FEDERAL HOME LOAN MORTGAGE CORP
Form 10-K
February 15, 2018
UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017
Commission File Number: 001-34139
Federal Home Loan Mortgage Corporation
(Exact name of registrant as specified in its charter)

Federally chartered corporation	52-0904874	8200 Jones Branch Drive McLean, Virginia	22102-3110	(703) 903-2000
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)	(Address of principal executive offices)	(Zip Code)	(Registrant’s telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: None
Securities registered pursuant to Section 12(g) of the Act:
Voting Common Stock, no par value per share (OTCQB: FMCC)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCI)
5% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCKK)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCG)
5.1% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCH)
5.79% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCK)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCL)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCM)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCN)
5.81% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCO)
6% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCP)
Variable Rate, Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCCJ)
5.7% Non-Cumulative Preferred Stock, par value $1.00 per share (OTCQB: FMCKP)
Variable Rate, Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCCS)
6.42% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCCT)
5.9% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKO)
5.57% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKM)
5.66% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKN)
6.02% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKL)
6.55% Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKI)
Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, par value $1.00 per share (OTCQB: FMCKJ)
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x
Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. x Yes ¨ No
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). x Yes ¨ No

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

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

Large accelerated filer x	Accelerated filer ¨
Non-accelerated filer (Do not check if a smaller reporting company) ¨	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 x

The aggregate market value of the common stock held by non-affiliates computed by reference to the price at which the common equity was last sold on June 30, 2017 (the last business day of the registrant's most recently completed second fiscal quarter) was $1.4 billion.

As of February 1, 2018, there were 650,054,731 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE: None

Table of Contents

INTRODUCTION	1
n About Freddie Mac	1
n Our Business	8
n Forward-Looking Statements	12
SELECTED FINANCIAL DATA	14
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	15
n Key Economic Indicators	15
n Consolidated Results of Operations	20
n Consolidated Balance Sheets Analysis	37
n Our Business Segments	38
n Risk Management	104
l Credit Risk	107
l Operational Risk	154
l Market Risk	157
n Liquidity and Capital Resources	164
n Conservatorship and Related Matters	178
n Regulation and Supervision	184
n Contractual Obligations	191
n Off-Balance Sheet Arrangements	193
n Critical Accounting Policies and Estimates	195
RISK FACTORS	198
LEGAL PROCEEDINGS	226
MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES	227
FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	230
CONTROLS AND PROCEDURES	359
DIRECTORS, CORPORATE GOVERNANCE, AND EXECUTIVE OFFICERS	363
n Directors	363
n Corporate Governance	372
n Executive Officers	382
EXECUTIVE COMPENSATION	385
n Compensation Discussion and Analysis	385
n Compensation and Risk	402
n 2017 Compensation Information for NEOs	403
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	411
CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS	414
PRINCIPAL ACCOUNTING FEES AND SERVICES	417
EXHIBITS AND FINANCIAL STATEMENT SCHEDULES	419
GLOSSARY	420
EXHIBIT INDEX	432
SIGNATURES	438
FORM 10-K INDEX	440

Introduction

This Annual Report on Form 10-K includes forward-looking statements that are based on current expectations and are subject to significant risks and uncertainties. These forward-looking statements are made as of the date of this Form 10-K. We undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date of this Form 10-K. Actual results might differ significantly from those described in or implied by such statements due to various factors and uncertainties, including those described in the Forward-Looking Statements and Risk Factors sections of this Form 10-K.

Throughout this Form 10-K, we use certain acronyms and terms that are defined in the Glossary.

ABOUT FREDDIE MAC

Freddie Mac is a GSE chartered by Congress in 1970. Our public mission is to provide liquidity, stability and affordability to the U.S. housing market. We do this primarily by purchasing residential mortgage loans originated by lenders. In most instances, we package these loans into mortgage-related securities, which are guaranteed by us and sold in the global capital markets. We also invest in mortgage loans and mortgage-related securities. We do not originate loans or lend money directly to mortgage borrowers.

We support the U.S. housing market and the overall economy by enabling America's families to access mortgage loan funding with better terms and by providing consistent liquidity to the multifamily mortgage market. We have helped many distressed borrowers keep their homes or avoid foreclosure. We are working with FHFA, our customers and the industry to build a better housing finance system for the nation.

Conservatorship and Government Support for Our Business

Since September 2008, we have been operating in conservatorship, with FHFA as our Conservator. The conservatorship and related matters significantly affect our management, business activities, financial condition and results of operations. Our future is uncertain, and the conservatorship has no specified termination date. We do not know what changes may occur to our business model during or following conservatorship, including whether we will continue to exist.

Our Purchase Agreement with Treasury and the terms of the senior preferred stock we issued to Treasury also affect our business activities. Our ability to access funds from Treasury under the Purchase Agreement is critical to keeping us solvent and avoiding the appointment of a receiver by FHFA under statutory mandatory receivership provisions. We believe that the support provided by Treasury pursuant to the Purchase Agreement currently enables us to have adequate liquidity to conduct normal business activities.

In connection with our entry into conservatorship, we entered into the Purchase Agreement with Treasury. Under the Purchase Agreement, we issued to Treasury both senior preferred stock and a

warrant to purchase common stock. The senior preferred stock and warrant were issued as an initial commitment fee in consideration of Treasury's commitment to provide funding to us under the Purchase Agreement. Treasury, as the holder of the senior preferred stock, is entitled to receive cumulative quarterly cash dividends, when, as and if declared by our Board of Directors. Under the August 2012 amendment to the Purchase Agreement, our cash dividend requirement each quarter is the amount, if any, by which our Net Worth Amount, at the end of the immediately preceding fiscal quarter, less the applicable Capital Reserve Amount, exceeds zero. The applicable Capital Reserve Amount was $600 million in 2017.

On December 21, 2017, the Conservator, acting on our behalf, entered into a Letter Agreement with Treasury. The principal changes pursuant to the Letter Agreement are as follows:

- The senior preferred stock dividend for the dividend period from October 1, 2017 through and including December 31, 2017 was reduced to $2.25 billion.
- The applicable Capital Reserve Amount from January 1, 2018 and thereafter will be $3.0 billion, rather than zero as previously provided. If for any reason we were not to pay our dividend requirement on the senior preferred stock in full in any future period, the applicable Capital Reserve Amount would thereafter be zero.
- The liquidation preference of the senior preferred stock increased by $3.0 billion, to $75.3 billion, on December 31, 2017.

The graph below shows our cumulative draws from Treasury and cumulative dividend payments to Treasury. The Treasury draw amounts shown are the total draws requested based on our quarterly net deficits for the periods presented. Draw requests are funded in the quarter subsequent to any net deficit. Under the Purchase Agreement, the payment of dividends does not reduce the outstanding liquidation preference of the senior preferred stock. The amount of available funding remaining under the Purchase Agreement is $140.5 billion, and will be reduced by any future draws, including the $312 million draw we will take based on our negative net worth at December 31, 2017. For more information on the conservatorship and government support for our business, see MD&A - Conservatorship and Related Matters and Note 2.

Draw Requests from and Dividend Payments to Treasury

Guarantee Portfolios

Investments Portfolios

Commentary

Total Guarantee Portfolio

n 2017 vs. 2016 and 2016 vs. 2015 - In 2017, the total guarantee portfolio grew $119 billion, or 6%, driven by a 4% increase in our single-family credit guarantee portfolio and a 28% increase in our multifamily guarantee portfolio. The total guarantee portfolio grew $91 billion, or 5%, in 2016, driven by a 3% increase in our single-family credit guarantee portfolio and a 32% increase in our multifamily guarantee portfolio.

l The growth in our single-family credit guarantee portfolio in 2017 and 2016 was driven in part by an increase in U.S. single-family mortgage debt outstanding as a result of continued home price

appreciation, combined with our share of U.S. single-family origination volume remaining stable. In addition, new business acquisitions had a higher average loan size compared to older vintages that continued to run off.

- The considerable growth in our multifamily guarantee portfolio in both 2017 and 2016 was primarily driven by an increase in U.S. multifamily mortgage debt outstanding that can be attributed to strong multifamily market fundamentals and low interest rates, coupled with the growth in our share of market new business volume due to our strategic pricing efforts, expansion of our new product offerings and purchase activity associated with certain targeted loans in underserved markets.

Total Investments Portfolio

- 2017 vs. 2016 and 2016 vs. 2015 - Declined $52 billion, or 13%, and $55 billion, or 12%, in 2017 and 2016, respectively, primarily due to repayments and the active disposition of less liquid assets.
- We continue to reduce the mortgage-related investments portfolio as required by the Purchase Agreement and FHFA.

Consolidated Financial Results
Comprehensive Income

Commentary

Key Drivers:

- 2017 vs. 2016
  - Continued growth in our single-family credit guarantee portfolio and higher average contractual guarantee fee rates, offset by the continued reduction in the balance of our mortgage-related investments portfolio, resulted in lower net interest income.
  - Decline in benefit for credit losses in 2017 primarily driven by estimated losses related to the hurricanes.
  - Increased spread-related fair value gains driven by market spread tightening primarily on non-agency mortgage-related securities, partially offset by increased interest rate-related fair value losses driven by lower levels of volatility.
  - Gains on sales of reperforming loans in 2017, compared to losses on sales of seriously delinquent loans in 2016.
  - Proceeds received in 2017 from the Royal Bank of Scotland plc (or RBS) related to litigation involving certain of our non-agency mortgage-related securities.
  - Higher income tax expense due to a reduction in our net deferred tax asset driven by the impact of the Tax Cuts and Jobs Act enacted in December 2017, which reduced the statutory corporate income tax rate from 35% to 21%.

n 2016 vs. 2015

- Continued growth in our single-family credit guarantee portfolio and higher average contractual guarantee fee rates, as well as higher amortization of upfront fees due to increased loan prepayments, offset by the continued reduction in the balance of our mortgage-related investments portfolio, resulted in lower net interest income.
- Decline in benefit for credit losses in 2016 due to a decrease in the number of seriously delinquent loans reclassified from held-for-investment to held-for-sale.
- Higher fair value gains in 2016 due to an increase in long-term interest rates compared to 2015 when long-term interest rates declined slightly.
- Higher fair value gains in 2016 driven by tightening K Certificate benchmark spreads, coupled with improved pricing on K Certificates and SB Certificates and higher new business volume, compared to losses during 2015 as market spreads widened.

OUR BUSINESS

Primary Business Strategies

Our primary business strategies describe how we plan to pursue our Charter Mission through at least 2020. Our core assumption is that the conservatorship will continue with no material changes during that period.

Charter Mission

We are a GSE with a specific and limited corporate purpose (i.e., "Charter Mission") to support the liquidity, stability and affordability of U.S. housing mortgage markets as a participant in the secondary mortgage market, while operating as a commercial enterprise earning an appropriate return. Everything we do must be done within the constraints of our Charter Mission.

Our Twin Goals

We have established overarching twin goals to enable us to reach our Charter Mission:

- A Better Freddie Mac; and
- A Better Housing Finance System

Our Key Strategies

A Better Freddie Mac

We are focused on operating as a very well-run large financial institution by:

- Being a very effective operating organization;
- Being a market leader through customer focus and innovation; and
- Managing risk and economic capital for quality risk-adjusted returns.

A Better Housing Finance System

We are focused on providing leadership, through innovation and constructive forward-looking engagement with FHFA, to improve the liquidity, stability and affordability of the U.S. housing markets by:

- Modernizing and improving the functioning of the mortgage markets;
- Developing greater responsible access to affordable housing; and
- Reducing taxpayer exposure to mortgage risks.

For further information on our goals and detailed strategies for each of our business segments, see MD&A — Our Business Segments.

Our Charter

Our Charter forms the framework for our business activities. Our Charter Mission is to:

- Provide stability in the secondary mortgage market for residential loans;
- Respond appropriately to the private capital market;
- Provide ongoing assistance to the secondary mortgage market for residential loans (including activities relating to loans for low- and moderate-income families, involving a reasonable economic return that may be less than the return earned on other activities) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing; and
- Promote access to mortgage loan credit throughout the United States (including central cities, rural areas and other underserved areas) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing.

Our Charter permits us to purchase first-lien single-family loans with LTV ratios at the time of our purchase of less than or equal to 80%. Our Charter also permits us to purchase first-lien single-family loans that do not meet this criterion if we have certain specified credit protections, which include mortgage insurance from a qualified insurer on the portion of the UPB of the loan that exceeds an 80% LTV ratio, a seller's agreement to repurchase or replace a defaulted loan or the retention by the seller of at least a 10% participation interest in the loan.

This Charter requirement does not apply to multifamily loans or to loans that have the benefit of any guarantee, insurance or other obligation by the United States or any of its agencies or instrumentalities (e.g., the FHA, VA or USDA Rural Development). Additionally, as part of HARP, we purchase single-family refinanced loans we currently own or guarantee without obtaining additional credit enhancement in excess of that already in place for any such loan, even when the LTV ratio of the new loan is above 80%.

Our Charter does not permit us to originate loans or lend money directly to mortgage borrowers in the primary mortgage market. Our Charter limits our purchase of single-family loans to the conforming loan market, which consists of loans originated with UPBs at or below limits determined annually based on changes in FHFA’s housing price index. In most of the United States, the maximum conforming loan limit for a one-family residence has been set at $453,100 for 2018, an increase from $424,100 for 2017 and $417,000 from 2006 to 2016. Higher limits have been established in certain "high-cost" areas (for 2018, up to $679,650 for a one-family residence). Higher limits also apply to two- to four-family residences and to one- to four-family residences in Alaska, Guam, Hawaii and the U.S. Virgin Islands.

Business Segments

We have three reportable segments: Single-family Guarantee, Multifamily and Capital Markets. Certain activities that are not part of a reportable segment are included in the All Other category. For more information on our segments, see MD&A - Our Business Segments and Note 13.

Employees

At February 1, 2018, we had 6,144 full-time and 41 part-time employees.

Properties

Our principal offices consist of four office buildings we own in McLean, Virginia, comprising approximately 1.3 million square feet. We operate our business in the United States and its territories, and accordingly, we generate no revenue from and have no long-lived assets, other than financial instruments, in geographic locations other than the United States and its territories.

Available Information

We file reports and other information with the SEC. In view of the Conservator's succession to all of the voting power of our stockholders, we have not prepared or provided proxy statements for the solicitation of proxies from stockholders since we entered into conservatorship, and do not expect to do so while we remain in conservatorship. Pursuant to SEC rules, our annual reports on Form 10-K contain certain information typically provided in an annual proxy statement.

We make available, free of charge through our website at www.freddiemac.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all other SEC reports and amendments to those reports as soon as reasonably practicable after we electronically file the material with the SEC. In addition, materials that we file with the SEC are available for review and copying at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an internet site (www.sec.gov) that contains reports, proxy and information statements and other information regarding companies that file electronically with the SEC.

We are providing our website addresses and the website address of the SEC here and elsewhere in this Form 10-K solely for your information. Information appearing on our website or on the SEC's website is not incorporated into this Form 10-K.

Pursuant to SEC regulations, public companies are required to disclose certain information when they incur a material direct financial obligation or become directly or contingently liable for a material obligation under an off-balance sheet arrangement. The disclosure must be made in a current report on Form 8-K under Item 2.03 or, if the obligation is incurred in connection with certain types of securities offerings, in prospectuses for those offerings that are filed with the SEC.

Freddie Mac's securities offerings are exempted from SEC registration requirements. As a result, we do

not file registration statements or prospectuses with the SEC with respect to our securities offerings. To comply with the disclosure requirements of Form 8-K relating to the incurrence of material financial obligations, we report these types of obligations either in offering circulars or offering circular supplements that we post on our website or in a current report on Form 8-K, in accordance with a "no-action" letter we received from the SEC staff. In cases where the information is disclosed in an offering circular or offering circular supplement, the document will be posted on our website within the same time period that a prospectus for a non-exempt securities offering would be required to be filed with the SEC.

The website address for disclosure about our debt securities is www.freddiemac.com/debt. From this address, investors can access the offering circular and related supplements for debt securities offerings under Freddie Mac's global debt facility, including pricing supplements for individual issuances of debt securities. Similar information about our STACR and SCR debt notes is available at www.freddiemac.com/creditriskofferings and www.freddiemac.com/multifamily/investors/structured-credit-risk, respectively.

Disclosure about the mortgage-related securities we issue, some of which are off-balance sheet obligations (e.g., K Certificates and SB Certificates), can be found at www.freddiemac.com/mbs. From this address, investors can access information and documents about our mortgage-related securities, including offering circulars and offering circular supplements.

We provide additional information, including product descriptions, investor presentations, securities issuance calendars, transaction volumes and details, redemption notices, and Freddie Mac research, in each case as applicable, on the websites for our business segments, which can be found at www.freddiemac.com/singlefamily, www.freddiemac.com/multifamily, and www.freddiemac.com/capital-markets.

FORWARD-LOOKING STATEMENTS

We regularly communicate information concerning our business activities to investors, the news media, securities analysts and others as part of our normal operations. Some of these communications, including this Form 10-K, contain "forward-looking statements." Examples of forward-looking statements include, but are not limited to, statements pertaining to the conservatorship, our current expectations and objectives for the Single-family Guarantee, Multifamily and Capital Markets segments of our business, our efforts to assist the housing market, our liquidity and capital management, economic and market conditions and trends, our market share, the effect of legislative and regulatory developments and new accounting guidance, the credit quality of loans we own or guarantee, the costs and benefits of our credit risk transfer transactions and our results of operations and financial condition on a GAAP, Segment Earnings and fair value basis. Forward-looking statements involve known and unknown risks and uncertainties, some of which are beyond our control. Forward-looking statements are often accompanied by, and identified with, terms such as "could," "may," "will," "believe," "expect," "anticipate," "forecast" and similar phrases. These statements are not historical facts, but rather represent our expectations based on current information, plans, judgments, assumptions, estimates and projections. Actual results may differ significantly from those described in or implied by such forward-looking statements due to various factors and uncertainties, including those described in the Risk Factors section of this Form 10-K and:

- The actions the U.S. government (including FHFA, Treasury and Congress) may take, or require us to take, including to support the housing markets or to implement FHFA's Conservatorship Scorecards and other objectives for us;
- The effect of the restrictions on our business due to the conservatorship and the Purchase Agreement, including our dividend requirement on the senior preferred stock;
- Changes in our Charter or in applicable legislative or regulatory requirements (including any legislation affecting the future status of our company);
- Changes in the fiscal and monetary policies of the Federal Reserve, including the balance sheet normalization program announced in October 2017 to reduce the Federal Reserve's holdings of mortgage-related securities;
- Changes in tax laws, including those made by the Tax Cuts and Jobs Act enacted in December 2017;
- Changes in accounting policies, practices or guidance (e.g., FASB's accounting standards update related to the measurement of credit losses of financial instruments);
- Changes in economic and market conditions, including changes in employment rates, interest rates, spreads and home prices;
- Changes in the U.S. residential mortgage market, including changes in the supply and type of loan products (e.g., refinance vs. purchase, and fixed-rate vs. ARM);
- The success of our efforts to mitigate our losses on our Legacy and relief refinance single-family loan portfolio;
- The success of our strategy to transfer mortgage credit risk through STACR debt note, ACIS, K Certificate, SB Certificate and other credit risk transfer transactions;
- Our ability to maintain adequate liquidity to fund our operations;

- Our ability to maintain the security and resiliency of our operational systems and infrastructure (e.g., against cyberattacks);
- Our ability to effectively execute our business strategies, implement new initiatives and improve efficiency;
- The adequacy of our risk management framework;
- Our ability to manage mortgage credit risk, including the effect of changes in underwriting and servicing practices;
- Our ability to limit or manage our economic exposure and GAAP earnings exposure to interest-rate volatility and spread volatility, including the availability of derivative financial instruments needed for interest-rate risk management purposes;
- Our operational ability to issue new securities, make timely and correct payments on securities and provide initial and ongoing disclosures;
- Changes or errors in the methodologies, models, assumptions and estimates we use to prepare our financial statements, make business decisions and manage risks;
- Changes in investor demand for our debt or mortgage-related securities;
- Changes in the practices of loan originators, servicers, investors and other participants in the secondary mortgage market;
- The occurrence of a major natural or other disaster in areas in which our offices or significant portions of our total mortgage portfolio are located; and
- Other factors and assumptions described in this Form 10-K, including in the MD&A section.

