Requirement. Unless an RBC State grants a waiver or other form of relief, if a mortgage insurer, such as Radian Guaranty, is not in compliance with the Statutory RBC Requirement of that state, the mortgage insurer may be prohibited from writing new mortgage insurance business in that state. The statutory capital requirements for the non-RBC States are de minimis (ranging from \$1 million to \$5 million); however, the insurance laws of these states generally grant broad supervisory powers to state agencies or officials to enforce rules or exercise discretion affecting almost every significant aspect of the insurance business, including the power to revoke or restrict an insurance company's ability to write new business. Radian Guaranty's domiciliary state, Pennsylvania, is not one of the RBC States.

Radian Guaranty was in compliance with the Statutory RBC Requirements or MPP Requirements, as applicable, in each of the RBC States as of December 31, 2019. Radian Guaranty's Risk-to-capital calculation appears in the table below. For purposes of the Risk-to-capital requirements imposed by certain states, statutory capital is defined as the sum of statutory policyholders' surplus plus statutory contingency reserves.

<u>(\$ in millions)</u>	December 31,	
	2019	2018
RIF, net (1)	\$ 44,076.7	\$ 40,711.3
Common stock and paid-in capital	\$ 1,041.0	\$ 1,416.0
Surplus Note	100.0	100.0
Unassigned earnings (deficit)	(503.3)	(701.9)
Statutory policyholders' surplus	637.7	814.1
Contingency reserve	2,607.8	2,109.9
Statutory capital	\$ 3,245.5	\$ 2,924.0
Risk-to-capital	13.6:1	13.9:1

(1) Excludes risk ceded through all reinsurance programs (including with affiliates) and RIF on defaulted loans.

Our other mortgage insurance and title insurance subsidiaries were also in compliance with all statutory and counterparty capital requirements as of December 31, 2019 and 2018.

The NAIC is in the process of reviewing the minimum capital and surplus requirements for mortgage insurers and considering changes to the Model Act. In December 2019, a working group of state regulators released exposure drafts of a revised Model Act, including new proposed mortgage guaranty insurance capital requirements for mortgage insurers. The process for developing this framework is ongoing, and the outcome of this process remains uncertain. As proposed, the capital requirements set forth in the current exposure draft are impacted, among other things, by changes in the economic and housing environment, including changes in home prices and incomes. Given the current economic and housing environment, if the exposure draft of the new Model Act was adopted and in effect today, we do not believe that the capital requirements imposed by the new Model Act would exceed those of the current PMIERS financial requirements described below.

PMIERS. The PMIERS financial requirements require that a mortgage insurer's Available Assets meet or exceed its Minimum Required Assets. At December 31, 2019, Radian Guaranty was in compliance with the PMIERS financial requirements.

The GSEs may amend the PMIERS at any time, and they have broad discretion to interpret the requirements, which could impact the calculation of Radian Guaranty's Available Assets and/or Minimum Required Assets. In addition, the GSEs have a broad range of consent rights under the PMIERS and require private mortgage insurers to obtain the prior consent of the GSEs before taking certain actions. If Radian Guaranty is unable to satisfy the requirements set forth in the PMIERS, the GSEs could restrict it from conducting certain types of business with them or take actions that may include not purchasing loans insured by Radian Guaranty.

Statutory Dividend Restrictions

As of December 31, 2019, the amount of restricted net assets held by our consolidated insurance subsidiaries (which represents our equity investment in those insurance subsidiaries) totaled \$4.2 billion of our consolidated net assets. Despite holding assets above the minimum statutory capital thresholds and PMIERS financial requirements, the ability of Radian's mortgage insurance subsidiaries to pay dividends on their common stock is restricted by certain provisions of the insurance laws of Pennsylvania, their state of domicile. Under Pennsylvania's insurance laws, ordinary dividends and distributions may only be paid out of an insurer's positive unassigned surplus, measured as of the end of the prior fiscal year, unless the Pennsylvania Insurance Department approves the payment of extraordinary dividends or other distributions from another source.

As of December 31, 2019, Radian Guaranty and Radian Reinsurance had negative unassigned surplus of \$503.3 million and \$50.4 million, respectively. Therefore, no dividends or other ordinary distributions can be paid by these subsidiaries in 2020. In light of Radian Guaranty's negative unassigned surplus related to operating losses in prior periods and the ongoing need to set aside contingency reserves, we do not anticipate that Radian Guaranty will be permitted under applicable insurance laws to pay ordinary dividends to Radian Group for the foreseeable future. As discussed above, Radian Guaranty is scheduled to release contingency reserves to unassigned surplus in material amounts beginning in 2024, which should accelerate the reduction of its negative unassigned surplus. Under Pennsylvania's insurance laws, an insurer may request approval to pay an

Extraordinary Distribution, subject to the approval of the Pennsylvania Insurance Department. Radian Guaranty sought and received such approval to return capital by paying Extraordinary Distributions to Radian Group in 2019 and 2018. As described above, Radian Reinsurance sought and received approval to return capital by paying an Extraordinary Distribution to Radian Group in January 2020.

The surplus additions (distributions) between Radian Group and Radian Guaranty and our other insurance subsidiaries for the years ended December 31, 2019, 2018 and 2017 were as follows:

(In millions)	Year Ended December 31,		
	2019	2018	2017
Additions to Radian Guaranty surplus	\$ —	\$ —	\$ 100.0
Distributions from Radian Guaranty surplus	(375.0)	(450.0)	(175.0)
Additions to other insurance subsidiaries' surplus	65.4	30.3	175.2
Distributions from other insurance subsidiaries' surplus . .	(14.0)	—	—

19. Quarterly Financial Data (Unaudited)

<u>(In thousands, except per-share amounts)</u>	2019 Quarters				
	First	Second	Third	Fourth	Year
Net premiums earned—insurance	\$ 263,512	\$ 299,166	\$ 281,185	\$ 301,486	\$1,145,349
Services revenue	32,753	39,303	42,509	40,031	154,596
Net investment income	43,847	43,761	42,756	41,432	171,796
Net gains (losses) on investments and other financial instruments	21,913	12,540	13,009	4,257	51,719
Provision for losses	20,754	47,427	29,231	34,619	132,031
Policy acquisition costs	5,893	6,203	6,435	6,783	25,314
Cost of services	24,157	27,845	29,044	27,278	108,324
Other operating expenses	78,805	70,046	76,384	80,894	306,129
Loss on extinguishment of debt	—	16,798	5,940	—	22,738
Impairment of goodwill	—	—	—	4,828	4,828
Amortization and impairment of other acquired intangible assets	2,187	2,139	2,139	15,823	22,288
Net income	170,957	166,730	173,438	161,184	672,309
Diluted net income per share (1)	\$ 0.78	\$ 0.78	\$ 0.83	\$ 0.79	\$ 3.20
Weighted-average shares outstanding—diluted	218,343	213,603	208,691	205,165	210,340
	2018 Quarters				
	First	Second	Third	Fourth	Year
Net premiums earned—insurance	\$ 242,550	\$ 251,344	\$ 258,431	\$ 261,682	\$1,014,007
Services revenue	33,164	36,828	36,566	38,414	144,972
Net investment income	33,956	37,473	38,995	42,051	152,475
Net gains (losses) on investments and other financial instruments	(18,887)	(7,404)	(4,480)	(11,705)	(42,476)
Provision for losses	37,283	19,337	20,881	27,140	104,641
Policy acquisition costs	7,117	5,996	5,667	6,485	25,265
Cost of services	23,126	24,205	25,854	24,939	98,124
Other operating expenses	63,243	70,184	70,125	77,266	280,818
Restructuring and other exit costs	551	925	4,464	113	6,053
Amortization and impairment of other acquired intangible assets	2,748	2,748	3,472	3,461	12,429
Net income	114,486	208,949	142,797	139,779	606,011
Diluted net income per share (1)	\$ 0.52	\$ 0.96	\$ 0.66	\$ 0.64	\$ 2.77
Weighted-average shares outstanding—diluted	219,883	217,830	217,902	217,883	218,553

(1) Diluted net income per share is computed independently for each period presented. Consequently, the sum of the quarters may not equal the total net income per share for the year.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.**Disclosure Controls and Procedures**

We maintain disclosure controls and procedures designed to provide reasonable assurance that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, including our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2019 pursuant to Rule 15d-15(b) under the Exchange Act. Management necessarily applied its judgment in assessing the costs and benefits of such controls and procedures, which by their nature, can provide only reasonable assurance regarding management's control objectives. Management does not expect that our disclosure controls and procedures will prevent or detect all errors and fraud. A control system, irrespective of how well it is designed and operated, can only provide reasonable assurance and cannot guarantee that it will succeed in its stated objectives.

Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2019, our disclosure controls and procedures were effective to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our 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 GAAP. Our internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our 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.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting, as of December 31, 2019, using the criteria described in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our evaluation under the updated internal control framework in *Internal Control-Integrated Framework (2013)*, management concluded that our internal control over financial reporting was effective as of December 31, 2019. The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There was no change in the internal control over financial reporting that occurred during the quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item is incorporated by reference to, and will be contained in, our definitive proxy statement, which will be filed within 120 days after December 31, 2019. Accordingly, we have omitted the information from this Item pursuant to General Instruction G (3) of Form 10-K.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to, and will be contained in, our definitive proxy statement, which will be filed within 120 days after December 31, 2019. Accordingly, we have omitted the information from this Item pursuant to General Instruction G (3) of Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item is incorporated by reference to, and will be contained in, our definitive proxy statement, which will be filed within 120 days after December 31, 2019. Accordingly, we have omitted the information from this Item pursuant to General Instruction G (3) of Form 10-K.

Equity Compensation Plans

The following table sets forth certain information relating to the Company's equity compensation plans as of December 31, 2019. Each number of securities reflected in the table is a reference to shares of our common stock.

<u>Plan Category</u> (1)	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by stockholders (2)	5,402,083 (3)	\$ 2.19 (4)	8,207,808 (5)
Equity compensation plans not approved by stockholders	—	—	—
Total	<u>5,402,083</u> (3)	<u>\$ 2.19</u> (4)	<u>8,207,808</u> (5)

- (1) The table does not include information for equity compensation plans assumed by us in mergers, under which we do not grant additional awards.
- (2) These plans consist of our 1995 Equity Plan, 2008 Equity Plan, the Amended and Restated Equity Compensation Plan and our Amended and Restated Radian Group Inc. ESPP.
- (3) Represents 175,791 shares of phantom stock issued under our 1995 Equity Plan, 496,152 non-qualified stock options and 760,426 RSUs issued under our 2008 Equity Plan, and 485,395 non-qualified stock options and 3,484,319 RSUs issued under our Amended and Restated Equity Compensation Plan. Of the RSUs included herein, 2,375,005 are performance-based stock-settled RSUs that could potentially pay out between 0% and 200% of this represented target.
- (4) The shares of phantom stock and RSUs were granted at full value, and therefore, have a weighted-average exercise price of \$0. Excluding shares of phantom stock and RSUs from this calculation, the weighted-average exercise price of outstanding non-qualified stock options was \$10.05 at December 31, 2019.
- (5) Includes 6,266,017 shares available for issuance under our Amended and Restated Equity Compensation Plan, and 1,941,791 shares available for issuance under our Amended and Restated Radian Group Inc. ESPP, in each case as of December 31, 2019. In January 2020, we issued 39,332 shares from the shares available for issuance under our Amended and Restated Radian Group Inc. ESPP. As a result, 1,902,459 shares currently remain available for issuance under the Amended and Restated Radian Group Inc. ESPP.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference to, and will be contained in, our definitive proxy statement, which will be filed within 120 days after December 31, 2019. Accordingly, we have omitted the information from this Item pursuant to General Instruction G (3) of Form 10-K.