Forward-looking statements are made only as of the date of this Form 10-K, and we undertake no obligation to update any forward-looking statements we make to reflect events or circumstances occurring after the date of this Form 10-K.

Selected Financial Data

Selected Financial Data

The selected financial data presented below should be reviewed in conjunction with MD&A and our consolidated financial statements and accompanying notes.

	As of or For the Year Ended December 31,				
(Dollars in millions, except share-related amounts)	2017	2016	2015	2014	2013
Statements of Comprehensive Income Data					
Net interest income	$14,164	$14,379	$14,946	$14,263	$16,468
Benefit (provision) for credit losses	84	803	2,665	(58)	2,465
Non-interest income (loss)	6,869	500	(3,599)	(113)	8,519
Non-interest expense	(4,283)	(4,043)	(4,738)	(3,090)	(2,089)
Income tax (expense) benefit	(11,209)	(3,824)	(2,898)	(3,312)	23,305
Net income	5,625	7,815	6,376	7,690	48,668
Comprehensive income	5,558	7,118	5,799	9,426	51,600
Net income (loss) attributable to common stockholders	(3,244)	97	(23)	(2,336)	(3,531)
Net income (loss) per common share - basic and diluted	(1.00)	0.03	(0.01)	(0.72)	(1.09)
Cash dividends per common share	—	—	—	—	—
Weighted average common shares outstanding - basic and diluted (in millions)	3,234	3,234	3,235	3,236	3,238
Balance Sheets Data					
Loans held-for-investment, at amortized cost by consolidated trusts (net of allowances for loan losses)	$1,774,286	$1,690,218	$1,625,184	$1,558,094	$1,529,905
Real estate owned, net	892	1,198	1,725	2,558	4,551
Total assets	2,049,776	2,023,376	1,985,892	1,945,360	1,965,831
Debt securities of consolidated trusts held by third parties	1,720,996	1,648,683	1,556,121	1,479,473	1,433,984
Other debt	313,634	353,321	414,148	449,890	506,537
All other liabilities	15,458	16,297	12,683	13,346	12,475
Total stockholders' equity	(312)	5,075	2,940	2,651	12,835
Portfolio Balances - UPB					
Mortgage-related investments portfolio	$253,455	$298,426	$346,911	$408,414	$461,024
Total Freddie Mac mortgage-related securities	1,962,372	1,832,810	1,729,493	1,637,086	1,592,511
Total mortgage portfolio	2,097,630	2,011,414	1,941,587	1,910,106	1,914,661
TDRs on accrual status	51,720	77,399	82,347	82,908	78,708
Non-accrual loans	17,817	16,272	22,649	33,130	43,457
Ratios					
Return on average assets	0.3%	0.4%	0.3%	0.4%	2.5%
Allowance for loan losses as percentage of loans, held-for-investment	0.5	0.7	0.9	1.3	1.4
Equity to assets	0.1	0.2	0.1	0.4	0.5

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

KEY ECONOMIC INDICATORS

The following graphs and related discussion present certain macroeconomic indicators that can significantly affect our business and financial results.

Single-Family Home Prices

National Home Prices

Effects on Financial Results

- Changes in home prices affect the amount of equity that borrowers have in their homes. Borrowers with less equity typically have higher delinquency rates.
- As home prices decline, the severity of losses we incur on defaulted loans that we hold or guarantee increases because the amount we can recover from the property securing the loan decreases. Increases in home prices lower the losses we incur on defaulted loans.

Commentary

- Home prices continued to appreciate during 2017, increasing 7.1%, compared to an increase of 6.4% during 2016, based on our own non-seasonally adjusted price index of single-family homes funded by loans owned or guaranteed by us or Fannie Mae.
- We expect near-term home price growth will moderate driven by a gradual increase in housing supply and modestly higher mortgage interest rates.

- We do not expect national home prices to be substantially affected by the Tax Cuts and Jobs Act, but home price growth in housing markets with higher state and local taxes (e.g., New Jersey and New York) could be affected.

Interest Rates

Key Market Interest Rates

Effects on Financial Results

- The 30-year Primary Mortgage Market Survey ("PMMS") interest rate is indicative of what a consumer could expect to be offered on a first-lien, prime, home purchase or refinance mortgage with an LTV of 80%. Increases in the PMMS rate typically result in decreases in refinancing activity and originations. Decreases in the PMMS rate typically result in increases in refinancing activity and originations.
- Changes in the 10-year and 2-year LIBOR interest rates affect the fair value of certain of our assets and liabilities, including derivatives, measured at fair value. A smaller interest rate fluctuation from period to period generally results in smaller fair value gains and losses, while a larger fluctuation generally results in larger fair value gains and losses.

- Changes in the 3-month LIBOR rate affect the interest earned on our short-term investments and interest expense on our short-term funding.
- For additional information on the effect of LIBOR rates on our financial results, see Our Business Segments - Capital Markets - Market Conditions.

Commentary

- Mortgage interest rates for 30-year fixed-rate loans are closely related to other long-term interest rates such as the 10-year LIBOR rate. When the 10-year LIBOR rate increases, mortgage interest rates for 30-year fixed-rate loans usually also increase. When the 10-year LIBOR rate declines, mortgage interest rates for 30-year fixed-rate loans usually also decline.
- Mortgage interest rates, as indicated by the PMMS rate, were lower at the end of 2017 than the end of 2016, while long-term interest rates, as indicated by the 10-year LIBOR rate, were higher. The PMMS rate and 10-year LIBOR rate were both higher at the end of 2016 than the end of 2015.
- The quarterly ending and quarterly average short-term interest rates, as indicated by the 3-month LIBOR rate, were higher at the end of 2017 than the end of 2016 and higher at the end of 2016 than the end of 2015.
- The Federal Reserve raised short-term interest rates five times over the last three years, most recently in December 2017.

Unemployment Rate

Unemployment Rate and Job Creation[1]

Source: U.S. Bureau of Labor Statistics

(1) Excludes Puerto Rico and the U.S. Virgin Islands.

Effect on Financial Results

- Changes in the national unemployment rate can affect several market factors, including the demand for both single-family and multifamily housing and the level of loan delinquencies.
- Decreases in the national unemployment rate typically result in lower levels of delinquencies, which often result in a decrease in expected credit losses on our total mortgage portfolio.
- Increases in the national unemployment rate typically result in higher levels of delinquencies, which often result in an increase in expected credit losses on our total mortgage portfolio.

Commentary

- During 2017, average monthly net new jobs (non-farm) decreased, while the national unemployment rate declined to the lowest level since December 2000.

CONSOLIDATED RESULTS OF OPERATIONS

You should read this discussion of our consolidated results of operations in conjunction with our consolidated financial statements and accompanying notes.

The table below compares our consolidated results of operations for the past three years.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Net interest income	$14,164	$14,379	$14,946	($215)	(1)%	($567)	(4)%
Benefit (provision) for credit losses	84	803	2,665	(719)	(90)%	(1,862)	(70)%
Net interest income after benefit (provision) for credit losses	14,248	15,182	17,611	(934)	(6)%	(2,429)	(14)%
Non-interest income (loss):							
Gains (losses) on extinguishment of debt	341	(211)	(240)	552	262%	29	12%
Derivative gains (losses)	(1,988)	(274)	(2,696)	(1,714)	(626)%	2,422	90%
Net impairment of available-for-sale securities recognized in earnings	(18)	(191)	(292)	173	91%	101	35%
Other gains (losses) on investment securities recognized in earnings	1,054	(78)	508	1,132	1,451%	(586)	(115)%
Other income (loss)	7,480	1,254	(879)	6,226	496%	2,133	243%
Total non-interest income (loss)	6,869	500	(3,599)	6,369	1,274%	4,099	114%
Non-interest expense:							
Administrative expense	(2,106)	(2,005)	(1,927)	(101)	(5)%	(78)	(4)%
REO operations expense	(189)	(287)	(338)	98	34%	51	15%
Temporary Payroll Tax Cut Continuation Act of 2011 expense	(1,340)	(1,152)	(967)	(188)	(16)%	(185)	(19)%
Other expense	(648)	(599)	(1,506)	(49)	(8)%	907	60%
Total non-interest expense	(4,283)	(4,043)	(4,738)	(240)	(6)%	695	15%
Income before income tax expense	16,834	11,639	9,274	5,195	45%	2,365	26%
Income tax expense	(11,209)	(3,824)	(2,898)	(7,385)	(193)%	(926)	(32)%
Net income (loss)	5,625	7,815	6,376	(2,190)	(28)%	1,439	23%
Total other comprehensive income (loss), net of taxes and reclassification adjustments	(67)	(697)	(577)	630	90%	(120)	(21)%
Comprehensive income (loss)	$5,558	$7,118	$5,799	($1,560)	(22)%	$1,319	23%

See Critical Accounting Policies and Estimates for information concerning certain significant accounting policies and estimates applied in determining our reported results of operations and Note 1 for information on our accounting policies and a summary of other significant accounting policies and the related notes in which information about them can be found.

Net Interest Income

Explanation of Key Drivers of Net Interest Income

Net interest income consists of several primary components:

- Contractual net interest income - consists of two components:
  - Guarantee fees on debt securities issued by consolidated trusts. We record interest income on loans held by consolidated trusts and interest expense on the debt securities issued by the trusts. The difference between the interest income on the loans and the interest expense on the debt represents the guarantee fee income we receive as compensation for our guarantee of the principal and interest payments of the issued debt securities. This difference includes the legislated 10 basis point increase in guarantee fees that is remitted to Treasury as part of the Temporary Payroll Tax Cut Continuation Act of 2011; and
  - The difference between the interest income earned on all other interest-earning assets, excluding loans held by consolidated trusts, and the interest expense incurred on the liabilities used to fund those assets.

Contractual net interest income is driven by the volume of assets in the mortgage-related investments portfolio and the interest rate differential between those interest-earning assets and the related interest-bearing liabilities.

- Amortization of cost basis adjustments - consists of cost basis adjustments, such as premiums and discounts on loans, investment securities and debt that are amortized into interest income or interest expense based on the effective yield over the contractual life of the associated financial instrument.

The largest portion of our total net amortization relates to loans and debt securities of consolidated trusts, which includes amortization of the upfront fees we receive when we acquire a loan. Amortization related to investment securities, other debt and other assets and liabilities makes up a smaller portion.

The net amortization of loans and debt securities of consolidated trusts is primarily driven by actual prepayments on the underlying loans. Increases in actual prepayments result in higher net amortization, while decreases in actual prepayments result in lower net amortization. The timing of amortization of loans may differ from the timing of amortization of the securities backed by the loans, as the proceeds from the loans backing these securities are remitted to the security holders at a date subsequent to the date these proceeds are received by us.

- Hedge accounting impact - consists of deferred gains and losses on closed cash flow hedges related to forecasted debt issuances that are reclassified from AOCI to net interest income when the related forecasted transaction affects net interest income. Upon adoption of amended hedge accounting guidance in 4Q 2017, for qualifying fair value hedges, we began recording both the change in the fair value of the hedging instrument, including the accrual of periodic cash settlements, and the change in the fair value of the hedged item attributable to the risk being hedged, within net interest income. See Note 9 for additional detail on this change.

Components of Net Interest Income

The table below presents the components of net interest income.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Contractual net interest income:							
Guarantee fee income	$3,270	$2,997	$2,722	$273	9 %	$275	10 %
Guarantee fee income related to the Temporary Payroll Tax Cut Continuation Act of 2011	1,314	1,142	957	172	15 %	185	19 %
Other contractual net interest income	6,400	6,896	8,106	(496)	(7)%	(1,210)	(15)%
Total contractual net interest income	10,984	11,035	11,785	(51)	— %	(750)	(6)%
Net amortization - loans and debt securities of consolidated trusts	3,258	3,333	2,883	(75)	(2)%	450	16 %
Net amortization - other assets and debt	(85)	202	506	(287)	(142)%	(304)	(60)%
Hedge accounting impact	7	(191)	(228)	198	104 %	37	16 %
Net interest income	$14,164	$14,379	$14,946	($215)	(1)%	($567)	(4)%

Key Drivers:

- Guarantee fee income
  - 2017 vs. 2016 and 2016 vs. 2015 - increased during both comparative periods as a result of higher average contractual guarantee fee rates, as well as the continued growth in the size of the Core single-family loan portfolio. Average contractual guarantee fees are generally higher on mortgage loans in our Core single-family loan portfolio compared to those in our Legacy and relief refinance single-family loan portfolio.
- Other contractual net interest income
  - 2017 vs. 2016 and 2016 vs. 2015 - decreased during both comparative periods primarily due to the continued reduction in the balance of our mortgage-related investments portfolio, pursuant to the portfolio limits established by the Purchase Agreement and FHFA. See Conservatorship and Related Matters - Limits on Our Mortgage-Related Investments Portfolio and Indebtedness for additional discussion of the limits on the mortgage-related investments portfolio.
- Net amortization of loans and debt securities of consolidated trusts
  - 2016 vs. 2015 - increased primarily due to higher amortization of mortgage loan upfront fees and basis adjustments on debt securities of consolidated trusts. The increase in amortization was primarily driven by higher prepayment rates on single-family loans during 2016 compared to 2015.

- Net amortization of other assets and debt
  - 2017 vs. 2016 and 2016 vs. 2015 - decreased during both comparative periods primarily due to less accretion of previously recognized other-than-temporary impairments on non-agency mortgage-related securities. The decrease in accretion is due to a decline in the population of impaired securities as a result of our active disposition of these securities and a decline in new other-than-temporary impairments recognized.
- Hedge accounting impact
  - 2017 vs. 2016 - increased primarily due to the inclusion of fair value hedge accounting results within net interest income beginning in 4Q 2017, due to the adoption of amended hedge accounting guidance. In prior periods, this activity was included in other income and derivative gains (losses).

Net Interest Yield Analysis

The table below presents an analysis of interest-earning assets and interest-bearing liabilities. To calculate the average balances, we generally use a daily weighted average of amortized cost. When daily average balance information is not available, such as for mortgage loans, we use monthly averages. Mortgage loans on non-accrual status, where interest income is generally recognized when collected, are included in the average balances.

	Year Ended December 31,								
	2017			2016			2015		
(Dollars in millions)	Average Balance	Interest Income (Expense)	Average Rate	Average Balance	Interest Income (Expense)	Average Rate	Average Balance	Interest Income (Expense)	Average Rate
Interest-earning assets:									
Cash and cash equivalents	$10,965	$48	0.44 %	$16,932	$42	0.25 %	$12,482	$8	0.06 %
Securities purchased under agreements to resell	57,883	588	1.02	59,639	217	0.36	51,219	58	0.11
Advances to lenders and other secured lending	859	21	2.42	484	11	2.28	161	4	2.48
Mortgage-related securities:									
Mortgage-related securities	164,663	6,402	3.89	189,982	7,262	3.82	226,162	8,706	3.85
Extinguishment of PCs held by Freddie Mac	(87,665)	(3,264)	(3.72)	(94,624)	(3,509)	(3.71)	(107,986)	(3,929)	(3.64)
Total mortgage-related securities, net	76,998	3,138	4.08	95,358	3,753	3.94	118,176	4,777	4.04
Non-mortgage-related securities	17,558	277	1.58	15,734	102	0.65	10,699	17	0.16
Loans held by consolidated trusts[(1)]	1,730,000	58,746	3.40	1,649,727	55,417	3.36	1,590,768	55,867	3.51
Loans held by Freddie Mac[(1)]	117,043	4,989	4.26	135,882	5,623	4.14	157,261	6,359	4.04
Total interest-earning assets	$2,011,306	$67,807	3.37 %	$1,973,756	$65,165	3.30 %	$1,940,766	$67,090	3.46 %
Interest-bearing liabilities:									
Debt securities of consolidated trusts including PCs held by Freddie Mac	$1,753,983	($50,920)	(2.90)%	$1,674,474	($48,108)	(2.87)%	$1,611,388	($49,465)	(3.07)%
Extinguishment of PCs held by Freddie Mac	(87,665)	3,264	3.72	(94,624)	3,509	3.71	(107,986)	3,929	3.64
	1,666,318	(47,656)	(2.86)	1,579,850	(44,599)	(2.82)	1,503,402	(45,536)	(3.03)

Total debt securities of consolidated trusts held by third parties									
Other debt:									
Short-term debt	72,071	(615	)(0.85)	86,284	(350	)(0.41)	108,096	(173	)(0.16)
Long-term debt	264,354	(5,372	)(2.03)	298,040	(5,837	)(1.96)	313,502	(6,435	)(2.05)
Total other debt	336,425	(5,987	)(1.78)	384,324	(6,187	)(1.61)	421,598	(6,608	)(1.57)
Total interest-bearing liabilities	2,002,743	(53,643	)(2.68)	1,964,174	(50,786	)(2.58)	1,925,000	(52,144	)(2.71)
Impact of net non-interest-bearing funding	8,563	—	0.01	9,582	—	0.01	15,766	—	0.02
Total funding of interest-earning assets	$2,011,306	($53,643)	(2.67)%	$1,973,756	($50,786)	(2.57)%	$1,940,766	($52,144)	(2.69)%
Net interest income/yield		$14,164	0.70 %		$14,379	0.73 %		$14,946	0.77 %

(1) Loan fees, primarily consisting of amortization of upfront fees, included in interest income were $2.4 billion, $2.6 billion and $2.0 billion for loans held by consolidated trusts and $162 million, $215 million and $383 million for loans held by Freddie Mac during 2017, 2016 and 2015, respectively.