Item 14. Principal Accountant Fees and Services.

The information required by this Item is incorporated by reference to, and will be contained in, our definitive proxy statement, which will be filed within 120 days after December 31, 2019. Accordingly, we have omitted the information from this Item pursuant to General Instruction G (3) of Form 10-K.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a)

1. Financial Statements—See the “Index to Consolidated Financial Statements” included in Item 8 of this report for a list of the financial statements filed as part of this report.

2. Exhibits—See “Index to Exhibits” on page 169 of this report for a list of exhibits filed as part of this report.

3. Financial Statement Schedules—See the “Index to Financial Statement Schedules” on page 176 of this report for a list of the financial statement schedules filed as part of this report.

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Item 16. Form 10-K Summary.

None.

INDEX TO EXHIBITS

<u>Exhibit Number</u>	<u>Exhibit</u>
3.1	Third Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated May 11, 2004 and filed on May 12, 2004)
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated May 22, 2008 and filed on May 29, 2008)
3.3	Second Amendment to the Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated May 12, 2010 and filed on May 18, 2010)
3.4	Certificate of Amendment of Certificate of Incorporation of the Registrant effective as of May 15, 2013 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated May 14, 2013 and filed on May 20, 2013)
3.5	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Registrant effective as of May 11, 2016 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated May 11, 2016 and filed on May 17, 2016)
3.6	Certificate of Change of Registered Agent and Registered Office of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated November 10, 2010 and filed on November 16, 2010)
3.7	Certificate of Designation of Series A Junior Participating Preferred Stock (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated October 9, 2009 and filed on October 13, 2009)
3.8	Certificate of Elimination of the Series A Junior Participating Preferred Stock of the Registrant (incorporated by reference to Exhibit 3.3 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated March 19, 2019 and filed on March 19, 2019)
3.9	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K/A (file no. 1-11356) dated March 19, 2019 and filed on December 20, 2019)
4.1	Specimen certificate for Common Stock (incorporated by reference to Exhibit 4.1 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 1999)
4.2	Senior Indenture dated as of March 4, 2013 between the Registrant and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated February 27, 2013 and filed on March 4, 2013)
4.3	Fifth Supplemental Indenture dated as of September 26, 2017 between the Registrant and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated September 26, 2017 and filed on September 26, 2017)
4.4	Form of 4.500% Senior Notes due 2024 (included within Exhibit 4.3)
4.5	Sixth Supplemental Indenture dated as of June 24, 2019 between the Registrant and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated June 20, 2019 and filed on June 24, 2019)
4.6	Form of 4.875% Senior Notes due 2027 (included within Exhibit 4.5)
*4.7	Description of Registrant's Securities
+10.1	Comprehensive 401(k) Profit Sharing Plan Nonstandard Adoption Agreement, effective January 1, 2016 (incorporated by reference to Exhibit 10.4 of the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2018)

Exhibit
Number

Exhibit

- +10.2 Qualified Retirement Plan and Trust Defined Contribution Basic Plan Document, adopted by Radian Group Inc. effective January 1, 2016 (incorporated by reference to Exhibit 10.5 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2018)
- 10.3 Radian Group Inc. 1995 Equity Compensation Plan (Amended and Restated May 9, 2006) (incorporated by reference to Appendix A to the Registrant's Definitive Proxy Statement for the 2006 Annual Meeting of Stockholders (file no. 1-11356), as filed with the Securities and Exchange Commission on April 18, 2006)
- +10.4 Amendment to Radian Group Inc. 1995 Equity Compensation Plan (Amended and Restated May 9, 2006) dated February 5, 2007 (incorporated by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2006)
- +10.5 Amendment No. 2 to Radian Group Inc. 1995 Equity Compensation Plan, dated November 6, 2007 (incorporated by reference to Exhibit 10.23 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2007)
- +10.6 Form of Phantom Stock Agreement for Non-Employee Directors under 1995 Equity Compensation Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated February 8, 2005 and filed on February 14, 2005)
- +10.7 Radian Group Inc. Amended and Restated 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-8 (file no. 333-174428) filed on May 23, 2011)
- +10.8 Form of Phantom Stock Agreement for Non-Employee Directors under 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.8 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended September 30, 2008)
- +10.9 Amendment to Form of 2008 Phantom Stock Agreement for Non-Employee Directors under the 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2009)
- +10.10 Form of 2009 Restricted Stock Unit Award Agreement for Non-Employee Directors under the 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2009)
- +10.11 Amended and Restated Radian Group Inc. Voluntary Deferred Compensation Plan for Directors (incorporated by reference to Exhibit 10.34 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2014)
- +10.12 Amended and Restated Radian Voluntary Deferred Compensation Plan for Officers (incorporated by reference to Exhibit 10.35 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2014)
- +10.13 Radian Group Inc. Employee Stock Purchase Plan, as amended and restated as of May 9, 2018 (incorporated by reference to Appendix A to the Registrant's Definitive Proxy Statement on Schedule 14A (file no. 1-11356) filed on April 9, 2018 for the 2018 Annual Meeting of Stockholders)
- *10.14 Global Expense Allocation and Services Agreement, effective as of January 1, 2016, between the Registrant and each of its insurance subsidiaries: Radian Guaranty Inc., Radian Insurance Inc., Radian Mortgage Assurance Inc., Radian Mortgage Insurance Inc., Radian Guaranty Reinsurance Inc., Radian Reinsurance Inc., Radian Mortgage Guaranty Inc. and Radian Investor Surety Inc.
- *10.15 Radian Group Inc. Amended and Restated Allocation of Consolidated Tax Liability Agreement between the Registrant and each of its subsidiaries, dated December 19, 2014, including Amendments 1 through 4
- +10.16 Form of 2012 Stock Option Agreement under the 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2012)

**Exhibit
Number**

Exhibit

- +10.17 Form of 2013 Stock Option Agreement under the 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2013)
- +10.18 Form of 2014 Stock Option Agreement under the 2014 Equity Compensation Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2014)
- 10.19 Confidential Settlement Agreement and Release, dated as of September 16, 2014 by and among Radian Guaranty Inc., Countrywide Home Loans, Inc., and Bank of America, N.A., as a successor to BofA Home Loans Servicing f/k/a Countrywide Home Loans Servicing LP on its own behalf and as successor in interest by de jure merger to Countrywide Bank FSB, formerly Treasury Bank (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated September 16, 2014 and filed on September 19, 2014)
- +10.20 Letter Agreement, effective as of December 10, 2014, between the Registrant and J. Franklin Hall (including Attachment A - Severance Agreement and Attachment B - Restrictive Covenant Agreement) (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated December 10, 2014 and filed on December 15, 2014)
- +10.21 Radian Group Inc. 2014 Equity Compensation Plan (incorporated by reference to Appendix A to the Registrant's Definitive Proxy Statement on Schedule 14A (file no. 1-11356) filed on April 7, 2014 for the 2014 Annual Meeting of Stockholders)
- +10.22 Form of 2015 Stock Option Agreement under the 2014 Equity Compensation Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended September 30, 2015)
- +10.23 Form of Amendment to Restricted Stock Unit Award Agreement for Non-Employee Directors under the 2008 Equity Compensation Plan (incorporated by reference to Exhibit 10.91 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) for the year ended December 31, 2015)
- +10.24 Form of 2016 Performance-Based Restricted Stock Unit Grant Letter under the 2014 Equity Compensation Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2016)
- +10.25 Form of 2016 Stock Option Agreement under the 2014 Equity Compensation Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2016)
- +10.26 Form of Executive Severance Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended September 30, 2016)
- +10.27 Form of Restrictive Covenant Agreement (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended September 30, 2016)
- +10.28 Employment Agreement, dated as of November 19, 2019, between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated November 19, 2019 and filed on November 19, 2019)
- +10.29 Restrictive Covenants Agreement, dated as of February 8, 2017, between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated February 7, 2017 and filed on February 13, 2017)
- +10.30 Form of Restricted Stock Unit Agreement between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated February 7, 2017 and filed on February 13, 2017)
- +10.31 Radian Group Inc. STI/MTI Incentive Plan for Executive Employees, as amended and restated (incorporated by reference to Exhibit 10.7 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated February 7, 2017 and filed on February 13, 2017)

**Exhibit
Number**

Exhibit

- +10.32 Radian Group Inc. Equity Compensation Plan (Amended and Restated as of May 10, 2017 (incorporated by reference to Appendix A to the Registrant's Definitive Proxy Statement on Schedule 14A (file no. 1-11356) filed on April 10, 2017 for the 2017 Annual Meeting of Stockholders)
- +10.33 Form of 2017 Performance-Based Restricted Stock Unit Grant Letter (book value) under the Radian Group Inc. Equity Compensation Plan between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.34 Form of 2017 Performance-Based Restricted Stock Unit Grant Letter (TSR) under the Radian Group Inc. Equity Compensation Plan between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.35 Form of 2017 Time-Based Restricted Stock Unit Grant Letter under the Radian Group Inc. Equity Compensation Plan between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.36 Form of Executive Officer 2017 Performance-Based Restricted Stock Unit Grant Letter (book value) under the Radian Group Inc. Equity Compensation Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.37 Form of Executive Officer 2017 Performance-Based Restricted Stock Unit Grant Letter (TSR) under the Radian Group Inc. Equity Compensation Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.38 Form of Executive Officer 2017 Time-Based Restricted Stock Unit Grant Letter under the Radian Group Inc. Equity Compensation Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (file no. 1-11356) for the period ended June 30, 2017)
- +10.39 2018 Performance-Based Restricted Stock Unit Grant Letter (book value) under the Radian Group Inc. Equity Compensation Plan between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (file 1-11356) for the period ended June 30, 2018)
- +10.40 2018 Time-Based Restricted Stock Unit Grant Letter under the Radian Group Inc. Equity Compensation Plan between the Registrant and Richard G. Thornberry (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (file 1-11356) for the period ended June 30, 2018)
- +10.41 Form of Executive Officer 2018 Performance-Based Restricted Stock Unit Grant Letter (book value) under the Radian Group Inc. Equity Compensation Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (file 1-11356) for the period ended June 30, 2018)
- +10.42 Form of Executive Officer 2018 Time-Based Restricted Stock Unit Grant Letter under the Radian Group Inc. Equity Compensation Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (file 1-11356) for the period ended June 30, 2018)
- 10.43 Credit Agreement, dated October 16, 2017, by and among the Registrant, Royal Bank of Canada, as Administrative Agent, RBC Capital Markets and U.S. Bank National Association, as Syndication Agents, Joint Lead Arrangers and Joint Book Runners, Associated Bank, National Association, as Documentation Agent, and certain other banks and financial institutions (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (file no. 1-11356) dated October 16, 2017 and filed on October 20, 2017)
- 10.44 Augmenting Lender Supplement, dated October 26, 2018, to the Credit Agreement, dated as of October 16, 2017, among the Registrant, the Lenders party thereto and Royal Bank of Canada, as administrative agent (incorporated by reference to Exhibit 10.91 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) dated February 28, 2019 and filed on February 28, 2019)
- 10.45 First Amendment, dated as of December 21, 2018, to the Credit Agreement, dated as of October 16, 2017 (as amended by that certain Augmenting Lender Supplement dated as of October 26, 2018), by and among the Registrant, each of the lenders from time to time party thereto, Royal Bank of Canada, as administrative agent, and the other agents and arrangers party thereto (incorporated by reference to Exhibit 10.92 to the Registrant's Annual Report on Form 10-K (file no. 1-11356) dated February 28, 2019 and filed on February 28, 2019)