Net Interest Income Rate / Volume Analysis

The table below presents a rate and volume analysis of our net interest income. Our net interest income reflects the reversal of interest income accrued, net of interest received on a cash basis, related to mortgage loans that are on non-accrual status.

	Variance Analysis					
	2017 vs. 2016			2016 vs. 2015		
(Dollars in millions)	Rate	Volume	Total Change	Rate	Volume	Total Change
Interest-earning assets:						
Cash and cash equivalents	$8	($2)	$6	$34	$—	$34
Securities purchased under agreements to resell	380	(9)	371	147	12	159
Advances to lenders and other secured lending	1	9	10	—	7	7
Mortgage-related securities:						
Mortgage-related securities	123	(983)	(860)	(61)	(1,383)	(1,444)
Extinguishment of PCs held by Freddie Mac	(14)	259	245	(74)	494	420
Total mortgage-related securities, net	109	(724)	(615)	(135)	(889)	(1,024)
Non-mortgage-related securities	161	14	175	74	11	85
Loans held by consolidated trusts	609	2,720	3,329	(2,479)	2,029	(450)
Loans held by Freddie Mac	165	(799)	(634)	146	(882)	(736)
Total interest-earning assets	$1,433	$1,209	$2,642	($2,213)	$288	($1,925)
Interest-bearing liabilities:						
Debt securities of consolidated trusts including PCs held by Freddie Mac	($508)	($2,304)	($2,812)	$3,246	($1,889)	$1,357
Extinguishment of PCs held by Freddie Mac	14	(259)	(245)	74	(494)	(420)
Total debt securities of consolidated trusts held by third parties	(494)	(2,563)	(3,057)	3,320	(2,383)	937
Other debt:						
Short-term debt	(331)	66	(265)	(218)	41	(177)
Long-term debt	(214)	679	465	299	299	598
Total other debt	(545)	745	200	81	340	421
Total interest-bearing liabilities	($1,039)	($1,818)	($2,857)	$3,401	($2,043)	$1,358
Net interest income	$394	($609)	($215)	$1,188	($1,755)	($567)

Benefit (Provision) for Credit Losses

Explanation of Key Drivers of Provision for Credit Losses

The benefit (provision) for credit losses predominantly relates to single-family loans and includes components for both collectively impaired loans and individually impaired loans.

- Collectively impaired loans - The provision for collectively impaired loans is primarily driven by the volume of newly impaired loans and changes in estimated probabilities of default and estimated loss severities for these loans. Estimated probabilities of default and estimated loss severities are based on current conditions and historical data and are heavily influenced by changes in home prices. These estimates are also affected by a number of other factors, such as local and regional economic conditions, changes in reperformance and default rates and the success of our borrower assistance programs.
- Individually impaired loans - The provision for individually impaired loans is primarily driven by the volume of our loss mitigation activity (e.g., loan modifications) that results in loans being considered TDRs, the payment performance of our individually impaired mortgage portfolio and changes in estimated probabilities of default and estimated loss severities, which affect the future cash flows we expect to receive from these loans. Estimated probabilities of default and estimated loss severities for individually impaired loans are based on the same current conditions and historical data and are affected by the same factors noted above for collectively impaired loans.

Our allowance for loan losses and provision for credit losses are significantly affected by the "interest rate concessions" we make on loans that we have modified (i.e., reductions in the contractual interest rate). When a loan is modified and considered individually impaired, we measure impairment based on the present value of the expected future cash flows discounted at the loan’s original effective interest rate. Under this methodology, we record a loss at the time a loan is modified equal to the difference in the present value of expected future cash flows resulting from the change in the modified loan’s contractual interest rate, which increases the provision for credit losses in that period. An increase in mortgage interest rates lengthens the expected life of individually impaired loans, which increases the impairment on these loans and results in an increase in the provision for credit losses. When a modified loan subsequently performs according to its new contractual terms and we receive the new contractual cash flows (i.e., principal and interest payments), a portion of the discount that was previously applied to those cash flows is amortized into earnings each period and is recognized as a reduction in the provision for credit losses in the period in which the cash flows are received. We refer to this reduction in the provision for credit losses as the "amortization of interest rate concessions."

Our benefit (provision) for credit losses and the amount of charge-offs that we record in the future will be affected by a number of factors, such as:

- Actual level of loan defaults;
- The effect of loss mitigation efforts;
- Any government actions or programs that affect the ability of borrowers to refinance loans, such as loans with an LTV ratio greater than 100%, or obtain modifications;
- Changes in property values;

- Regional economic conditions, including unemployment rates;
- Additional delays in the foreclosure process; and
- Third-party mortgage insurance coverage and recoveries.

Management adjustments may be necessary to take into consideration external factors and current economic events that have occurred but that are not yet reflected in the factors used to derive the outputs of the models used in our provisioning process. Significant judgment is exercised in making these adjustments.

The amount of our benefit (provision) for credit losses may also vary from period to period based on additional factors, such as reclassification of loans from held-for-investment to held-for-sale.

Components of Benefit (Provision) for Credit Losses

The table below presents the components of our benefit (provision) for credit losses.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in billions)	2017	2016	2015	$	%	$	%
Benefit (provision) for newly impaired loans	($0.7)	($0.8)	($0.9)	$0.1	13%	$0.1	11%
Amortization of interest rate concessions	0.7	0.9	1.2	(0.2)	(22)%	(0.3)	(25)%
Reclassifications of held-for-investment loans to held-for-sale loans	0.5	0.8	2.3	(0.3)	(38)%	(1.5)	(65)%
Other, including changes in estimated default probability and loss severity	(0.4)	(0.1)	0.1	(0.3)	(300)%	(0.2)	(200)%
Benefit (provision) for credit losses	$0.1	$0.8	$2.7	($0.7)	(88)%	($1.9)	(70)%

Key Drivers:

- 2017 vs. 2016 - Benefit for credit losses declined in 2017 compared to 2016 primarily driven by:
  - Estimated losses related to hurricanes in 2017;
  - A decrease in the accretion of TDR concessions due to a significant increase in the reclassification of reperforming loans from held-for-investment to held-for-sale; and
  - A change in accounting policy that was elected on January 1, 2017 for loan reclassification from held-for-investment to held-for-sale. See Item Affecting Multiple Lines - Single-Family Loan Reclassifications for further information about this change.

  This decrease was partially offset by:
  - Improvement in our estimated loss severity.
- 2016 vs. 2015 - Benefit for credit losses declined in 2016 compared to 2015 primarily due to a decrease in the number of seasoned single-family loans reclassified from held-for-investment to held-for sale in 2016.

Derivative Gains (Losses)

Explanation of Key Drivers of Derivative Gains (Losses)

Derivative instruments are a key component of our interest-rate risk management strategy. We use derivatives to economically hedge our interest-rate risk exposure. We primarily use interest-rate swaps, option-based derivatives such as swaptions and futures to manage our exposure to changes in interest-rates. We consider the cost of derivatives used in interest-rate risk management to be an inherent part of the cost of funding our mortgage-related investments portfolio.

In addition, we routinely enter into commitments to purchase and sell loans and mortgage-related securities. The majority of these commitments are accounted for as derivative instruments.

We continue to align our derivative portfolio with the changing duration of our assets and liabilities so as to economically hedge them. We manage our exposure to interest-rate risk on an economic basis to a low level as measured by our models. We believe the impact of derivatives on our GAAP financial results should be considered in the context of our overall interest-rate risk profile, including our PMVS and duration gap results. For more information about our interest-rate risk management activities and the sensitivity of reported GAAP earnings to those activities, see Risk Management - Market Risk.

During 2017, we started applying hedge accounting to certain single-family mortgage loans and long-term debt to reduce our GAAP earnings volatility. For the first three quarters of 2017, we included gains and losses on derivatives designated in qualifying hedge relationships in other income. Beginning in 4Q 2017, due to the adoption of amended hedge accounting guidance, we included gains and losses on derivatives designated in qualifying hedge relationships in the same line used to present the earnings effect of the hedged item. See Note 9 for more information on hedge accounting and the changes made during 2017.

In addition to fair value changes, derivative gains (losses) include accrual of periodic cash settlements for derivatives while not designated in qualifying hedge relationships. For the first three quarters of 2017, we included the accrual of periodic cash settlements on derivatives in qualifying hedge relationships in derivatives gains (losses). Beginning in 4Q 2017, we included the accrual of periodic cash settlements on derivatives in qualifying hedge relationships in the same line used to present the earnings effect of the hedged item.

- Fair value changes - Represent changes in the fair value of our derivatives based on market conditions at the end of the period or at the time the derivative instrument is terminated. These amounts may or may not be realized over time, depending on future changes in market conditions and the terms of our derivative instruments.
- Accrual of periodic cash settlements - Consists of the net amount we accrue during a period for interest-rate swap payments that we will make or receive. This accrual represents the ongoing cost of our hedging activities, and is economically equivalent to interest expense.

Gains and losses on derivatives are affected by a number of factors, including:

- Changes in interest rates - Our primary derivative instruments are interest-rate swaps, including pay-fixed and receive-fixed interest-rate swaps. With a pay-fixed interest-rate swap, we pay a fixed

rate of interest and receive a variable rate of interest based on a specified notional balance (the notional balance is for calculation purposes only). As interest rates decline, we recognize derivative losses, as the amount of interest we pay remains fixed, and the amount of interest we receive declines. As rates rise, we recognize derivative gains, as the amount of interest we pay remains fixed, but the amount of interest we receive increases. With a receive-fixed interest-rate swap, the opposite results occur.

- Implied volatility - Many of our assets and liabilities have embedded prepayment options. We use option-based derivatives, including swaptions, to economically hedge the prepayment options embedded in our mortgage assets and callable debt. Fair value gains and losses on swaptions are sensitive to changes in both interest rates and implied volatility, which reflects the market's expectation of future changes in interest rates. Assuming all other factors are unchanged, including interest rates, purchased swaptions generally become more valuable as implied volatility increases and less valuable as implied volatility decreases, with the opposite being true for written swaptions.
- Changes in the shape of the yield curve - We own assets and have outstanding debt with different cash flows along the yield curve. We use derivatives to hedge the yield exposure of assets and debt, resulting in derivatives with different maturities. As a result, changes in the shape of the yield curve will affect our derivative gains (losses).
- Changes in the composition of our derivative portfolio - The mix and balance of our derivative portfolio changes from period to period as we enter into or terminate derivative instruments to respond to changes in interest rates and changes in the balances and modeled characteristics of our assets and liabilities. Changes in the composition of our derivative portfolio will affect the derivative gains and losses we recognize in a given period, thereby affecting the volatility of comprehensive income.

Components of Derivative Gains (Losses)

The table below presents the components of derivative gains (losses).

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Fair value change in interest-rate swaps	$626	$178	($778)	$448	252%	$956	123%
Fair value change in option-based derivatives	(1,041)	421	258	(1,462)	(347)%	163	63%
Fair value change in other derivatives	17	887	22	(870)	(98)%	865	3,932%
Accrual of periodic cash settlements	(1,590)	(1,760)	(2,198)	170	10%	438	20%
Derivative gains (losses)	($1,988)	($274)	($2,696)	($1,714)	(626)%	$2,422	90%

Key Drivers:

- 2017 vs. 2016 - Losses increased, driven by lower levels of volatility during 2017, resulting in larger losses in our options portfolio, coupled with lower fair value gains in our pay-fixed interest rate swaps as long-term interest rates increased less. This was partially offset by reduced fair value losses in our receive-fixed interest rate swaps.
- 2016 vs. 2015 - Derivative losses declined during 2016 primarily due to an increase in longer-term interest rates during the fourth quarter of 2016 resulting in an improvement in the fair value of our

pay-fixed interest-rate swaps and forward commitments to issue debt securities of consolidated trusts. This improvement in fair value was partially offset by losses in our receive-fixed-interest-rate swaps. The 10-year par swap rate increased 13 basis points during 2016, while the 10-year par swap rate declined 10 basis points during 2015.

Other Income (Loss)

Explanation of Key Drivers of Other Income (Loss)

The table below presents the components of other income (loss).

(Dollars in millions)
Other income (loss)
Non-agency mortgage-related securities settlements
Gains (losses) on loans
Gains (losses) on held-for-sale loan purchase commitments
All other
Fair value hedge accounting
Change in fair value of derivatives in qualifying hedge relationships
Change in fair value of hedged items in qualifying hedge relationships
Total other income (loss)

Key Drivers:

- 2017 vs. 2016 - Other income (loss) increased reflecting:
  - Increased income from our litigation settlement related to our non-agency mortgage-related securities. While we had one large settlement with RBS during 2017, we did not have any significant settlements during 2016; and
  - Greater gains recognized on a higher volume of reperforming loans reclassified from held-for-investment to held-for-sale and subsequently sold, coupled with less loss recognized in 2017 on the reclassification of seriously delinquent loans from held-for-investment to held-for-sale as a result of an accounting policy change in 2017. See Item Affecting Multiple Lines - Single-Family Loan Reclassifications for more information.
- 2016 vs. 2015 - Other income (loss) increased reflecting:
  - Decreased lower-of-cost-or-fair-value adjustments as we reclassified fewer seasoned single-family loans from held-for-investment to held-for-sale during 2016; and
  - Increased gains on multifamily mortgage loans and commitments for which we have elected the fair value option, due to increased market spread-related fair value gains. K Certificate benchmark spreads tightened during 2016 compared to these spreads widening during 2015.

Other Comprehensive Income (Loss)

Explanation of Key Drivers of Other Comprehensive Income (Loss)

Our investments in securities classified as available-for-sale are measured at fair value on our consolidated balance sheets. The fair value of these securities is primarily affected by changes in interest rates, market spreads and the movement of these securities towards maturity. All unrealized gains and losses on these securities are excluded from earnings and reported in other comprehensive income until realized. We reclassify our unrealized gains and losses from AOCI to earnings upon the sale of the securities or if the securities are determined to be other-than-temporarily impaired.

If, subsequent to the recognition of other-than-temporary impairment, our expectation of the cash flows we will receive on a previously impaired security has significantly increased, we will accrete that increase in cash flows into earnings. The accretion into earnings will generally reduce the amount of unrealized gains that we would have otherwise recognized if not for the accretion.

The following table presents the attribution of the other comprehensive income (loss) reported in our consolidated statements of comprehensive income.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Other comprehensive income, excluding certain items	$1,084	($29)	$374	$1,113	3,838%	($403)	(108)%
Excluded items							
Accretion due to significant increases in expected cash flows on previously impaired available-for-sale securities	(164)	(299)	(449)	135	45%	150	33%
Realized (gains) losses reclassified from AOCI	(987)	(369)	(502)	(618)	(167)%	133	26%
Total excluded items	(1,151)	(668)	(951)	(483)	(72)%	283	30%
Total other comprehensive income (loss)	($67)	($697)	($577)	$630	90%	($120)	(21)%

Key Drivers:

- Other comprehensive income, excluding certain items
  - 2017 vs. 2016 - increased primarily due to market spread related gains as market spreads on non-agency and agency mortgage-related securities tightened more during 2017, coupled with smaller interest rate-related losses due to smaller increases in long-term interest rates during 2017.
  - 2016 vs. 2015 - decreased primarily due to unrealized losses resulting from an increase in longer-term interest rates, coupled with a decrease in unrealized gains as our non-agency mortgage-related securities portfolio continued to decline consistent with the reduction of our mortgage-related investments portfolio pursuant to the limits established by the Purchase Agreement and FHFA.

Excluded items include:

- Accretion due to significant increases in expected cash flows on previously impaired available-for-sale securities
  - 2017 vs. 2016 and 2016 vs. 2015 - decreased during both comparative periods primarily due to a decline in the population of impaired securities as a result of our active dispositions of these securities, coupled with a decline in new other-than-temporary impairments.
- Realized (gains) losses reclassified from AOCI
  - 2017 vs. 2016 - reflected larger amounts of reclassified gains during 2017 due to higher realized gains on our non-agency and agency mortgage-related securities sold, as a result of additional spread tightening and an increase in sales of non-agency mortgage-related securities.
  - 2016 vs. 2015 - reflected smaller amounts of reclassified gains during 2016 primarily due to a decline in sales of non-agency mortgage-related securities in an unrealized gain position.

Other Key Drivers

Explanation of Other Key Drivers

Key drivers for other line items for 2017 vs. 2016 and 2016 vs. 2015 include:

- Gains (losses) on extinguishment of debt
  - 2017 vs. 2016 - improved primarily due to an increase in the amount of gains recognized from the extinguishment of certain fixed-rate debt securities of consolidated trusts (i.e., PCs), as market interest rates increased between the time of issuance and repurchase. The amount of extinguishment gains or losses may vary, as the type and amount of PCs selected for repurchase are based on our investment and funding strategies, including our efforts to support the liquidity and price performance of our PCs.
  - 2016 vs. 2015 - losses decreased primarily due to an increase in longer-term interest rates during the fourth quarter of 2016, coupled with a decline in our repurchase of single-family PCs. The increase in longer-term interest rates resulted in net extinguishment gains for PCs repurchased during the fourth quarter, which partially offset the net extinguishment losses recognized for PCs repurchased during the nine months ended September 30, 2016.
- Other gains (losses) on investment securities recognized in earnings
  - 2017 vs. 2016 - improved primarily due to the recognition of smaller fair value losses on our mortgage and non-mortgage-related securities classified as trading as long-term interest rates increased less during 2017, coupled with larger gains due to additional spread tightening during 2017 on our sales of agency and non-agency mortgage-related securities.
  - 2016 vs. 2015 - worsened as we recognized net losses during 2016 compared to net gains during 2015, primarily due to losses on our mortgage-related and non-mortgage-related securities as a result of increasing longer-term interest rates, coupled with less realized gains from our available-for-sale securities, as we sold fewer non-agency securities in an unrealized gain position.
- Net impairment of available-for-sale securities recognized in earnings
  - 2017 vs. 2016 and 2016 vs. 2015 - decreased primarily due to a decline in the population of non-agency mortgage-related securities, including those non-agency mortgage-related securities we intend to sell, as we continue to reduce the less liquid assets in our mortgage-related investments portfolio.
- Other expense
  - 2016 vs. 2015 - decreased primarily driven by property taxes and insurance costs associated with seasoned single-family loans reclassified from held-for-investment to held-for-sale as we reclassified fewer loans in 2016 compared to 2015. These costs are considered part of the loan loss reserves while the loans are classified as held-for-investment. See Item Affecting Multiple Lines - Single-Family Loan Reclassifications for more information.
- Income tax expense
  - 2017 vs. 2016 - increased primarily as a result of the impact of the Tax Cuts and Jobs Act enacted in December 2017, which reduced the statutory corporate income tax rate from 35% to 21%. We measured our net deferred tax asset using the reduced rate and recognized a charge to

income tax expense of $5.4 billion.
l2016 vs. 2015 - increased primarily due to an increase in pre-tax income.