<u>Exhibit Number</u>	<u>Exhibit</u>
10.46	Form of Radian Group Inc. Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (file no. 1/11356) dated April 8, 2019 and filed on April 10, 2019)
*21	Subsidiaries of the Registrant
*23.1	Consent of PricewaterhouseCoopers LLP
*31	Rule 13a-14(a) Certifications
**32	Section 1350 Certifications
*101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
*101.SCH	Inline XBRL Taxonomy Extension Schema Document
*101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
*101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
*101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
*101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
*104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101.INS)
*	Filed herewith.
**	Furnished herewith.
+	Management contract, compensatory plan or arrangement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on February 28, 2020.

Radian Group Inc.

By: /s/ Richard G. Thornberry

Richard G. Thornberry
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 28, 2020, by the following persons on behalf of the registrant and in the capacities indicated.

<u>Name</u>	<u>Title</u>
<u>/s/ RICHARD G. THORNBERRY</u> Richard G. Thornberry	Chief Executive Officer (Principal Executive Officer) and Director
<u>/s/ J. FRANKLIN HALL</u> J. Franklin Hall	Senior Executive Vice President, Chief Financial Officer (Principal Financial Officer)
<u>/s/ ROBERT J. QUIGLEY</u> Robert J. Quigley	Senior Vice President, Controller (Principal Accounting Officer)
<u>/s/ HERBERT WENDER</u> Herbert Wender	Non-Executive Chairman of the Board
<u>/s/ DAVID C. CARNEY</u> David C. Carney	Director
<u>/s/ BRAD L. CONNER</u> Brad L. Conner	Director
<u>/s/ HOWARD B. CULANG</u> Howard B. Culang	Director
<u>/s/ DEBRA HESS</u> Debra Hess	Director
<u>/s/ LISA W. HESS</u> Lisa W. Hess	Director
<u>/s/ LISA MUMFORD</u> Lisa Mumford	Director
<u>/s/ GAETANO MUZIO</u> Gaetano Muzio	Director
<u>/s/ GREGORY V. SERIO</u> Gregory V. Serio	Director
<u>/s/ NOEL J. SPIEGEL</u> Noel J. Spiegel	Director

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All other schedules are omitted because the required information is not present or is not present in amounts sufficient to require submission of the schedules, or because the information required is included in our Consolidated Financial Statements and notes thereto.

Radian Group Inc. and Its Consolidated Subsidiaries
Schedule I
Summary of Investments—Other Than Investments in Related Parties
December 31, 2019

<u>Type of Investment</u>	<u>Amortized Cost</u>	<u>Fair Value</u>	<u>Amount Reflected on the Consolidated Balance Sheet</u>
(In thousands)			
Fixed-maturities available for sale:			
Bonds:			
U.S. government and agency securities	\$ 198,613	\$ 199,928	\$ 199,928
State and municipal obligations	112,003	119,994	119,994
Corporate bonds and notes	2,136,819	2,241,280	2,241,280
RMBS	766,429	779,354	779,354
CMBS	593,647	608,015	608,015
Other ABS	760,785	759,129	759,129
Foreign government and agency securities	5,091	5,224	5,224
Total securities available for sale	<u>4,573,387</u>	<u>4,712,924</u>	<u>4,712,924</u>
Trading securities	297,505	317,150	317,150
Equity securities:			
Common stocks	153,023	157,685	157,685
Total equity securities	<u>153,023</u>	<u>157,685</u>	<u>157,685</u>
Short-term investments (1)	533,184	533,358	533,358
Other invested assets	1,756	4,072	4,072
Total investments other than investments in related parties . . .	<u>\$ 5,558,855</u>	<u>\$ 5,725,189</u> (2)	<u>\$ 5,725,189</u> (2)

- (1) Includes cash collateral held under securities lending agreements of \$25.6 million that is reinvested in money market instruments.
- (2) Includes \$24.0 million of fixed maturity securities available for sale, \$27.5 million of equity securities and \$14.9 million of short-term securities loaned under securities lending agreements that are classified as other assets in our consolidated balance sheets.