Item Affecting Multiple Lines

Single-Family Loan Reclassifications

During 2017, 2016 and 2015, we reclassified $26.2 billion, $4.7 billion and $13.6 billion, respectively, in UPB of seasoned single-family mortgage loans from held-for-investment to held-for-sale, as we continue to focus on reducing the balance of our less liquid assets.

On January 1, 2017, we elected a new accounting policy for reclassifications from held-for-investment to held-for-sale. Under the new policy, when we reclassify (transfer) a loan from held-for-investment to held-for-sale, we charge off the entire difference between the loan's recorded investment and its fair value if the loan has a history of credit-related issues. Expenses related to property taxes and insurance are included as part of the charge-off. If the charge-off amount exceeds the existing loan loss reserve amount, an additional provision for credit losses is recorded. If the charge-off amount is less than the existing loan loss reserve amount, a benefit for credit losses is recorded. Any declines in loan fair value after the date of transfer will be recognized as a valuation allowance, with an offset recorded to other income (loss).

This new policy election was applied prospectively, as it was not practical to apply it retrospectively.

The table below presents the effect of single-family loan reclassifications on income before income tax expense. Beginning in 2017, benefit (provision) for credit losses is the only line item affected by the loan reclassifications from held-for-investment to held-for-sale. Prior to this change (including 2016 and 2015 as presented below), the reclassifications from held-for-investment to held-for-sale affected several line items on our consolidated results of operations.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Benefit (provision) for credit losses	$546	$812	$2,314	($266)	(33)%	($1,502)	(65)%
Other income (loss) - lower-of-cost-or-fair-value adjustment	—	(1,005)	(2,193)	1,005	100%	1,188	54%
Other (expense) - property taxes and insurance associated with these loans	—	(195)	(1,178)	195	100%	983	83%
Effect on income before income tax expense	$546	($388)	($1,057)	$934	241%	$669	63%

Key Drivers:

- 2017 vs. 2016 - Effect on income before income tax expense changed to a gain due to a higher volume primarily of reperforming loans reclassified from held-for-investment to held-for-sale during 2017 compared to a loss recognized primarily on seriously delinquent loans reclassified from held-for-investment to held-for-sale during 2016.
- 2016 vs. 2015 - Effect on income before income tax expense decreased due to a decline in the number of seasoned single-family loans reclassified from held-for-investment to held-for-sale.

CONSOLIDATED BALANCE SHEETS ANALYSIS

The table below compares our summarized consolidated balance sheets.

	As of December 31,		Year Over Year Change	
(Dollars in millions)	2017	2016	$	%
Assets:				
Cash and cash equivalents	$6,848	$12,369	($5,521)	(45)%
Restricted cash and cash equivalents	2,963	9,851	(6,888)	(70)%
Securities purchased under agreements to resell	55,903	51,548	4,355	8%
Subtotal	65,714	73,768	(8,054)	(11)%
Investments in securities, at fair value	84,318	111,547	(27,229)	(24)%
Mortgage loans, net	1,871,217	1,803,003	68,214	4%
Accrued interest receivable	6,355	6,135	220	4%
Derivative assets, net	375	747	(372)	(50)%
Deferred tax assets, net	8,107	15,818	(7,711)	(49)%
Other assets	13,690	12,358	1,332	11%
Total assets	$2,049,776	$2,023,376	$26,400	1%
Liabilities and Equity:				
Liabilities:				
Accrued interest payable	$6,221	$6,015	$206	3%
Debt, net	2,034,630	2,002,004	32,626	2%
Derivative liabilities, net	269	795	(526)	(66)%
Other liabilities	8,968	9,487	(519)	(5)%
Total liabilities	2,050,088	2,018,301	31,787	2%
Total equity	(312)	5,075	(5,387)	(106)%
Total liabilities and equity	$2,049,776	$2,023,376	$26,400	1%

Key Drivers:

As of December 31, 2017 compared to December 31, 2016:

- Cash and cash equivalents, restricted cash and cash equivalents and securities purchased under agreements to resell affect one another and changes in the balances should be viewed together (e.g., cash and cash equivalents can be invested in securities purchased under agreements to resell or other investments). The decrease in the combined balance was primarily due to lower near term cash needs for fewer upcoming maturities and anticipated calls of other debt, and a decrease in prepayment proceeds received by the custodial account driven by increased interest rates, at the end of 2017 compared to the end of 2016.
- Investments in securities, at fair value decreased as we continued to reduce the mortgage-related investments portfolio during 2017 as required by the Purchase Agreement and FHFA.
- Deferred tax assets, net decreased primarily due to a reduction in the statutory corporate income tax rate as a result of the Tax Cuts and Jobs Act enacted in December 2017.
- Other assets increased primarily due to the recognition of receivables on sales of securities which had traded but not settled at year end.
- Total equity decreased primarily as a result of higher income tax expense due to the reduction of our net deferred tax asset as a result of the Tax Cuts and Jobs Act.

OUR BUSINESS SEGMENTS

As shown in the table below, we have three reportable segments, which are based on the way we manage our business. Certain activities that are not part of a reportable segment are included in the All Other category.

Segment/Category	Description	Primary Income Drivers	Primary Expense Drivers
Single-family Guarantee	Reflects results from our purchase, securitization and guarantee of single-family loans and the management of single-family mortgage credit risk	• Guarantee fee income	• Credit-related expenses • Administrative expenses • Credit risk transfer expenses
Multifamily	Reflects results from our purchase, sale, securitization and guarantee of multifamily loans and securities, our investments in those loans and securities and the management of multifamily mortgage credit risk and market spread risk	• Net interest income • Guarantee fee income • Gains on loans • Investment gains • Derivative gains	• Losses on loans • Investment losses • Derivative losses • Administrative expenses • Credit-related expenses
Capital Markets	Reflects results from managing our mortgage-related investments portfolio (excluding Multifamily segment investments, single-family seriously delinquent loans and the credit risk of single-family performing and reperforming loans), treasury function, single-family securitization activities and interest-rate risk	• Net interest income • Investment gains • Derivative gains	• Investment losses • Derivative losses • Administrative expenses
All Other	Consists of material corporate-level activities that are infrequent in nature and based on decisions outside the control of the management of our reportable segments	N/A	N/A

Segment Earnings

We evaluate segment performance and allocate resources based on a Segment Earnings approach:

- We make significant reclassifications among certain line items in our GAAP financial statements to reflect measures of guarantee fee income on guarantees, net interest income on investments and benefit (provision) for credit losses on loans that are in line with how we manage our business.
- We allocate certain revenues and expenses, including certain returns on assets and funding costs, and all administrative expenses to our three reportable segments.
- The sum of Segment Earnings for each segment and the All Other category equals GAAP net income (loss). Likewise, the sum of comprehensive income (loss) for each segment and the All Other category equals GAAP comprehensive income (loss).

During 1Q 2017 and 4Q 2017, we changed how we calculate certain components of our Segment Earnings for our Capital Markets segment. Prior period results have been revised to conform to the current period presentation for the 1Q 2017 change. No prior period results required updates for the 4Q 2017 change. For more information on these changes and our segment reclassifications, see Note 13.

Segment Earnings differs significantly from, and should not be used as a substitute for, net income (loss) as determined in accordance with GAAP. Our definition of Segment Earnings may differ from similar measures used by other companies. We believe that Segment Earnings provides us with meaningful metrics to assess the financial

performance of each segment and our company as a whole. See Note

13 for additional details on Segment Earnings, including additional financial information for our segments.

Segment Comprehensive Income

The graph below shows our comprehensive income by segment.

Single-Family Guarantee
Business Overview

Our Single-family Guarantee segment supports our primary business strategies by creating:

A Better Freddie Mac:

- Providing market leadership by delivering quality offerings, programs and services to an increasingly diversified customer base and an evolving mortgage market;
- Improving the customer experience through continued enhancement of our products, programs, processes and technology;
- Establishing effective risk management activities, including credit risk transfer transactions, that are appropriate for the level of risk; and
- Developing innovative technology platforms to provide sellers and servicers and Freddie Mac with better methods of assessing and managing single-family mortgage credit risk.

A Better Housing Finance System:

- Developing and implementing initiatives to cost-effectively reduce taxpayer exposure and offer third-party investors new and innovative ways to share in the credit risk of the single-family credit guarantee portfolio;
- Expanding access to affordable housing in a responsible manner to support our Charter Mission as well as to meet specific mandated goals;
- Working with FHFA, Fannie Mae and CSS on the development of a new common securitization platform; and
- Implementing the single (common) security initiative for Freddie Mac and Fannie Mae, which is intended to increase the liquidity of the TBA market and to reduce the disparities in trading value between our PCs and Fannie Mae's single-class mortgage-related securities.

The U.S. residential mortgage market consists of a primary mortgage market that links homebuyers and lenders and a secondary mortgage market that links lenders and investors. The size of the U.S. residential mortgage market is affected by many factors, including changes in interest rates, unemployment rates, homeownership rates, housing prices, the supply of housing, lender preferences regarding credit risk and borrower preferences regarding mortgage debt.

In accordance with our Charter, we participate in the secondary mortgage market. The Single-family Guarantee segment provides liquidity and support to the single-family market through a variety of activities that include the purchase, securitization and guarantee of single-family loans originated by sellers and servicers. The mix of loan products available for us to purchase is affected by several factors, including the volume of loans meeting the requirements of our Charter, our own preference for credit risk reflected in our purchase standards and the loan purchase and securitization activity of other financial institutions.

Our primary business model is to acquire loans that lenders originate and then pool those loans into mortgage-related securities that can be sold in the capital markets. The returns we generate from these activities are primarily derived from the ongoing guarantee fee we receive in exchange for providing our guarantee of the issued mortgage-related securities.

In order to issue mortgage-related securities, we establish trusts pursuant to our Master Trust Agreements and serve as the trustee of those trusts. The lender or servicer administers the collection of borrowers' payments on their loans and remits the collected funds to us. We administer the distribution of payments to the investors in the mortgage-related securities, net of any applicable guarantee fees. To reduce our exposure under our guarantee, we transfer credit risk on a portion of our single-family credit guarantee portfolio to the private market when it is cost-effective to do so.

The diagram below illustrates our primary business model.

When a borrower prepays a loan that we have securitized, the outstanding balance of the security owned by investors is reduced by the amount of the prepayment. If the borrower becomes delinquent, we continue to make the applicable payments to the investors in the mortgage-related securities pursuant to our guarantee until we purchase the loan out of the trust. We have the option to purchase specified loans, including certain delinquent loans, from the trusts at a purchase price equal to the current UPB of the loan, less any outstanding advances of principal that have been previously distributed. If borrowers become delinquent, we work with the borrowers through our servicers to mitigate our losses through our loan workout programs, which are discussed in more detail in Risk Management. If we are unable to achieve a successful loan workout, we will pursue foreclosure of the underlying property, which will result in a third party sale or an acquisition of the property as REO. The purchase and sale of delinquent loans are done in conjunction with the Capital Markets segment.

Guarantee Fees

We enter into loan purchase agreements with many of our single-family customers that outline the terms under which we agree to purchase loans from them over a period of time. For most of the loans we purchase, the guarantee fees are not specified contractually. Instead, we bid for some or all of the lender’s loan volume on a monthly basis at a guarantee fee that we specify. As a result, our loan purchase volumes from individual customers can fluctuate significantly.

We seek to issue guarantees with fee terms that are commensurate with the aggregate risks assumed and that will, over the long-term, provide guarantee fee income that exceeds the credit-related and administrative expenses on the underlying loans and also provide a return on the capital that would be

needed to support the related credit risk. The guarantee fees charged on new acquisitions generally consist of:

- A contractual monthly fee paid as a percentage of the UPB of the underlying loan;
- Upfront fees, which primarily include delivery fees that are calculated based on credit risk factors such as the loan product type, loan purpose, LTV ratio and credit score. These delivery fees are charged to compensate us for higher levels of risk in some loan products;
- Upfront payments made or received to buy up or buy down, respectively, the monthly contractual guarantee fee ("buy-up fees" or "buy-down fees"). These fees are paid in conjunction with the formation of a PC to provide for a uniform coupon rate for the mortgage pool underlying the PC. The payments made to buy-up the monthly contractual guarantee fee are not considered compensation for the credit risk assumed for purposes of our financial statements. Consequently, these amounts are allocated to the Capital Markets segment; and
- Market adjusted pricing costs based on the price performance of our PCs relative to comparable Fannie Mae securities.

We operate in a competitive market by varying our pricing for different customers, loan products and underwriting characteristics. We seek to maintain a broad-ranging mix of loan quality for the loans we purchase. However, sellers may elect to retain loans with better credit characteristics. A seller's decision to retain these loans could result in our purchases having a more adverse credit profile.

We must obtain FHFA's approval to implement across-the-board changes to our guarantee fees. In addition, from time to time, FHFA issues directives or guidance to us affecting the levels of guarantee fees that we may charge for various types of loans. In July 2016, FHFA issued a directive that addressed the safety and soundness risk that could arise if our guarantee fees were not sufficient to compensate us adequately for the credit risk we are taking. This directive puts some constraints on certain aspects of our guarantee fees, such as our ability to reduce the contractual guarantee fee. In December 2017 and February 2018, FHFA issued additional guidance that requires the GSEs to meet certain profitability levels on new fundings beginning in 2018.

Products and Activities

Securitization and Guarantee Products

We offer various types of guarantee and securitization products, primarily single-class securitizations and resecuritizations. In these securitization products, Freddie Mac functions in its capacity as depositor, guarantor, administrator and trustee. We retain the credit risk and transfer the interest-rate and prepayment risks to the investors. While the Single-family Guarantee segment is responsible for the guarantee of our securities, the Capital Markets segment manages the securitization and resecuritization processes.

Single-class Securitization Products

We offer a variety of single-class securitization products to our customers. Our single-class securitization products are pass-through securities that represent undivided beneficial interests in trusts that hold pools of loans. For our fixed-rate PCs, we guarantee the timely payment of principal and interest. For our ARM PCs, we guarantee the timely payment of the weighted average coupon interest

rate for the underlying loans. We also guarantee the full and final payment of principal, but not the timely payment of principal, on ARM PCs. In exchange for our guarantee, we receive an ongoing fee as described in the Guarantee Fees section above.

We issue the following types of single-class securitization products:

- Guarantor Swap PCs - We offer transactions in which our customers, primarily large mortgage banking companies and commercial banks, provide us with loans in exchange for PCs, as shown in the diagram below:
- Cash PCs - We offer cash products to our customers, primarily community and regional banks. In these transactions, we purchase performing loans for cash and securitize them for retention in our mortgage-related investments portfolio or for sale to third parties. For the period of time between loan purchase and securitization, we refer to the loan as being in our securitization pipeline. The purchase of loans and sale of PCs are managed by the Capital Markets segment. The diagram below illustrates a cash PC transaction. We securitize reperforming loans using a similar process.

Resecuritization Products

We offer resecuritization products to our customers. Our resecuritization products represent beneficial interests in pools of PCs and certain other types of mortgage assets. We create these securities by using PCs or our previously issued resecuritization products as the underlying collateral. We leverage the issuance of these securities to expand the range of investors in our mortgage-related securities to include those seeking specific security attributes. Similar to our PCs, we guarantee the payment of principal and interest to the investors in our resecuritization products. We do not charge a guarantee fee for these securities if the underlying collateral is already guaranteed by us since no additional credit risk is introduced, although we typically receive a transaction fee as compensation for creating the security and future administrative responsibilities.

All of the cash flows from the collateral underlying our resecuritization products are generally passed through to investors in these securities. We do not issue resecuritization products that have concentrations of credit risk beyond those embedded in the underlying assets. In many of our resecuritization transactions, securities dealers or investors deliver mortgage assets in exchange for the resecuritization product. In certain cases, we may also transfer our own mortgage assets in exchange for the resecuritization product. The resecuritization activities are managed by the Capital Markets segment. The following diagram provides a general example of how we create resecuritization products:

We issue the following types of resecuritization products:

- Giant PCs - Resecuritizations of previously issued PCs or Giant PCs. Giant PCs are single-class securities that involve the straight pass through of all cash flows of the underlying collateral to holders of the beneficial interests.
- Stripped Giant PCs - Multiclass securities that are formed by resecuritizing previously issued PCs or Giant PCs and issuing stripped securities, including principal-only and interest-only securities or floating rate and inverse interest-only securities, backed by the cash flows from the underlying collateral.
- REMICs - Resecuritizations of previously issued PCs, Giant PCs, Stripped Giant PCs or REMICs. REMICs are multiclass securities that divide all cash flows of the underlying collateral into two or more classes with varying maturities, payment priorities and coupons.
- Other securitization products - Guaranteed mortgage-related securities collateralized by non-Freddie Mac mortgage-related securities. However, we have not entered into these types of transactions as part of our Single-family Guarantee business in several years.

Sale of Mortgage Loans

We continually manage the balance of our less liquid assets. We offer to sell select mortgage loans through a variety of methods that include whole loan sales or certain securitization transactions. In these transactions, we reduce or eliminate our credit risk, in addition to our interest-rate and prepayment risk, associated with the underlying mortgage loans. The sale of mortgage loans is managed by the Capital Markets segment.

Our mortgage loans are sold through the following transactions:

- Whole loan sales - Sales of seriously delinquent or reperforming loans for cash.

- Senior subordinate securitization structures (non-consolidated) - Transactions where we issue guaranteed senior securities and unguaranteed subordinated securities. The collateral for these structures primarily consists of reperforming loans. The unguaranteed subordinated securities absorb first losses on the related loans. In these transactions, the loans are not serviced in accordance with our Guide and we do not control the servicing.

Long-term Standby Commitments

We also offer to provide a guarantee on mortgage assets held by third parties, in exchange for guarantee fees, without securitizing those assets. These long-term standby commitments obligate us to purchase seriously delinquent loans that are covered by those commitments. From time to time, we have consented to the termination of our long-term standby commitments and simultaneously entered into guarantor swap transactions with the same counterparty, issuing PCs backed by many of the same loans.

The primary impacts of the aforementioned products and transactions to Segment Earnings are:

- Guarantee fee income earned on our guarantee of principal and interest payments on these mortgage-related securities;
- Benefit (provision) for credit losses, which is affected by changes in estimated probabilities of default and estimated loss severities, the actual level of loan defaults, the effect of loss mitigation efforts and payment performance of our individually impaired mortgage portfolio; and
- Gains and losses recognized on the reclassification of loans held-for-investment to held-for-sale and subsequent sale of these loans.

Common Securitization Platform and the Single (Common) Security

In accordance with FHFA’s 2014 Strategic Plan and the Conservatorship Scorecards, we continue to work with FHFA, Fannie Mae and CSS on the development of a new common securitization platform and the implementation of the single (common) security initiative for Freddie Mac and Fannie Mae.

In December 2016, we and FHFA announced the implementation of Release 1 of the common securitization platform. Under Release 1, we began using the common securitization platform for data acceptance, issuance support and bond administration activities related to certain Freddie Mac single-family fixed-rate mortgage-related securities.

In March 2017, FHFA published "An Update on Implementation of the Single Security and the Common Securitization Platform," which included the timeframe for implementation of Release 2 of the common securitization platform, planned for the second quarter of 2019. Release 2 will allow Freddie Mac and Fannie Mae to issue a single (common) mortgage-related security, to be called the Uniform Mortgage-Backed Security or UMBS. Release 2 will add to the functionality of the platform by, among other things, enabling commingling of Freddie Mac and Fannie Mae UMBS in securitization transactions. Freddie Mac intends to offer an optional exchange program to enable holders to exchange existing 45-day delay fixed-rate Gold PCs for 55-day delay Freddie Mac securities.

On December 4, 2017, FHFA published the "December 2017 FHFA Update on the Single Security Initiative and the Common Securitization Platform." The report emphasized the importance of stakeholder readiness by the end of 2018 and provided updates on key initiative areas such as market outreach activities, continued work with regulatory and industry bodies to resolve open issues and questions and FHFA and Enterprise efforts concerning prepayment speed alignment for TBA securities.

The target implementation date for Release 2 of the single security initiative remains the second quarter of 2019.

Credit Risk Transfer Transactions

We offer credit risk transfer transactions to third-party investors. Most of our credit risk transfer transactions are designed to transfer a small portion of the expected credit losses, and a significant portion of credit losses in a stressed economic environment, on groups of previously acquired loans to third-party investors. These transactions often have termination dates that are earlier than the maturities of the related loans, and losses on the loans occurring beyond the terms of the transactions are not covered. The following strategic considerations were incorporated into the design of our credit risk transfer transactions:

- Repeatable and scalable execution with a broad appeal to diversified investors;
- Execution at a cost that is economically sensible;
- Minimal effect on the TBA market;
- Minimize changes required of, and effects on, sellers and servicers by having Freddie Mac serve as the credit manager for investors; and
- Avoid or seek to mitigate the risk that our losses are not reimbursed timely and in full.

Our primary credit risk transfer transactions include:

- STACR debt notes - Transactions in which we create a reference pool of loans from our single-family loan portfolio and an associated securitization-like structure with notional credit risk positions (e.g., first loss, mezzanine and senior positions). We issue STACR debt notes related to certain notional credit risk positions to third-party investors and retain the remaining credit risk. In certain of our STACR debt note transactions to date, we transferred risk in both first loss and mezzanine notional credit risk positions, while in other transactions we only transferred risk in the mezzanine notional credit risk position.

We make payments of principal and interest on the issued STACR debt notes, but are not required to repay principal to the extent that the notional credit risk position is reduced as a result of a specified credit event. The interest rate on STACR debt notes is generally higher than on our other unsecured debt securities due to the potential for reductions to their principal balance. The amount of risk transferred in each transaction affects the interest rate we pay on the notes. Generally, the notional amounts of the credit risk positions will be reduced based on scheduled and unscheduled principal payments that occur on the loans in the reference pool. The notional amounts are also reduced by losses from loans in the reference pool when certain specified credit events occur. Losses may be allocated to the notional amounts of the credit risk positions based on calculated losses using a predefined formula or based on the actual losses on the loans in the reference pool. For loans that are covered by credit risk transfer transactions based on calculated losses, we may write down STACR debt notes or receive reimbursement of losses when the loans experience a credit event, which predominantly includes a loan becoming 180 days delinquent. For loans that are covered by credit risk transfer transactions based on actual losses, we may write down STACR debt notes or receive reimbursement of losses once an actual loss event (e.g., short sale, third-party sale or REO disposition) occurs.

The following diagram illustrates a typical STACR debt note transaction:

- ACIS insurance policies - Transactions in which we purchase insurance policies, generally underwritten by a group of insurers and reinsurers, that provide credit protection for certain specified credit events that occur and are typically allocated to the non-issued notional credit risk positions of a STACR debt note transaction (i.e., the risk positions that Freddie Mac retains). Under each of these insurance policies, we pay monthly premiums that are determined based on the outstanding balance of the reference pool. We may also enter into ACIS transactions that provide credit protection for certain specified credit events on loans not included in a reference pool created for a STACR debt note transaction. When specific credit events occur, we receive compensation from the insurance policy up to an aggregate limit based on actual losses. We require our counterparties to partially collateralize their exposure to reduce the risk that we will not be reimbursed for our claims under the policies.

The primary impacts of our credit risk transfer transactions to Segment Earnings are:

- Interest expense on our STACR debt notes;
- Fair value gains and losses recognized on certain of our STACR debt notes;
- Premium expense for insurance coverage under the ACIS contracts; and
- Benefits recognized from recoveries under the CRT transactions. Benefits from certain of our STACR debt notes are recognized as gains on extinguishment of debt, whereas benefits from other CRT transactions are recognized as other income.

We also use other types of credit risk transfer transactions and credit enhancements, such as senior subordinate securitization transactions and primary mortgage insurance, to mitigate our credit risk exposure. See Risk Management - Single-Family Mortgage Credit Risk for additional information on our credit risk transfer transactions, as well as the other types of credit enhancements we use.

Customers

Our customers in the Single-family Guarantee segment are predominantly financial institutions that originate, sell and perform the ongoing servicing of loans for new or existing homeowners. These companies include mortgage banking companies, commercial banks, regional banks, community banks, credit unions, HFAs, savings institutions and other non-depository financial institutions. Many of these companies are both sellers and servicers for us. In addition, we also maintain relationships with investors and dealers in our guaranteed mortgage-related securities.

We acquire a significant portion of our loans from several lenders that are among the largest originators in the U.S. In addition, a significant portion of our single-family loans is serviced by several large servicers. The graphs below present the concentration of our single-family purchase volume for 2017 and our loan servicing as of December 31, 2017 among our top five customers.

Percentage of Single-Family Purchase Volume

Percentage of Single-Family Servicing Volume[1]

(1) Percentage of servicing volume is based on the total single-family credit guarantee portfolio, excluding loans where we do not exercise control over the associated servicing.

For additional information about seller and servicer concentration risk and our relationships with our seller and servicer customers, see Risk Management - Counterparty Credit Risk - Sellers and Servicers and Note 14.

Competition

Our principal competitors in the Single-family Guarantee segment are Fannie Mae, FHA/VA (with Ginnie Mae securitization) and other financial institutions that retain or securitize loans, such as commercial and investment banks, dealers and savings institutions. We compete on the basis of price, products, securities structure and service. Competition to acquire single-family loans can also be significantly affected by changes in our credit standards. The conservatorship, including direction provided to us by our Conservator, may affect our ability to compete. For more information, see Risk Factors - Other Risks - Competition from banking and non-banking institutions (including Fannie Mae and FHA/VA with Ginnie Mae securitization) may harm our business. FHFA’s actions as Conservator of both companies could affect competition between us and Fannie Mae.

Market Conditions

The graphs and related discussion below present certain single-family market indicators, for the most recent five years, that can significantly affect the business and financial results of our Single-family Guarantee segment.

U.S. Single-Family Originations

Source: Inside Mortgage Finance dated January 26, 2018.

U.S. Single-Family Home Sales

Source: National Association of Realtors news release dated January 24, 2018 and U.S. Census Bureau news release dated January 25, 2018.

Commentary

- U.S. single-family loan origination volumes decreased in 2017 compared to 2016, driven by lower refinance volume as a result of higher average mortgage interest rates.
- U.S. single-family home sales volume increased in 2017 compared to 2016, driven by favorable economic conditions, such as historically low mortgage interest rates, continued home price appreciation and a declining unemployment rate.
- In 2018, we expect continued growth in U.S. single-family home purchase volume due to a gradual increase in housing supply, and lower refinance volume driven by a moderate increase in mortgage interest rates. Freddie Mac's single-family loan purchase volumes typically follow similar trends.

Single-Family Mortgage Debt Outstanding as of December 31,
Source: Federal Reserve Financial Accounts of the United States of America dated December 7, 2017. For 2017, the amount is as of September 30, 2017 (latest available information).

Single-Family Serious Delinquency Rates as of December 31,
Source: National Delinquency Survey from the Mortgage Bankers Association. For 2017, the rates (excluding Freddie Mac) are as of September 30, 2017 (latest available information).

Commentary

- U.S. single-family mortgage debt outstanding increased in 2017 compared to 2016, primarily driven by house price appreciation. An increase in U.S. single-family mortgage debt outstanding, combined with our sustained market share, typically results in growth of our single-family credit guarantee portfolio.
- The U.S. single-family serious delinquency rate decreased slightly in 2017 compared to 2016 due to macroeconomic factors, such as a low unemployment rate and continued home price appreciation, offset by the impacts of the hurricanes in 2017. Our single-family serious delinquency rate typically follows a similar trend. See Risk Management - Single-Family Mortgage Credit Risk - Single-Family Credit Guarantee Portfolio for additional information on our serious delinquency rate.
- As reported by the U.S. Census Bureau, the U.S. homeownership rate was 64.2% in the fourth quarter of 2017 compared to a high point of 69.2% in the fourth quarter of 2004, and the average of 66.1% from 1990 to the present.

Business Results

The following graphs and related discussion present the business results of our Single-family Guarantee segment.

New Business Activity

UPB of Single-Family Loan Purchases and Guarantees by Loan Purpose

Number of Families Helped to Own a Home

Commentary

- We maintain a consistent market presence by providing lenders with a constant source of liquidity for conforming loan products. We have funded approximately 15.7 million single-family homes since January 1, 2009 and purchased approximately 1.4 million HARP loans since the initiative began in 2009, including over 13,000 during 2017.
- Our loan purchase and guarantee activity decreased in 2017 compared to 2016 due to lower refinance volume driven by higher average mortgage interest rates, partially offset by an increase in home purchase loan volume due to favorable macroeconomic conditions, such as historically low mortgage interest rates and a declining unemployment rate.
- We continued working to improve access to affordable housing, including through our Home Possible® loan initiatives. Our Home Possible® loan initiatives offer down payment options as low as 3% and are designed to help qualified borrowers with limited savings buy a home. We purchased over 95,000 loans under these initiatives in 2017. We also continue to implement programs that support responsibly broadening access to affordable housing by:
  - Improving the effectiveness of pre-purchase and early delinquency counseling for borrowers;
  - Expanding our ability to support borrowers who do not have a credit score;
  - Implementing the Duty To Serve Underserved Markets plan; and
  - Increasing support for first-time home buyers.

While we are responsibly expanding our programs and outreach capabilities to better serve low- and moderate-income borrowers and underserved markets, these loans result in increased credit risk. Expanding access to affordable housing will continue to be a top priority in 2018. See Regulation and Supervision - Legislative and Regulatory Developments - Duty to Serve Underserved Markets Plan for more information.

Single-Family Credit Guarantee Portfolio

Single-Family Credit Guarantee Portfolio as of December 31,

Single-Family Loans as of December 31,

Commentary

- The single-family credit guarantee portfolio increased during 2017 by approximately 4%, driven in part by an increase in U.S. single-family mortgage debt outstanding as a result of continued home price appreciation, combined with our share of U.S. single-family origination volume remaining stable.
- The Core single-family loan portfolio grew to 78% of the single-family credit guarantee portfolio at December 31, 2017 compared to 73% at December 31, 2016.
- The Legacy and relief refinance single-family loan portfolio declined to 22% of the single-family credit guarantee portfolio at December 31, 2017 compared to 27% at December 31, 2016, primarily driven by liquidations.

Guarantee Fees

The average portfolio Segment Earnings guarantee fee rate recognizes upfront fee income over the contractual life of the related loans (usually 30 years). If the related loans prepay, the remaining upfront fee income is recognized immediately. In contrast, the average guarantee fee rate charged on new acquisitions recognizes upfront fee income over the estimated life of the related loans using our expectations of prepayments and other liquidations. See Single-family Guarantee - Business Overview - Guarantee Fees for more information on our guarantee fees.

Average Portfolio Segment Earnings Guarantee Fee Rate[(1)(2)] for the Year Ended December 31,

Average Guarantee Fee Rate[(1)] Charged on New Acquisitions for the Year Ended December 31,

(1) Excludes the legislated 10 basis point increase in guarantee fees.
(2) Reflects an average rate for our total single-family credit guarantee portfolio and is not limited to purchases in the applicable period.

Commentary

- Average portfolio Segment Earnings guarantee fees decreased slightly in 2017 compared to 2016 due to a decline in the recognition of amortized fees driven by lower prepayments as a result of higher average mortgage interest rates. This decrease was partially offset by an increase in contractual guarantee fees as older vintages were replaced by acquisitions of new loans with higher contractual guarantee fees.
- Guarantee fees charged on new acquisitions decreased in 2017 compared to 2016 due to competitive pricing, partially offset by lower market-adjusted pricing costs based on the improved price performance of our PCs relative to Fannie Mae securities.

Credit Risk Transfer (CRT) Activities

We transfer credit risk on a portion of our single-family credit guarantee portfolio to the private market, which reduces the risk of future losses to us and taxpayers when borrowers go into default. In our STACR debt note and ACIS transactions, we pay interest to investors or premiums to insurers or reinsurers in exchange for their taking on a portion of the credit risk on the mortgage loans in the related reference pool. These payments effectively reduce our guarantee fee income from the PCs backed by the mortgage loans in the related reference pools. See Single-Family Guarantee - Business Overview - Credit Risk Transfer Transactions for more information on our CRT transactions. The following charts present the issuance amounts for the STACR debt note, ACIS and Deep MI CRT transactions that occurred during 2017 and the cumulative issuance amount of all STACR debt note, ACIS and Deep MI CRT transactions as of December 31, 2017 by loss position and the party holding each loss position.

New STACR Debt Note, ACIS and Deep MI CRT Transactions for the Year Ended December 31, 2017[1]
(In billions)

Senior	Freddie Mac $258.3				Reference Pool $268.3
Mezzanine	Freddie Mac $0.7	ACIS $1.9	STACR Debt Notes $4.7	Deep MI CRT $0.1	
First Loss	Freddie Mac $1.4	ACIS $0.3	STACR Debt Notes $0.9		

Cumulative STACR Debt Note, ACIS and Deep MI CRT Transactions as of December 31, 2017[1][2]
(In billions)

Senior	Freddie Mac $826.8				Reference Pool $866.1
Mezzanine	Freddie Mac $2.1	ACIS $7.5	STACR Debt Notes $22.0	Deep MI CRT $0.2	
First Loss	Freddie Mac $4.7	ACIS $0.9	STACR Debt Notes $1.9		

(1) The amounts represent the UPB upon issuance of STACR debt notes and execution of ACIS and Deep MI CRT transactions.

(2) For the current outstanding coverage provided by our STACR debt note and ACIS transactions, see Risk Management - Single-Family Mortgage Credit Risk - Offering Private Investors New and Innovative Ways to Share in the Credit Risk of the Single-Family Loan Portfolio.

Commentary

- In 2017, we transferred a portion of credit risk associated with $280.1 billion in UPB of loans in our single-family credit guarantee portfolio through STACR debt note, ACIS, senior subordinate securitization structure, seller indemnification and Deep MI CRT transactions. Significant recent developments include the following:
  - We executed a new senior subordinate securitization structure transaction, which allows for issuance of guaranteed PCs and unguaranteed subordinated certificates backed by participation

interests in recently originated mortgage loans acquired by Freddie Mac through our cash loan purchase program.

- We developed a new ACIS transaction, which unlike prior ACIS transactions, allows for coverage to begin at the time Freddie Mac purchases the mortgage loans. The reference pool associated with this transaction will aggregate over a period of time and will be based on a pre-negotiated forward contract with one or more reinsurers.
- We executed a new STACR debt note transaction backed by HARP fixed-rate mortgages issued after 2008.

- Since we began transferring credit risk in 2013, we have completed 84 credit risk transfer transactions that, upon execution, covered $881.9 billion in principal of loans in our single-family credit guarantee portfolio.
- Our expected guarantee fee income on the loans within the STACR debt note and ACIS reference pools has been effectively reduced by approximately 30%, on average, for transactions executed as of December 31, 2017.
- Due to differences in accounting, there could be a significant time lag between when we recognize a provision for credit losses on the mortgage loans in the reference pools and when we recognize the related recovery for the majority of our STACR debt note transactions. A credit expense on a loan in a reference pool related to these transactions is recorded when it is probable that we have incurred a loss, while a benefit is recorded when an actual loss event occurs.
- As of December 31, 2017 there has not been a significant number of loans in our STACR debt note and ACIS reference pools that have experienced a credit event. As a result, we experienced minimal write-downs on our STACR debt notes and filed minimal claims for reimbursement of losses under our ACIS transactions. We expect losses may increase on loans in the reference pools in our existing CRT transactions from Hurricanes Harvey and Irma.
- The 2018 Conservatorship Scorecard sets a goal for us to transfer a meaningful portion of credit risk on at least 90% of the UPB of certain categories of newly acquired single-family loans, such as non-HARP fixed-rate loans with terms greater than 20 years and LTV ratios above 60%.

We continue to evaluate our credit risk transfer strategy and to make changes depending on market conditions and our business strategy. The aggregate cost of our credit risk transfer activity will continue to increase as we continue to transfer risk on new originations.

Loss Mitigation Activities

Number of Families Helped to Avoid Foreclosure

Loan Workout Activity
Commentary

- We continue to help struggling families retain their homes or otherwise avoid foreclosure through loan workouts. Our loan workout activity increased slightly in 2017 compared to 2016, consistent with the increase in the number of delinquent loans in the single-family credit guarantee portfolio due to the hurricane events in the third quarter of 2017.
- As part of our strategy to mitigate losses and reduce our holdings of less liquid assets, we sold seriously delinquent loans totaling $0.5 billion in UPB during 2017. Of the $17.0 billion in UPB of single-family loans classified as held-for-sale at December 31, 2017, $2.1 billion related to loans that were seriously delinquent. We believe selling these loans provides better economic returns than continuing to hold them.
- The relief refinance program is being replaced with the high LTV relief refinance (Enhanced Relief Refinance[SM]) program, which will be available in January 2019 for loans originated on or after October 1, 2017. This program provides liquidity for borrowers who are current on their mortgages but are unable to refinance because their LTV ratios exceed our standard refinance limits. In addition, the HARP program has been extended for applications through December 31, 2018 to ensure that borrowers who have a high LTV ratio and are eligible for HARP will continue to have a refinance option. See Risk Management for additional information on our loan workout activities.