Radian Group Inc.
Schedule II—Financial Information of Registrant
Condensed Balance Sheet
Parent Company Only

<u>(In thousands, except per-share amounts)</u>	December 31,	
	2019	2018
Assets		
Investments		
Fixed-maturities available for sale—at fair value (amortized cost of \$429,999 and \$320,746)	\$ 430,442	\$ 321,401
Trading securities—at fair value (amortized cost of \$0 and \$55,948)	—	56,011
Equity securities—at fair value (cost of \$13,280 and \$29,387)	13,381	29,375
Short-term investments—at fair value	162,363	238,185
Other invested assets—at fair value	1,500	—
Total investments	607,686	644,972
Cash	23,534	32,352
Investment in subsidiaries, at equity in net assets (Note C)	4,413,065	3,927,268
Accounts and notes receivable	100,775	101,072
Federal income taxes recoverable, net—current	—	49,381
Other assets (Note C)	113,917	58,993
Total assets.	\$ 5,258,977	\$ 4,814,038
Liabilities and Stockholders' Equity		
Senior notes	\$ 887,110	\$ 1,030,348
Federal income taxes—deferred (Note A)	253,739	243,341
Other liabilities	69,405	51,634
Total liabilities	1,210,254	1,325,323
Common stockholders' equity		
Common stock: par value \$.001 per share; 485,000 shares authorized at December 31, 2019 and 2018; 219,123 and 231,132 shares issued at December 31, 2019 and 2018, respectively; 201,164 and 213,473 shares outstanding at December 31, 2019 and 2018, respectively	219	231
Treasury stock, at cost: 17,959 and 17,660 shares at December 31, 2019 and 2018, respectively	(901,657)	(894,870)
Additional paid-in capital	2,449,884	2,724,733
Retained earnings	2,389,789	1,719,541
Accumulated other comprehensive income (loss).	110,488	(60,920)
Total common stockholders' equity	4,048,723	3,488,715
Total liabilities and stockholders' equity	\$ 5,258,977	\$ 4,814,038

See Supplemental Notes.

Radian Group Inc.
Schedule II—Financial Information of Registrant
Condensed Statements of Operations
Parent Company Only

Year Ended December 31,

<u>(In thousands)</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Revenues:			
Net investment income	\$ 19,751	\$ 21,294	\$ 22,528
Net gains (losses) on investments and other financial instruments . .	12,863	(470)	(328)
Other income	218	—	80
Total revenues	<u>32,832</u>	<u>20,824</u>	<u>22,280</u>
Expenses:			
Loss on extinguishment of debt	22,738	—	51,469
Interest expense	—	17,805	18,033
Total expenses (Note B)	<u>22,738</u>	<u>17,805</u>	<u>69,502</u>
Pretax income (loss)	10,094	3,019	(47,222)
Income tax benefit	(19,997)	(3,319)	(141,437)
Equity in net income of affiliates	642,218	599,673	26,873
Net income	<u>672,309</u>	<u>606,011</u>	<u>121,088</u>
Other comprehensive income (loss), net of tax	171,408	(86,953)	35,480
Comprehensive income	<u>\$ 843,717</u>	<u>\$ 519,058</u>	<u>\$ 156,568</u>

See Supplemental Notes.

Radian Group Inc.
Schedule II—Financial Information of Registrant
Condensed Statements of Cash Flows
Parent Company Only

Year Ended December 31,

(In thousands)	2019	2018	2017
Net cash provided by (used in) operating activities (1)	\$ 143,664	\$ 254,698	\$ (23,654)
Cash flows from investing activities:			
Proceeds from sales of:			
Fixed-maturities available for sale	296,171	6,779	58,007
Trading securities	56,787	—	—
Equity securities	16,916	—	—
Proceeds from redemptions of:			
Fixed-maturities available for sale	149,767	12,391	60,414
Trading securities	114	—	—
Purchases of:			
Fixed-maturities available for sale	(293,284)	(37,552)	(134,456)
Sales, redemptions and (purchases) of :			
Short-term investments, net	157,045	(131,164)	210,529
Other assets, net	(6,958)	(3,317)	(1,107)
Capital distributions from subsidiaries	6,000	—	924
Capital contributions to subsidiaries	(65,879)	(30,338)	(21,643)
(Issuance) repayment of note receivable from affiliate	—	—	(44)
Net cash provided by (used in) investing activities	316,679	(183,201)	172,624
Cash flows from financing activities:			
Dividends paid	(2,061)	(2,140)	(2,154)
Issuance of senior notes, net	442,439	—	442,163
Repayments and repurchases of senior notes	(610,763)	—	(593,527)
Proceeds from termination of capped calls	—	—	4,208
Issuance of common stock	2,416	1,385	7,132
Repurchases of common shares	(300,201)	(50,053)	(6)
Credit facility commitment fees paid	(989)	(1,510)	(1,993)
Net cash provided by (used in) financing activities	(469,159)	(52,318)	(144,177)
Effect of exchange rate changes on cash and restricted cash	(2)	—	—
Increase (decrease) in cash and restricted cash	(8,818)	19,179	4,793
Cash and restricted cash, beginning of period	32,352	13,173	8,380
Cash and restricted cash, end of period	\$ 23,534	\$ 32,352	\$ 13,173

(1) Includes cash distributions received from subsidiaries of \$26.6 million, \$55.4 million and \$24.3 million in 2019, 2018 and 2017, respectively. Excludes non-cash distributions received from subsidiaries of \$362.4 million, \$394.6 million and \$197.3 million in 2019, 2018 and 2017, respectively.

See Supplemental Notes.

Radian Group Inc.
Schedule II—Financial Information of Registrant
Parent Company Only
Supplemental Notes

Note A

The Radian Group Inc. (the “Parent Company”, “we” or “our”) financial statements represent the stand-alone financial statements of the Parent Company. These financial statements have been prepared on the same basis and using the same accounting policies as described in the consolidated financial statements included herein, except that the Parent Company uses the equity-method of accounting for its majority-owned subsidiaries. These financial statements should be read in conjunction with our consolidated financial statements and the accompanying notes thereto.

See Notes 12 and 14 of Notes to Consolidated Financial Statements for additional information on the Parent Company’s debt obligations and capital stock.