Financial Results

The table below presents the components of the Segment Earnings and comprehensive income for our Single-family Guarantee segment.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Guarantee fee income	$6,094	$6,091	$5,152	$3	— %	$939	18 %
Provision for credit losses	(816)	(517)	(283)	(299)	(58)%	(234)	(83)%
Other non-interest income	1,505	447	136	1,058	237 %	311	229 %
Administrative expense	(1,381)	(1,323)	(1,285)	(58)	(4)%	(38)	(3)%
REO operations expense	(203)	(298)	(341)	95	32 %	43	13 %
Other non-interest expense	(1,382)	(1,169)	(794)	(213)	(18)%	(375)	(47)%
Segment Earnings before income tax expense	3,817	3,231	2,585	586	18 %	646	25 %
Income tax expense	(1,316)	(1,061)	(807)	(255)	(24)%	(254)	(31)%
Segment Earnings, net of taxes	2,501	2,170	1,778	331	15 %	392	22 %
Total other comprehensive income (loss), net of tax	40	(9)	12	49	544 %	(21)	(175)%
Total comprehensive income	$2,541	$2,161	$1,790	$380	18 %	$371	21 %

Key Drivers:

n 2017 vs. 2016

l Continued growth in our single-family credit guarantee portfolio and higher average contractual guarantee fee rates, offset by lower upfront fee amortization due to lower prepayments, resulted in guarantee fee income remaining relatively unchanged.

l Increased provision for credit losses due to estimated losses related to the hurricanes in 2017, offset by improvements in loss severity.

l Higher volume of reperforming loans reclassified from held-for-investment to held-for-sale and subsequently sold resulted in gains in 2017 compared to losses recognized on seriously delinquent loans in 2016.

l Higher outstanding cumulative volumes of credit risk transfer transactions resulted in increased credit risk transfer expense (interest expense on STACR debt notes and premiums paid to ACIS counterparties) in 2017.

n 2016 vs. 2015

l Continued growth in our single-family credit guarantee portfolio and higher average contractual guarantee fee rates, as well as higher amortization of upfront fees due to increased loan prepayments, resulted in increased guarantee fee income.

l Increased provision for credit losses primarily due to higher total interest rate concessions resulting from the longer expected life of certain modified loans driven by rising mortgage interest rates in 4Q 2016.

l Lower volume of seriously delinquent single-family loans reclassified from held-for-investment to held-for-sale in 2016.

- Increased fair value losses on STACR debt notes, as market spreads between STACR yields and LIBOR tightened more in 2016.
- Higher outstanding cumulative volumes of credit risk transfer transactions resulted in increased credit risk transfer expense (interest expense on STACR debt notes and premiums paid to ACIS counterparties) in 2016.

Multifamily
Business Overview

The Multifamily segment supports our primary business strategies by creating:

A Better Freddie Mac:

- Continuing to provide financing to the multifamily mortgage market and expanding our market presence for workforce housing in line with our mission;
- Improving our risk-adjusted returns by leveraging private capital in our credit risk transfer transactions;
- Identifying new opportunities beyond our existing K Certificate and SB Certificate transactions to cost-effectively transfer credit risk to third parties and reduce taxpayer exposure; and
- Maintaining strong credit and capital management discipline.

A Better Housing Finance System:

- Operating in a customer focused manner, in an effort to build value and support the creation of a strong, long-lasting rental housing system; and
- Fostering innovation through the development of products that expand the availability of workforce housing in the marketplace.

The Multifamily segment provides liquidity and support to the multifamily mortgage market through a variety of activities that include the purchase, guarantee, sale and/or securitization of multifamily mortgage loans and mortgage-related securities. The overall market demand for multifamily loans is generally affected by local and regional economic factors, such as unemployment rates, construction cycles, property prices, preferences for homeownership versus renting and the relative affordability of single-family homes, as well as certain macroeconomic factors, such as interest rates.

Our primary business model is to acquire multifamily loans for aggregation and then securitization through the issuance and guarantee of debt securities. The returns we generate from these activities are primarily derived from (i) the net interest income we earn on the loans prior to their securitization, (ii) the price received upon securitization of the loans versus the price we paid to acquire the loans and (iii) the ongoing guarantee fee we receive in exchange for providing our guarantee of the issued debt securities. We evaluate these factors collectively in order to maximize our returns and to assess the profitability of any given transaction.

Our securitization activities generally provide us with a mechanism to finance our loan product offerings and to transfer a large majority of expected and stress credit losses of the loans that we purchase to third parties. For multifamily loans that we do not intend to securitize, we may pursue other strategies, including structured sales or the execution of other credit risk transfer products designed to transfer all or a portion of the loans' credit risk to third parties, therefore reducing taxpayer exposure.

Our support of the multifamily market generally begins with our underwriting of the mortgage loans that we commit to purchase from our approved lenders and typically ends with the disposition of those loans, generally through a borrower payoff. Through our support of the multifamily mortgage market,

borrowers can obtain lower financing costs, which can benefit renters through lower rental rates and/or improved services or amenities.

Products and Activities

Loan Products

Through our network of approved lenders, we offer borrowers a variety of loan products for the acquisition, construction, refinance and/or rehabilitation of multifamily properties. While our approved lenders originate the loans that we purchase, we use a prior-approval underwriting approach, in contrast to the delegated underwriting approach used in our Single-Family Guarantee segment. Under this approach, we maintain credit discipline by completing our own underwriting, credit review and legal review for each loan, including review of third-party appraisals and cash flow analysis, prior to issuing a loan purchase commitment. We also price every loan or transaction based on the specific terms, structure and type of execution.

Multifamily loans are typically originated by our lenders without recourse to the borrower, making repayment dependent on the cash flows generated by the underlying property. Cash flows generated by a property are significantly influenced by vacancy and rental rates, as well as conditions in the local rental market, the physical condition of the property, the quality of property management and the level of operating expenses.

Our primary multifamily loan products include the following:

- Conventional loans - Financing that includes fixed-rate and floating-rate loans, loans in lease-up and with moderate property upgrades, manufactured housing community loans, student housing loans, supplemental loans and certain Green Advantage loans.
- Senior housing loans - Financing for independent living properties, assisted living properties and properties with skilled nursing or memory care.
- Small balance loans - Financing provided to small rental property borrowers for the acquisition or refinance of multifamily properties. Financing ranges from $1 million to $7.5 million and is focused on properties from 5 to 50 units.
- Targeted affordable housing - Financing provided to borrowers in underserved areas that have restricted units affordable to households with low income (earning up to 80% of the area median income) and very-low income (earning up to 50% of the area median income) and that typically receive government subsidies.

The amount and type of multifamily loans that we purchase is significantly influenced by the production cap that is established by the annual Conservatorship Scorecard, which limits the aggregate UPB of multifamily loans we may purchase in a year. While purchases of certain multifamily loans are subject to the cap, purchases of multifamily loans that support workforce housing in affordable and underserved markets and that support improvements to energy or water efficiency are generally not subject to the cap. Examples of multifamily loans that are either not subject to the cap or only partially subject to the cap include certain small balance loans, senior housing loans, manufactured housing loans, targeted affordable housing loans and Green Advantage loans.

In addition, the amount and type of multifamily loans that we purchase is influenced by our current business strategy (e.g., whether to maintain or grow our share of the multifamily mortgage market) and overall market demand for multifamily loan products.

Loan Purchase Commitments

Prior to issuing an unconditional commitment to purchase a multifamily loan, we negotiate with the lender and borrower to determine the specific economic terms and conditions of our commitment, including the loan's purchase price or mortgage spread. During periods when we seek to increase our share of the total multifamily mortgage debt outstanding, we strategically bid more competitively, generally resulting in a higher commitment price or lower mortgage spread, and potentially reduced profitability.

At the time we commit to purchase a multifamily loan, we preliminarily determine our intent with respect to that loan. For commitments to purchase loans that we intend to sell or securitize (i.e., held-for-sale commitments), we elect the fair value option and therefore recognize and measure these commitments at fair value in our consolidated financial statements. No such election is made for commitments to purchase loans that we intend to hold for the foreseeable future (i.e., held-for-investment commitments), and therefore these commitments are not recognized in our consolidated financial statements.

The primary impacts to Segment Earnings are:

- For each of our held-for-sale commitments, at commitment date, we recognize the estimated fair value of the commitment into earnings, which represents the gain we expect to realize on the sale of the loan. This unrealized gain, which results from our ability to purchase loans in the whole loan market while exiting through the securitization market effectively represents the incremental benefit that can be realized by accessing the securitization market; and

- After commitment date, but prior to settlement, we recognize changes in the fair value of the commitment into earnings. These fair value adjustments result from changes in the pricing of our securitizations due to changes in interest rates and securitization market spreads.

Loan Purchase

When we purchase a loan, we finalize our intent with respect to that loan. Multifamily loans that we intend to hold for the foreseeable future are classified as held-for-investment and measured at amortized cost, while multifamily loans that we intend to sell or securitize are classified as held-for-sale and typically measured at fair value through a separate fair value option election.

The vast majority of all new multifamily loan purchases are initially classified as held-for-sale and included in our securitization pipeline. The holding period for loans in our securitization pipeline generally ranges between two and five months, as we aggregate sufficient loan products with similar terms and risk characteristics to securitize. For example, loans purchased during the first quarter will generally be used as collateral for securitizations that occur in the second and third quarters of that same year.

Our multifamily held-for-sale commitments and held-for-sale loans are subject to changes in fair value due to two main risks: (i) interest-rate risk and (ii) spread risk. While we use derivatives to economically hedge the interest rate-related fair value changes of most of our multifamily commitments and loans measured at fair value, we continue to be exposed to spread-related fair value changes. We partially reduce our spread-related fair value exposure by purchasing certain spread-related derivatives, thereby obtaining protection against adverse movements in market spreads. We refer to the fair value

adjustments resulting from changes in these risks, net of any offsetting fair value adjustments from our derivatives, as our holding period fair value gains and losses.
The primary impacts to Segment Earnings are:

- During the holding period, we recognize changes in the fair value of loans classified as held-for-sale into earnings. These fair value adjustments result from changes in the pricing of our securitizations due to changes in interest rates and securitization market spreads;

- Fair value gains or losses recognized on interest-rate and spread-related derivatives. These changes generally offset fair value changes on the loans; and

- Interest income on loans while held in our Mortgage Investments Portfolio.

Securitization, Guarantee and Credit Risk Transfer Products

In our Multifamily segment, we issue or enter into various types of securitization, guarantee and credit risk transfer products or transactions. These products, except for our other credit risk transfer products (i.e., loan sales and SCR debt notes), make up our guarantee portfolio.

The collateral used in our securitization products can vary and may include loans underwritten and purchased by us at loan origination or loans we do not own prior to securitization and that we underwrite after (rather than at) origination. In our typical securitizations, we guarantee some or all of the securities issued as part of the transaction. In exchange for providing this guarantee, we receive an ongoing guarantee fee that is commensurate with the risks assumed and that will, over the long-term, provide us with guarantee fee income that is expected to exceed the credit-related and administrative expenses of the underlying loans. Structural deal features, such as term, type of underlying loan product and subordination levels generally influence the deal's risk profile, which ultimately affects the guarantee fee rate we set at the time of securitization.

For securitizations using collateral that we own, we select a securitization structure and level of subordination to optimize the combination of gains we earn when we sell the loans for securitization and the ongoing guarantee fees we will receive over time. For example, depending on the securitization product and subordination levels selected, we may realize a higher (lower) gain on sale, but recognize lower (higher) ongoing guarantee fee income.

While most of our securitizations result in the transfer of credit risk through the issuance of multi-class securities, typically through the issuance of K Certificates and SB Certificates, we also issue and guarantee a smaller number of other types of single-class and multi-class securities that do not result in the transfer of credit risk. We continue to seek new and innovative credit risk transfer opportunities beyond our current product offerings so that we can provide further liquidity to the multifamily market and reduce taxpayer exposure to credit risk.

Credit Risk Transfer Securitizations

Our credit risk transfer securitizations typically involve the issuance of senior, mezzanine and subordinated securities that represent undivided beneficial interests in trusts that hold pools of multifamily loans that we previously purchased. The volume of our credit risk transfer securitizations is generally influenced by the size of our securitization pipeline, along with market demand for multifamily securities. Our principal credit risk transfer securitization products are K Certificates and SB Certificates. As shown in the diagram below, in a typical K Certificate transaction, we sell multifamily loans to a non-

Freddie Mac securitization trust that issues senior, mezzanine and subordinated securities, and simultaneously purchase and place the senior securities into a Freddie Mac securitization trust that issues guaranteed K Certificates. In these transactions, we guarantee the senior securities, but do not issue or guarantee the mezzanine or subordinated securities. As a result, a large majority of expected and stress credit risk is sold to third-party investors through the mezzanine and subordinated securities, thereby reducing our credit risk exposure.

- K Certificates - Regularly issued structured pass-through securities backed by recently originated multifamily loans. This product provides investors with a wide-range of structural and collateral options that provide for stable cash flows and a structured credit enhancement. While the amount of guarantee fee we receive may vary by collateral type, it is generally fixed for those K Certificate series that we issue with regular frequency (e.g., 5, 7 and 10-year fixed-rate K Certificates and our Floating Rate K Certificates). The guarantee fee received on these standard K Certificates currently ranges between 20 basis points and 50 basis points.

The guarantee fee on K Certificates that we do not issue on a regular basis, such as our single-sponsor K Certificates, is determined based on the specific risks associated with the underlying collateral and the structure of the securitization, including tranche sizes and risk distribution.

- SB Certificates - Regularly issued securities typically backed by multifamily small balance loans that we underwrite at loan origination and purchase prior to securitization. Similar to our K Certificate transactions, a non-Freddie Mac trust will issue the senior classes of securities, which we guarantee, as well as the unguaranteed subordinated securities. However, unlike our K Certificate transactions, we do not purchase the senior classes of securities, nor do we place those securities into a Freddie Mac Trust. The guarantee fee we receive in these transactions is generally 35 basis points.

From time to time, we may undertake certain activities to support the liquidity of K Certificates and SB Certificates. For more information, see Risk Factors - Other Risks - The profitability of our

multifamily business could be adversely affected by a significant decrease in demand for our K Certificates and SB Certificates.

In addition to our K Certificate and SB Certificate transactions, we also issue the following credit risk transfer securitization products:

- ML Certificates - We securitize pools of tax-exempt or taxable loans that we underwrite and own prior to securitization and issue both guaranteed senior ML Certificates and unguaranteed subordinated ML Certificates. The guarantee fee received on our ML Certificates is negotiated.
- Multifamily Aggregation Risk Transfer Certificates (KT Certificates) - These securities are backed by a revolving pool of multifamily loans that are awaiting sale into a K Certificate transaction. Using this structure, we issue guaranteed senior securities and unguaranteed mezzanine and subordinated securities to third parties. During the revolving period of this product, we will purchase loans from the KT trust for sale into a K Certificate transaction and replace those purchased loans with additional eligible loans. Through this product we are able to transfer a portion of the front-end credit risk associated with our securitization pipeline prior to final securitization. Given our right to purchase loans from the KT trust, we consolidate this structure and the loans in the revolving pool remain in our securitization pipeline until securitization.

Other Securitization Products

Our other securitization products involve the issuance of single-class or multiclass pass-through securities that represent beneficial interests in trusts that hold pools of multifamily loans. We guarantee the single-class securities and may guarantee some or all of the multi-class securities. The collateral for these securitizations may include loans underwritten and purchased by us at loan origination or loans we do not own prior to securitization and that we underwrite after (rather than at) origination.

Our other securitization products generally do not transfer credit risk away from Freddie Mac, as we guarantee all of the issued securities, or there is no credit risk to transfer through securitization as we were not previously exposed to the underlying collateral’s credit risk prior to securitization (the collateral is contributed to the securitization by third parties). However, certain of these other securitization products transfer a portion or all of the interest rate risk associated with the underlying collateral to third parties. The guarantee fee received for our other securitization products will vary and is typically negotiated with the loan seller or established by us, based on the specific risks of the underlying collateral and the structure of the securitization.

Our principal other securitization products include the following:

- PCs - We securitize multifamily loans into fixed-rate pass-through securities that are similar in structure to our Single-Family Guarantee segment fixed-rate PCs. In these securitizations, we guarantee the full payment of principal and timely payment of interest.
- K Certificates without subordination - We securitize multifamily loans that we own and issue K Certificates without subordination using a transaction structure similar to our K Certificates. However, unlike K Certificates, these transactions are fully guaranteed by Freddie Mac and no mezzanine or subordinated securities are issued.
- Q Certificates - We issue Q Certificates using a securitization structure that is similar to our K Certificates and that provides for structural credit enhancements that may include either subordination or other loss sharing features. However, unlike K Certificates, the loans backing the Q

Certificates are contributed by third parties and are underwritten by us after (rather than at) origination.

- M Certificates - We securitize pools of tax-exempt or taxable multifamily housing revenue bonds contributed by third parties and issue guaranteed senior M Certificates and unguaranteed subordinated M Certificates.

Summary of our Primary Business Model and Its Impacts to Segment Earnings

The following diagram summarizes the activities included in our primary business model and the corresponding impacts to our Segment Earnings.

Other Credit Risk Transfer Products

For the credit risk of multifamily assets that we have not transferred through securitizations, we may pursue other strategies to reduce our credit risk exposure. Our principal other credit risk transfer products include the following:

- SCR debt notes - Unsecured and unguaranteed corporate debt obligations. We began issuing our SCR debt notes in 2016 in order to transfer a portion of the credit risk of the loans underlying certain of our other mortgage-related guarantees to third parties. The interest we pay on our SCR debt notes effectively reduces the guarantee fee income we would otherwise earn on the other mortgage-related guarantees. SCR debt notes are generally similar in structure to our Single-Family Guarantee segment's STACR debt notes.
- Loan sales - To reduce our credit risk exposure related to certain loans, we engage in non-securitization related transactions, including whole loan sales. These loan sales are to third parties and may include sales to funds that invest in loans where we may also provide secured financing.

Other Guarantees

- Other mortgage-related guarantees - We guarantee mortgage-related assets held by third parties in exchange for guarantee fee income, without securitizing those assets. For example, we provide guarantees on certain tax-exempt multifamily housing revenue bonds secured by low- and

moderate-income multifamily loans. The guarantee fees we receive on these transactions are negotiated.

Investing Activities

- Mortgage loans - We hold a portfolio of multifamily mortgage loans as part of a buy-and-hold investment strategy. Although we continue to purchase new multifamily mortgage loans for this portfolio, our new purchase activity has leveled off as this buy-and-hold strategy is not part of our primary business model.
- Agency mortgage-related securities - We may purchase or retain a portion of the K Certificates or SB Certificates and other types of multifamily securitization products we issue, depending on market conditions, and we may also buy or sell these securities in the secondary market.
- Non-agency mortgage-related securities - We may purchase a portion of the unguaranteed mezzanine and subordinated securities related to our securitization transactions, depending on market conditions. However, to date, we have not purchased any of the unguaranteed subordinated securities that are in the first loss position.
- CMBS - We are not currently an active purchaser of CMBS. However, we continue to hold a portfolio of CMBS and other multifamily investment securities that we acquired under a prior buy-and-hold investment strategy. This portfolio is declining primarily due to runoff.

Customers

Our multifamily loan volume is sourced through our approved lenders, who are primarily non-bank real estate finance companies and banks. We generally provide post-construction financing to apartment project operators with established performance records. The following charts show the concentration of our 2017 multifamily new business volume by our largest sellers and loan servicing by our largest servicers as of December 31, 2017. Any seller or servicer with a 10% or greater share is listed separately.

Percentage of Multifamily New Business Volume

Percentage of Multifamily Servicing Volume[(1)]

(1) Excludes loans underlying securitizations where we are not in a first loss position, primarily K Certificates and SB Certificates.

Competition

We compete on the basis of price, service and products, including our use of certain securitization structures. Our principal competitors in the Multifamily segment are Fannie Mae, FHA, commercial and investment banks, CMBS conduits, savings institutions and life insurance companies.

Market Conditions

The graphs and related discussion below present certain multifamily market indicators that can significantly affect the business and financial results of our Multifamily segment.
Change in Effective Rents for the Year Ended December 31,
Source: REIS, Inc.

Apartment Vacancy Rates as of December 31,

Source: REIS, Inc.
Apartment Completions and Net Absorption for the Year Ended December 31,
Source: REIS, Inc.

Commentary

- Apartment completions are an indication of the supply of rental housing. Net absorption, which is a measurement of the rate at which available apartments are occupied, is an indication of demand for rental housing.
- While vacancy rates increased during 2017 as apartment completions outpaced net absorption, these rates remain well below the long-term average. Due to the introduction of a significant amount of new supply in the latter half of the year, net absorptions significantly lagged behind new apartment completions in 2017. Although we expect continued strong demand, it may take longer to absorb these new units compared to prior years.
- Effective rent (i.e., the average rent paid by the tenant over the term of the lease, adjusted for concessions by the landlord and costs borne by the tenant) growth for 2017 remained strong relative to the long-term average, primarily due to an increase in potential renters from healthy employment, higher single family home prices and a growing household preference for rental housing due to changes in lifestyle preferences and demographic trends.
- Our financial results for 2017 were not significantly affected by these market conditions.
- Multifamily property prices continued to grow with 11% annualized growth in 2017, indicating a healthy multifamily market, though prices were tempered by moderating effective rent growth, higher vacancy rates and rising interest rates.
- While the impacts of Hurricanes Irma and Maria on the multifamily markets located in the affected areas are still being evaluated, we have seen effective rents increase and vacancy rates decrease in the areas affected by Hurricane Harvey, as displaced single-family homeowners require temporary housing, resulting in increased demand for rental housing.

K Certificate Benchmark Spreads as of December 31,
Source: Independent Dealers
Commentary

- The valuation of our securitization pipeline and the profitability of our primary credit risk transfer securitization product, the K Certificate, are affected by changes in K Certificate benchmark spreads as well as deal-specific attributes, such as tranche size, risk distribution and collateral characteristics (loan term, coupon type, prepayment restrictions and underlying property type). These market spread movements and deal-specific attributes contribute to our earnings volatility, which we manage by controlling the size of our securitization pipeline and by entering into certain spread-related derivatives.
- K Certificate benchmark spreads are market-quoted spreads over the U.S. swap curve. The 10-year fixed-rate spread represents the spread for the largest guaranteed class of a typical fixed-rate K Certificate, while the 7-year ARM spread represents the spread for the largest guaranteed class of a typical floating-rate K Certificate.
- K Certificate benchmark spreads tightened throughout 2017, due to a reduction in macroeconomic market volatility. By comparison, K Certificate benchmark spreads were more volatile during the first half of 2016, prior to tightening sharply in the second half of 2016. Overall, this tightening had a positive effect in 2016 and 2017 on the valuation of our securitization pipeline and K Certificate profitability.

Multifamily Mortgage Debt Outstanding as of December 31,

Source: Federal Reserve Financial Accounts of the United States of America. For 2017, the amount is as of September 30, 2017 (latest available information).

Multifamily Delinquency Rates as of December 31,

Source: Freddie Mac, FDIC Quarterly Banking Profile, Trepp, LLC. (Multifamily CMBS market, excluding REOs), American Council of Life Insurers (ACLI). For 2017, the amounts for Multifamily CMBS market and FDIC insured institutions are as of September 30, 2017 and the amount for ACLI investment bulletin is as of December 31, 2017 (latest available information).

Commentary

- During 2017, the multifamily mortgage market grew significantly because of stronger demand for multifamily loan products due to an elevated number of new apartment completions, strong multifamily market fundamentals and low interest rates. Multifamily market fundamentals were primarily driven by a healthy job market, population growth, high propensity to rent among young adults and rising single-family home prices. We expect continued growth in the multifamily mortgage market during 2018 due to these same drivers.
- Our share of multifamily mortgage debt outstanding grew slightly during 2017, primarily due to our strategic pricing efforts and the expansion of our new product offerings, which were generally excluded from the Conservatorship Scorecard production cap.
- Our multifamily delinquency rates during 2017 remained low compared to other industry participants, ending the year at 2 bps, primarily due to our prior-approval underwriting approach, strong multifamily market fundamentals and low interest rates. See Risk Management - Multifamily

Mortgage Credit Risk - Managing Our Portfolio, Including Loss Mitigation Activities for additional information on our delinquency rates.

- We expect the credit losses and delinquency rates for the multifamily mortgage portfolio to remain low in the near term.

Business Results

The graphs, tables and related discussion below present the business results of our Multifamily segment.

New Business Volume

New Business Volume for the Year Ended December 31,

Acquisition of Units by Area Median Income (AMI) for the Year Ended December 31,

Commentary

- The 2017 Conservatorship Scorecard production cap remained at $36.5 billion and will decrease to $35.0 billion in 2018. The production cap is subject to reassessment throughout the year by FHFA to determine whether an increase in the cap is appropriate based on a stronger than expected overall market. We do not expect that the decrease in the cap will have a material impact on our 2018 new business volume.

- Outstanding loan purchase commitments were $14.5 billion and $12.4 billion as of December 31, 2017 and December 31, 2016, respectively. Both period-end balances include loan purchase commitments where we have elected the fair value option.
- Our new business volume and outstanding loan purchase commitments were higher during 2017 compared to 2016 due to the overall growth of the multifamily mortgage market resulting from stronger demand for multifamily loan products and our strategic pricing efforts. Despite the unchanged production cap, we had a record volume in 2017 primarily due to a focus on purchase activity associated with targeted loan types that were considered uncapped.
- Approximately 46% of our new business volume for 2017 counted towards the 2017 Conservatorship Scorecard production cap, while the remaining 54% was considered uncapped. The increase in uncapped new business volume was primarily driven by the growth in purchases of loans originated pursuant to our Green Advantage initiative, which we expanded during 2017, along with our effort to support the growth of the overall multifamily market.
- While our share of multifamily mortgage debt outstanding increased slightly during 2017, we expect increased competition from other market participants to continue in the future.
- Approximately 88% of our 2017 new business volume was designated for securitization and included in our securitization pipeline. Combined with market demand for our securities, our new business volumes from the second half of 2017 will be the primary driver of and collateral for our credit risk transfer securitizations, primarily our K Certificate and SB Certificate issuances, for the first half of 2018.
- Approximately 83% of the eligible units we financed during 2017 were affordable to households earning at or below the median income in their area (eligible units are multifamily units that qualify towards our affordable housing goal). Furthermore, during 2017, we continued our support of workforce housing through our continued purchases of manufactured housing community loans and small balance loans.

Multifamily Portfolio and Market Support

Total Multifamily Portfolio as of December 31,

Multifamily Mortgage Investments Portfolio as of December 31,

Multifamily Market Support

The following table summarizes our support of the multifamily market.

(UPB in millions)	December 31, 2017	December 31, 2016
Unsecuritized mortgage loans held-for-sale	$20,537	$16,544
Unsecuritized mortgage loans held-for-investment	17,702	25,873
Unsecuritized non-mortgage loans[1]	473	—
Mortgage-related securities	7,451	12,517
Guarantee portfolio	203,074	157,993
Total multifamily portfolio	249,237	212,927
Add: Unguaranteed securities[2]	30,772	24,573
Less: Acquired mortgage-related securities[3]	(7,109)	(5,793)
Total multifamily market support	$272,900	$231,707

(1) Reflects the UPB of loans sold to a whole loan investment fund that was financed by Freddie Mac.

(2) Reflects the UPB of unguaranteed securities issued as part of our securitization products.

(3) Reflects the UPB of mortgage-related securities that were both issued and acquired by us. This UPB must be removed to avoid a double-count, as it is already reflected within the guarantee portfolio and/or unguaranteed securities.

Commentary

- Our total multifamily portfolio increased during 2017, primarily due to a 29% growth in new business volume, coupled with an increase in our issuance of certain other securitization products (e.g., Q Certificates and M Certificates). The vast majority of the growth in our guarantee portfolio was associated with ongoing credit risk transfer securitizations, primarily K Certificate and SB Certificate transactions.
- At December 31, 2017, the UPB of our unsecuritized held-for-sale loans and mortgage-related securities, which are measured at fair value or lower-of-cost-or-fair-value, declined slightly from December 31, 2016. The overall decline, which was attributable to the runoff of our CMBS portfolio, was largely offset by an increase in the balance of our securitization pipeline due to the growth of our new business volume and the reclassification of certain loans from held-for-investment to held-for-sale during 4Q 2017.
- At December 31, 2017, approximately 68% of our held-for-sale loans and held-for-sale loan commitments were fixed-rate, while the remaining 32% were floating rate.
- We expect our guarantee portfolio to continue to grow as a result of ongoing credit risk transfer securitizations, primarily K Certificate and SB Certificate transactions, which we expect to be driven by continued strong new business volume. We also expect a continued reduction in our CMBS portfolio due to ongoing principal repayments and maturities, which will serve to reduce our less liquid assets.

Net Interest Yield Earned for the Year Ended December 31,
Commentary

- Net interest yield increased significantly during 2017 compared to 2016 primarily due to higher prepayment income received from interest-only securities that we hold in certain of our more seasoned K Certificate transactions and from loans.
- The weighted average portfolio balance of interest-earning assets decreased due to the run-off of our held-for investment loans and non-agency CMBS.

Credit Risk Transfer Activity

Credit Risk Transfer Activity for the Quarter Ended

Credit Risk Transfer Activity for the Year Ended December 31,(1)

(1) The amounts disclosed in the bar graph above represent the net credit risk transferred to third parties.

Commentary

- The UPB of assets subject to credit risk transfer transactions was higher during 2017 compared to 2016, primarily due to a larger average balance in our securitization pipeline, which was driven by our strong 2017 new business volume. Through these transactions, we transferred a large majority of the expected and stress credit losses of these assets to third parties, primarily by issuing

unguaranteed subordinated securities as part of our K Certificate and SB Certificate transactions. We began selling certain of our loans to investment funds in 2017, resulting in the full transfer of the associated credit risk on the loans to third parties.

- In 2017, we have transferred a large majority of the expected and stress credit losses related to a record $65 billion in UPB of loans, and since 2009, $249 billion in UPB of loans through our credit risk transfer products, primarily K Certificates and SB Certificates.
- Based on the strength of our new business volume for the second half of 2017, we expect our credit risk transfer activity for 1Q 2018 to exceed our 1Q 2017 activity.
- While our K Certificate and SB Certificate issuances continue to be our primary mechanism to transfer multifamily mortgage credit risk, we introduced new initiatives to transfer credit risk during 2017 and expect to continue to develop new credit risk transfer initiatives in 2018.

Guarantee Activities

Guarantee Assets for Year Ended December 31,

Unearned Guarantee Fees as of December 31,

Commentary

- We generally recognize a guarantee asset on our consolidated balance sheets each time we enter into a financial guarantee contract. This asset represents the present value of guarantee fees we expect to receive in the future from those guarantee transactions. We recognize these fees in segment earnings over the expected remaining guarantee term. While we expect to collect these future fees based on historical performance, the actual amount collected will depend on the performance of the underlying collateral subject to our financial guarantee.
- The amount of new guarantee assets recognized in 2017 exceeded the new guarantee assets recognized in 2016, primarily due to an increase in the UPB of our credit risk transfer securitizations, primarily K Certificate and SB Certificate issuances, coupled with longer average guarantee terms. This increase was partially offset by slightly lower average guarantee fee rates on these same securitizations due to underlying loan products that, by their nature and design, have less risk.
- The balance of unearned guarantee fees increased during 2017 due to the continued growth of our multifamily guarantee business, as our credit risk transfer securitization volume continued to be strong, significantly outpacing runoff.

Financial Results

The table below presents the components of the Segment Earnings and comprehensive income for our Multifamily segment. As we use derivatives to economically hedge interest-rate related fair value changes of most of our assets measured at fair value, interest rates have a minimal impact on our total comprehensive income.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Net interest income	$1,206	$1,022	$1,049	$184	18 %	($27)	(3)%
Guarantee fee income	676	511	339	165	32 %	172	51 %
Benefit (provision) for credit losses	(13)	22	26	(35)	(159)%	(4)	(15)%
Gains (losses) on loans and other non-interest income	1,485	1,166	(198)	319	27 %	1,364	689 %
Derivative gains (losses)	181	407	372	(226)	(56)%	35	9 %
Administrative expense	(395)	(362)	(325)	(33)	(9)%	(37)	(11)%
Other non-interest expense	(66)	(58)	(60)	(8)	(14)%	2	3 %
Segment Earnings before income tax expense	3,074	2,708	1,203	366	14 %	1,505	125 %
Income tax expense	(1,060)	(890)	(376)	(170)	(19)%	(514)	(137)%
Segment Earnings, net of taxes	2,014	1,818	827	196	11 %	991	120 %
Total other comprehensive income (loss), net of tax	(77)	(236)	(261)	159	67 %	25	10 %
Total comprehensive income (loss)	$1,937	$1,582	$566	$355	22 %	$1,016	180 %

While certain multifamily properties underlying our loans and financial guarantees were damaged by the hurricane events of 3Q 2017, such events did not significantly affect our 2017 segment financial results.

Key Drivers:

- 2017 vs. 2016
  - Higher net interest yields, partially offset by a decline in our weighted average portfolio balance of interest-earning assets, resulted in increased net interest income;
  - Continued growth in our multifamily guarantee portfolio, partially offset by slightly lower average guarantee fee rates on new guarantee business volume, resulted in increased guarantee fee income;
  - Larger average balances of held-for-sale commitments and securitization pipeline loans due to greater new business volume, partially offset by less tightening of K Certificate benchmark spreads and the effects of strategic pricing, resulted in larger fair value gains; and
  - Disposition of certain non-agency CMBS, coupled with spread tightening, resulted in larger gains on non-agency CMBS.
- 2016 vs. 2015
  - Lower weighted average portfolio balance of interest-earning assets, partially offset by a higher net interest yield, resulted in decreased net interest income;
  - Continued growth in our multifamily guarantee portfolio and higher average guarantee fee rates on new guarantee business volume resulted in increased guarantee fee income; and
  - Tightening of K Certificate benchmark spreads, coupled with improved pricing of K Certificates and SB Certificates, as well as greater new business volume, resulted in fair value gains during

2016, while widening of K Certificate benchmark spreads resulted in fair value losses during 2015.

Capital Markets

Business Overview

The Capital Markets segment supports our primary business strategies by creating:

A Better Freddie Mac:

- Engaging in economically sensible transactions to reduce our less liquid assets;
- Managing the mortgage-related investments portfolio’s risk-versus-return profile based on our internal economic capital framework, which is aligned with the Conservatorship Capital Framework;
- Enhancing the liquidity of our issued securities in the secondary mortgage market to support our business needs;
- Responding to market opportunities in funding our business activities;
- Managing our economic interest-rate risk through the use of derivatives and various debt instruments; and
- Attempting to align prepayment and pooling profiles for Freddie Mac TBA programs to match Fannie Mae's TBA characteristics.

A Better Housing Finance System:

- Delivering mortgage capital markets services including our cash loan purchase program, in conjunction with the Single-family Guarantee segment; and
- Implementing the single (common) security initiative for Freddie Mac and Fannie Mae, which is intended to increase the liquidity of the TBA market and to reduce the disparities in trading value between our PCs and Fannie Mae's single-class mortgage-related securities.

The Capital Markets segment is responsible for managing the majority of our mortgage-related investments portfolio, and providing company-wide treasury and interest-rate risk management functions. In addition, we are responsible for managing our securitization and resecuritization activities related to single-family loans.

Our mortgage portfolio management activities primarily include single-family unsecuritized loans, a diminishing portfolio of non-agency mortgage-related securities, and purchases and sales of agency mortgage-related securities. In addition, we actively engage in the structuring of our agency mortgage-related securities. Our portfolio management activities also include responsibility for maintaining the other investments and cash portfolio for purposes of short-term liquidity management. However, certain portions of the mortgage-related investments portfolio are not managed by us, including the portions of the portfolio related to multifamily assets, single-family seriously delinquent loans and the credit risk on single-family performing loans.

We provide a company-wide treasury function, primarily managing our funding and liquidity needs on both a short- and long-term basis. The primary activities of the treasury function include issuing, calling and repurchasing debt, and maintaining a portfolio of non-mortgage investments.