The Parent Company has entered into the following intercompany guarantees with certain of our subsidiaries:

- Radian Group and Radian Mortgage Assurance are parties to a guaranty agreement, which provides that Radian Group will make sufficient funds available to Radian Mortgage Assurance to ensure that Radian Mortgage Assurance has a minimum of \$5.0 million of statutory policyholders’ surplus every calendar quarter. Radian Mortgage Assurance had \$8.8 million of statutory policyholders’ surplus and no RIF exposure as of December 31, 2019.
- To allow our mortgage insurance customers to comply with applicable securities regulations for issuers of ABS (including mortgage-backed securities), Radian Group has guaranteed two structured transactions for Radian Guaranty with \$79.3 million of aggregate remaining credit exposure as of December 31, 2019.
- Radian Group and Radian Guaranty Reinsurance are parties to an Assumption and Indemnification Agreement with regard to obligations under our tax-sharing arrangements. Pursuant to this agreement, Radian Group is required to assume certain obligations that arise as a result of our tax-sharing arrangement.

As of December 31, 2019, Radian Group recorded a net deferred tax liability of \$253.7 million. This balance includes liabilities related to certain of our subsidiaries which have incurred federal NOLs that could not be carried-back and utilized on a separate company tax return basis. As a result, we are not currently obligated under our tax-sharing agreement to reimburse these subsidiaries for their separate company federal NOL carryforward. However, if in a future period, one of these subsidiaries utilizes its share of federal NOL carryforwards on a separate entity basis, then Radian Group may be obligated to fund such subsidiary’s share of our consolidated tax liability to the IRS.

Note B

The Parent Company provides certain services to its subsidiaries. The Parent Company allocates to its subsidiaries expenses it incurs in the capacity of supporting those subsidiaries, including operating expenses, which are allocated based on the forecasted annual percentage of total revenue, which approximates the estimated percentage of time spent on certain subsidiaries, and interest expense, which is allocated based on relative capital. These expenses are presented net of allocations in the Statements of Operations. Substantially all operating expenses and interest expense, have been allocated to the subsidiaries for 2019, 2018 and 2017.

Amounts allocated to the subsidiaries for expenses are based on actual cost, without any mark-up. The Parent Company considers these charges fair and reasonable. The subsidiaries generally reimburse the Parent Company for these costs in a timely manner, which has the impact of temporarily improving the cash flows of the Parent Company, if accrued expenses are reimbursed prior to actual payment.

The following table shows the components of our Parent Company expenses that have been allocated to our subsidiaries for the periods indicated:

<u>(in thousands)</u>	Year Ended December 31,		
	2019	2018	2017
Allocated operating expenses	\$ 124,412	\$ 94,815	\$ 72,764
Allocated interest expense	53,692	42,195	44,686
Total allocated expenses	<u>\$ 178,104</u>	<u>\$ 137,010</u>	<u>\$ 117,450</u>

Note C

During 2018, the Services segment had not generated sufficient cash flow to reimburse the Parent Company for its share of its direct and allocated operating expenses and interest expense, and therefore the Parent Company effectively contributed \$66.1 million to Clayton Group Holdings Inc. to reflect the impairment of the interest receivable on the Clayton Intercompany Note of \$17.8 million and the outstanding intercompany receivable balance of \$48.3 million representing unreimbursed direct and allocated costs.

See Note 18 of Notes to Consolidated Financial Statements for additional information related to capital transactions between the Parent Company and its consolidated insurance subsidiaries.

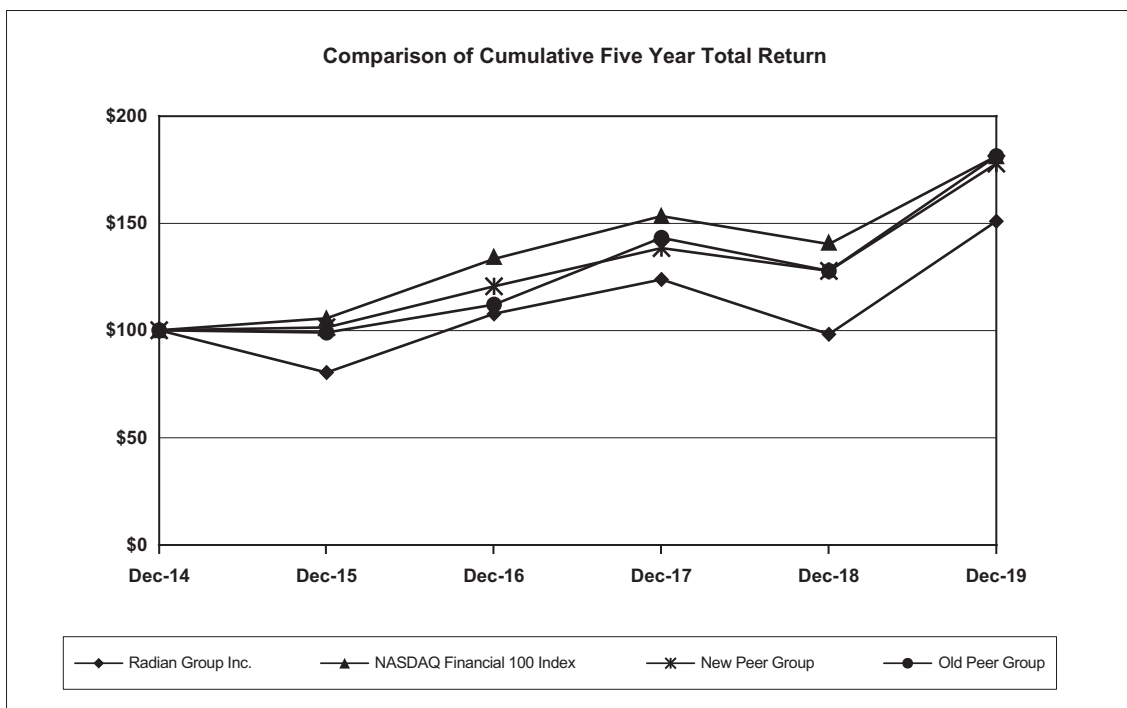
Radian Group Inc.
Schedule IV—Reinsurance
Insurance Premiums Earned
Years Ended December 31, 2019, 2018 and 2017

(\$ in thousands)	Gross Amount	Ceded to Other Companies	Assumed from Other Companies	Net Amount	Assumed Premiums as a Percentage of Net Premiums
2019	\$ 1,244,870	\$ 109,903	\$ 10,382	\$ 1,145,349	0.91%
2018	\$ 1,074,298	\$ 67,195	\$ 6,904	\$ 1,014,007	0.68%
2017	\$ 990,016	\$ 57,271	\$ 28	\$ 932,773	0.00%

Total Stockholder Return Graph

The line graph below compares, for the period from December 31, 2014 through December 31, 2019, the cumulative total return to stockholders of a \$100 investment in (1) Radian's common stock, (2) the NASDAQ Financial 100 Index, (3) a peer group constructed by Radian for the 2019 Annual Report consisting of Arch Capital Group Ltd; Assured Guaranty Ltd.; Black Knight Inc. (trading began 5/20/15); CoreLogic Inc.; Essent Group Ltd ; First American Financial Corp; Genworth Financial Inc.; MGIC Investment Corporation; Mr. Cooper Group Inc. (previously NationStar Mortgage Holdings Inc. until 7/30/18 when it was acquired by WMIH); NMI Holdings Inc.; Old Republic International Corp.; PennyMac Financial Services Inc.; and Stewart Information Services Corp. (collectively, the "New Peer Group") and (4) the peer group constructed by Radian for the 2018 Annual Report (the "Old Peer Group"), which consisted of Arch Capital Group Ltd; Black Knight Inc.; CoreLogic Inc.; Essent Group Ltd ; Fidelity National Financial Inc. FNF Group; First American Financial Corp; Genworth Financial Inc.; MGIC Investment Corporation; Nationstar Mortgage Holdings Inc.; NMI Holdings Inc.; Old Republic International Corp.; PennyMac Financial Services Inc.; and Stewart Information Services Corp. The New Peer Group used for purposes of this comparison aligns with the peer group used to benchmark executive compensation, which is constructed annually by taking into consideration factors such as business and industry alignment, revenue size and market capitalization.

Total stockholder return is determined by dividing (1) the sum of (a) the cumulative amount of dividends for a given period (assuming dividend reinvestment) and (b) the difference between the share price at the end and the beginning of the period by (2) the share price at the beginning of the period.



Total stockholder returns may not be indicative of returns to be achieved in the future or for periods of time longer than the periods shown in the graph.

Total Return To Shareholders (Includes reinvestment of dividends)

Company Name / Index	Base Period Dec '14	INDEXED RETURNS Years Ending				
		Dec '15	Dec '16	Dec '17	Dec '18	Dec '19
Radian Group Inc.	\$100.00	\$ 80.13	\$107.69	\$123.50	\$ 98.09	\$150.92
NASDAQ Financial 100 Index	\$100.00	\$105.50	\$133.14	\$153.29	\$140.10	\$181.16
New Peer Group	\$100.00	\$101.11	\$120.30	\$138.33	\$127.76	\$177.80
Old Peer Group	\$100.00	\$ 98.73	\$111.91	\$143.00	\$127.68	\$181.32

DIRECTORS & OFFICERS

DIRECTORS

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Radian Group Inc.

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ImageMax, Inc.

Brad L. Conner
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Citizens Financial Group Inc.

Howard B. Culang
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Lisa W. Hess
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SkyTop Capital Management LLC

Lisa Mumford
Former Chief Financial Officer
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Ellington Residential Mortgage REIT

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Co-founder
Ocean Gate Capital Management, LP

Gregory V. Serio, Esq.
Partner
Park Strategies, LLC

Noel J. Spiegel
Retired Deputy Managing Partner
Deloitte & Touche LLP

Richard G. Thornberry
Chief Executive Officer
Radian Group Inc.

EXECUTIVE OFFICERS AND OTHER EXECUTIVES

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Chief Executive Officer

Derek V. Brummer
President, Mortgage

J. Franklin Hall
Senior Executive Vice President
and Chief Financial Officer

Edward J. Hoffman
Senior Executive Vice President,
General Counsel and
Corporate Secretary

Brien J. McMahon
Senior Executive Vice President,
Chief Franchise Officer and
Co-Head of Real Estate

Eric R. Ray
Senior Executive Vice President,
Chief Digital Officer and
Co-Head of Real Estate

Robert J. Quigley
Senior Vice President and
Corporate Controller

Nadia L. Girardot
Senior Vice President and
Chief Audit Executive

Emily S. Riley
Senior Vice President and Chief
Marketing and Communications Officer

Anita M. Scott
Senior Vice President and Chief
Human Resources Officer

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Ms. D. Hess and Messrs. Serio
and Spiegel

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and Spiegel

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Mr. Serio, Chairman
Ms. L. Hess and Messrs. Carney,
Culang and Muzio

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**Stockholders, interested investors,
financial analysts and others may
obtain, without charge, a copy of
Radian's Annual Report on Form
10-K for the year ended December 31,
2019, as filed with the Securities and
Exchange Commission by sending a
written request to:**

Edward J. Hoffman
Corporate Secretary
Radian Group Inc.
1500 Market Street
Philadelphia, Pennsylvania 19102

**or by accessing the Radian website
at www.radian.biz/stockholderreports**

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