Our interest-rate risk management function consolidates and manages the overall interest-rate risk of the company. To reduce our exposure to changes in the cash flows of interest-rate sensitive assets and

liabilities due to interest rate changes, we actively monitor and economically hedge this risk, primarily through the use of derivative instruments. In addition, we further reduce these interest-rate exposures through active management of our debt funding mix and through the structuring of our investments in mortgage-related securities.
Finally, our segment is responsible for management of our securitization and resecuritization activities related to single-family loans, which are discussed in more detail in Our Business Segments - Single-Family Guarantee.
Although we manage our business on an economic basis, we have executed certain transactions in an effort to reduce the probability of our having a negative net worth due to changes in interest rates and thus being required to draw from Treasury. In 2017, we implemented hedge accounting, which may reduce the need for these types of transactions. Also, we may forgo certain investment opportunities for a variety of reasons, including the limit on the size of our mortgage-related investments portfolio or the risk that a particular accounting treatment may create earnings variability as well as result in a future draw from Treasury. For additional information on the limits on the mortgage-related investments portfolio established by the Purchase Agreement and by FHFA, see Conservatorship and Related Matters - Limits on Our Mortgage-Related Investments Portfolio and Indebtedness.

Products and Activities

Investing, Liquidity Management and Related Activities

In our Capital Markets segment, our objectives are to make appropriate risk and capital management decisions, effectively execute our strategy and be responsive to market conditions. We manage the following types of products:

- Agency mortgage-related securities - We primarily invest in Freddie Mac mortgage-related securities, but may also invest in Fannie Mae and Ginnie Mae mortgage-related securities from time to time. Our activities with respect to this product may include purchases and sales, dollar roll transactions and structuring activities (e.g., resecuritizing existing agency securities into REMICs and selling some or all of the resulting REMIC tranches).
- Non-agency mortgage-related securities - We generally no longer purchase non-agency mortgage-related securities that have not been guaranteed by a GSE, but continue to have a portfolio of such securities that we acquired in prior years. Our activities with respect to this product are primarily sales. In recent years, we and FHFA reached settlements with a number of institutions to mitigate or recover losses we recognized in prior years.
- Single-family unsecuritized loans - We acquire single-family unsecuritized loans in two primary ways:
  - Loans acquired through our cash loan purchase program that are awaiting securitization - We securitize a majority of the loans acquired through our cash loan purchase program into Freddie Mac mortgage-related securities, primarily PCs, which may be sold to investors or retained in our mortgage-related investments portfolio; and
  - Seriously delinquent or modified loans that we have removed from PC pools:

n Certain of these loans may re-perform, either on their own or through modification. Reperforming loans are managed by both the Capital Markets and Single-family Guarantee segments, but are included in the Capital Markets segment's financial results.

l We continue to reduce the balance of our reperforming loans through a variety of methods, including the following:

- Securitization into Freddie Mac PCs, with all of the resulting mortgage-related securities initially being retained. We may resecuritize a portion of the retained mortgage-related securities, with some of the resulting interests being sold to third parties; and
- Sales and securitization using a senior subordinate securitization structure, where we guarantee the resulting senior securities.

n Loans that remain seriously delinquent are also managed by both the Capital Markets and Single-family Guarantee segments, but are included in the Single-family Guarantee segment's financial results.

l We continue to reduce the balance of our seriously delinquent loans through loss mitigation and foreclosure activities, which are managed by the Single-family Guarantee segment; and

l We also continue to reduce the balance of our seriously delinquent loans through direct loan sales.

n Other investments and cash portfolio - We invest in other investments, including: (i) the Liquidity and Contingency Operating Portfolio, primarily used for short-term liquidity management, (ii) cash and other investments held by consolidated trusts, (iii) collateral pledged by derivative and other counterparties, (iv) investments used to pledge as collateral, (v) advances to lenders and (vi) other secured lending activities. In our advances to lenders program, we provide funds to lenders for mortgage loans that they will subsequently either sell through our cash purchase program or securitize into PCs that they will deliver to us. In our other secured lending activities, we invest in securities purchased under agreements to resell as a mechanism to provide financing to investors in Freddie Mac securities to increase liquidity and expand the investor base for those securities. We may do other types of secured lending transactions in the future.

The primary impacts to Segment Earnings are:

- Interest income on agency and non-agency mortgage-related securities, unsecuritized loans and our other investments and cash portfolio;
- Fair value gains and losses due to changes in interest rate and market spreads on our agency and non-agency mortgage-related securities and on certain securities held within our other investments and cash portfolio that are accounted for as investment securities. These amounts are recognized in Segment Earnings or Total other comprehensive income(loss) depending upon their classification (trading or available-for-sale, respectively); and
- Gains and losses on the sale of unsecuritized loans.

We evaluate the liquidity of our mortgage-related assets based on three categories (in order of liquidity):

n Liquid - single-class and multi-class agency securities, excluding certain structured agency securities collateralized by non-agency mortgage-related securities. Also includes certain non-agency mortgage-related securities guaranteed by a GSE;

- Securitization Pipeline - performing single-family loans purchased for cash and primarily held for a short period until securitized, with the resulting Freddie Mac issued securities being sold or retained; and
- Less Liquid - assets that are less liquid than both agency securities and loans in the securitization pipeline (e.g., reperforming loans and non-agency mortgage-related securities not guaranteed by a GSE).

We may undertake various activities in an effort to support our presence in the agency securities market or to support the liquidity of our PCs, including their price performance relative to comparable Fannie Mae securities. These activities may include the purchase and sale of agency securities, the purchase of loans, dollar roll transactions and structuring activities, such as resecuritization of existing agency securities and the sale of some or all of the resulting securities. Depending upon market conditions, there may be substantial variability in any period in the total amount of securities we purchase or sell. The purchase or sale of agency securities could, at times, adversely affect the price performance of our PCs relative to comparable Fannie Mae securities.

We incur costs in connection with our efforts to support our presence in the agency securities market and to support the liquidity and price performance of our PCs, including by engaging in transactions that yield less than our target rate of return. For more information, see Risk Factors - Other Risks - A significant decline in the price performance of or demand for our PCs could have an adverse effect on the volume and/or profitability of our new single-family guarantee business.

Funding and Liquidity Management Activities

Our treasury function manages the funding needs of the company, including the Capital Markets segment, primarily through the issuance of unsecured other debt. The type and term of debt issued is based on a variety of factors and is designed to meet our ongoing cash needs and to comply with our Liquidity Management Framework. This Framework provides a mechanism for us to sustain periods of market illiquidity, while being able to maintain certain business activities and remain current on our obligations. See Liquidity and Capital Resources - Liquidity Management Framework for additional discussion of our Liquidity Management Framework.

We primarily use the following types of products as part of our funding and liquidity management activities:

- Discount Notes and Reference Bills - We issue short-term instruments with maturities of one year or less. These products are generally sold on a discounted basis, paying principal only at maturity. Reference Bills are auctioned to dealers on a regular schedule, while discount notes are issued in response to investor demand and our cash needs.
- Medium-term Notes - We issue a variety of fixed-rate and variable-rate medium-term notes, including callable and non-callable securities, and zero-coupon securities, with various maturities.
- Reference Notes Securities - Reference Notes securities are non-callable fixed-rate securities, which we currently issue with original maturities greater than or equal to two years.
- Securities sold under agreements to repurchase - Collateralized short-term borrowings where we sell securities to a counterparty with an agreement to repurchase those securities at a future date.

In addition, proceeds from the issuance of STACR and SCR debt notes are used to meet the funding needs of the company. We consider the issuance of these debt notes when managing the treasury function for the company. For a description of STACR debt notes, see Our Business Segments - Single-Family Guarantee - Business Overview - Products and Activities, and for a description of SCR debt notes, see Our Business Segments - Multifamily - Business Overview - Products and Activities.

The average life of our assets is longer than the average life of our liabilities, which creates liquidity risk. To manage short-term liquidity risk, we may hold a combination of cash, cash-equivalent and non-mortgage-related investments in our Liquidity and Contingency Operating Portfolio. These instruments are limited to those we expect to be liquid or mature in the short term. We also lend available cash on a short-term basis through transactions where we purchase securities under agreements to resell. This portfolio is designed to allow us to meet all of our obligations in the event that we lose access to the unsecured debt markets for a period of time.

See Liquidity and Capital Resources for a further discussion of our funding and liquidity management activities.

The primary impacts to Segment Earnings are:

- Interest expense on our various funding products; and
- Gains and losses on the early termination (call or repurchase) of our funding products.

Interest-Rate Risk Management Activities

We manage the economic interest-rate risk for the company and have management-approved limits for interest-rate risk, as measured by our models. See Risk Management - Market Risk for additional information, including the measurement of the interest rate sensitivity of our financial assets and liabilities.

There is a cash flow mismatch between our financial assets and the other debt that we use to fund those assets. This mismatch in cash flows not only leads to liquidity risk, but also results in interest-rate risk. We typically use interest-rate derivatives to reduce the economic risk exposure due to this mismatch. Using our risk management practices described in the Risk Management - Market Risk section, we seek to reduce this impact to low levels. Additionally, financial assets that are likely to be sold prior to their final maturity may have a different debt and derivative mix than financial assets that we plan to hold for a longer period. As a result, interest rate risk measurements for those assets may include additional assumptions (such as a view on expected changes in market spreads) concerning their price sensitivity rather than just a longer-term view of cash flows.

To manage our interest rate risk, we primarily use interest rate swaps, options, swaptions and futures. When we use derivatives to mitigate our risk exposures, we consider a number of factors, including cost, exposure to counterparty credit risk and our overall risk management strategy.

While our interest-rate risk management activities are primarily focused on reducing our economic interest-rate risk, during 2017, we adopted hedge accounting strategies to reduce our GAAP earnings variability. The adoption of hedge accounting was a business decision intended to better align earnings with the economics of our business, but it is not intended to change the investment and portfolio

management decisions that our segment would otherwise make. For more information on our use of hedge accounting see Risk Management - Market Risk - GAAP Earnings Variability and Note 9.
The primary impacts to Segment Earnings are:

- Fair value gains and losses on derivatives not designated in qualifying hedge relationships;
- Interest income/expense on derivatives; and
- Differences between the change in fair value of the hedged item attributable to the risk being hedged and changes in the fair value of the hedging instrument for derivatives designated in qualifying fair value hedge accounting relationships.

Summary of our Primary Business Model and Its Impacts to Segment Earnings
Securitization Activities
We manage the company's securitization and resecuritization activities related to single-family loans. See Our Business Segments - Single-Family Guarantee for a discussion of our single-family securitization and guarantee products.
Customers

Our customers include banks and other depository institutions, insurance companies, money managers, central banks, pension funds, state and local governments, REITs, brokers and dealers, and a variety of lenders as discussed in Our Business Segments - Single-Family Guarantee - Business Overview - Customers. Our unsecured other debt securities and structured mortgage-related securities are initially purchased by dealers and redistributed to their customers.

Competition

Our competitors in the Capital Markets segment are firms that invest in loans and mortgage-related assets and issue corporate debt, including Fannie Mae, REITs, supranationals (international institutions that provide development financing for member countries), commercial and investment banks, dealers, savings institutions, insurance companies, the Federal Farm Credit Banks and the FHLBs.

Market Conditions

The following graph and related discussion present the par swap rate curve for the most recent three years. Changes in par swap rates can significantly affect the fair value of our debt, derivatives and mortgage and non-mortgage-related securities. As a result, changes in par swap rates will affect the business and financial results of our Capital Markets segment.

Par Swap Rates as of December 31,

Source: BlackRock

Commentary

- We primarily use LIBOR-based derivatives and fixed-rate debt to hedge our interest rate risk. The mortgage-related investments portfolio's exposure to interest rate risk is calculated by our models that project loan and security cash flows over a variety of scenarios. For additional information on our exposure to interest rate risk, see Risk Management - Market Risk.

n 2017 vs. 2016 and 2016 vs. 2015

- The 2-year and 10-year swap rates increased, resulting in gains for our pay-fixed interest rate swaps and losses for our receive-fixed interest rate swaps, certain of our option contracts and the vast majority of our investments in securities.
- 3-month LIBOR increased during 2017 and during the fourth quarter of 2016, resulting in higher yields for our short-term interest-earning assets, higher costs for our short-term interest-bearing liabilities and interest-rate related losses for certain of our shorter duration trading securities.

Business Results

The graphs and related discussion below present the business results of our Capital Markets segment.

Investing Activity

The following graphs present the Capital Markets segment's total investments portfolio and the composition of its mortgage investments portfolio by liquidity category.

Investments Portfolio

Mortgage Investments Portfolio

Commentary

- We continue to reduce the size of our mortgage investments portfolio in order to comply with the mortgage-related investments portfolio's year-end limits. The balance of our mortgage investments portfolio declined 14.9% between December 31, 2016 and December 31, 2017.
- The balance of our other investments and cash portfolio decreased 7.2% primarily due to lower near-term cash needs for upcoming maturities and anticipated calls of other debt at the end of 2017 compared to the end of 2016.
- The percentage of less liquid assets relative to our total mortgage investments portfolio declined to 28.4% at December 31, 2017 from 34.4% at December 31, 2016, primarily due to repayments, sales and securitizations of our less liquid assets.

- The overall liquidity of our mortgage investments portfolio continued to improve as our less liquid assets decreased at a faster pace than the overall decline of our mortgage investments portfolio.

Reduction in Less Liquid Assets

Securitizations of Reperforming Loans into Freddie Mac PCs

Sales of Less Liquid Assets

Commentary

- Since 2013, we have focused on reducing, in an economically sensible manner, our holdings of certain less liquid assets, including single-family reperforming loans and non-agency mortgage-related securities. Our disposition strategies for our less liquid assets include securitizations and sales.
- During 2017, our sales of less liquid assets included $9.2 billion in UPB of non-agency mortgage-related securities and $8.2 billion of reperforming loans. Our sales of reperforming loans involved securitization of the loans using senior subordinate securitization structures, in which we guaranteed the resulting senior securities. As part of these transactions, we retained certain of the guaranteed senior securities for our mortgage-related investments portfolio.
- One of our principal strategies related to the securitization of reperforming loans is to create Freddie Mac PCs and initially retain all of the resulting mortgage-related securities. This strategy also includes the resecuritization of a portion of the retained mortgage-related securities, with some of the resulting interests being sold to third parties. During 2017, we securitized $1.2 billion of single-family reperforming loans through PC securitization.

Net Interest Yield and Average Balances

Net Interest Yield & Average Investments Portfolio Balance

Commentary

- Net Interest Yield
  - 2017 vs. 2016 - remained relatively flat.
  - 2016 vs. 2015 - decreased 17 basis points, primarily due to the reduction in the balance of our higher yielding mortgage investments portfolio, pursuant to the portfolio limits established by the Purchase Agreement and FHFA.

Financial Results

The table below presents the components of the Segment Earnings and comprehensive income for our Capital Markets segment.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Net interest income	$3,381	$3,812	$4,665	($431)	(11)%	($853)	(18)%
Net impairment of available-for-sale securities recognized in earnings	236	269	420	(33)	(12)%	(151)	(36)%
Derivative gains (losses)	(587)	1,151	(833)	(1,738)	(151)%	1,984	238 %
Gains (losses) on trading securities	(570)	(1,077)	(737)	507	47 %	(340)	(46)%
Other non-interest income	7,813	1,865	2,288	5,948	319 %	(423)	(18)%
Administrative expense	(330)	(320)	(317)	(10)	(3)%	(3)	(1)%
Segment Earnings before income tax expense	9,943	5,700	5,486	4,243	74 %	214	4 %
Income tax expense	(3,428)	(1,873)	(1,715)	(1,555)	(83)%	(158)	(9)%
Segment Earnings, net of taxes	6,515	3,827	3,771	2,688	70 %	56	1 %
Total other comprehensive income (loss), net of tax	(30)	(452)	(356)	422	93 %	(96)	(27)%
Total comprehensive income (loss)	$6,485	$3,375	$3,415	$3,110	92 %	($40)	(1)%

The portion of total comprehensive income (loss) driven by interest rate-related and market spread-related fair value changes, after-tax, is presented in the table below. These amounts affect various line items in the table above, including derivative gains (losses), gains (losses) on trading securities, other non-interest income, income tax expense and total other comprehensive income (loss), net of tax.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Interest rate-related	($0.3)	$0.2	($0.5)	($0.5)	(250)%	$0.7	140%
Market spread-related	0.8	0.3	0.2	0.5	167 %	0.1	50 %

Key Drivers:

n 2017 vs. 2016

l The continued reduction in the balance of our mortgage-related investments portfolio resulted in a decrease in net interest income.

l Interest rate-related fair value changes during 2017. Losses increased, driven by lower levels of volatility during 2017, resulting in larger losses in our options portfolio, coupled with lower fair value gains in our pay-fixed interest rate swaps as long-term interest rates increased less. This was partially offset by reduced fair value losses in our receive-fixed interest rate swaps and the majority of our investments in securities.

l Increased spread-related fair value gains driven by market spread tightening during 2017 on our non-agency mortgage-related securities.

l The volume of PCs we repurchased during 2017 increased only slightly, but we recognized increased gains on the extinguishment of debt as long-term interest rates increased between the

time of issuance and repurchase, as compared to 2016 when long-term interest rates generally decreased between the time of issuance and repurchase.

- Proceeds of $4.5 billion received from the RBS settlement during 2017 related to certain of our non-agency mortgage-related securities. For more information on this settlement, see Note 14.

- 2016 vs. 2015

- The continued reduction in the balance of our mortgage-related investments portfolio resulted in a decrease in net interest income.
- Interest rate-related fair value changes during 2016. Long-term interest rates increased during the fourth quarter of 2016 but decreased during 2015. This resulted in gains in our pay-fixed interest rate swaps and losses in our receive-fixed interest-rate swaps, certain of our option contracts and the vast majority of our investments in securities.
- Increased spread-related fair value gains driven by market spread tightening during 2016 on our agency mortgage-related securities.
- Decreased sales of available-for-sale agency and non-agency mortgage-related securities in unrealized gain positions resulted in lower gains.

All Other
Comprehensive Income

The table below shows our comprehensive income (loss) for the All Other category.

	Year Ended December 31,			Year Over Year Change			
				2017 vs. 2016		2016 vs. 2015	
(Dollars in millions)	2017	2016	2015	$	%	$	%
Comprehensive income (loss) - All Other	($5,405)	$—	$28	($5,405)	N/A	($28)	(100)%

Key Drivers:

- 2017 vs. 2016 - Comprehensive loss in 2017 was driven by:
  - Higher income tax expense due to the revaluation of our net deferred tax asset driven by the Tax Cuts and Jobs Act, which reduced the statutory corporate income tax rate from 35% to 21%. For more information on the statutory tax rate change, see Note 12.

RISK MANAGEMENT

Overview

Risk is an inherent part of our business activities. We are exposed to four main categories of risk: credit risk, operational risk, market risk and liquidity risk. We discuss credit risk, operational risk and market risk in this section. See Liquidity and Capital Resources for a discussion of liquidity risk.

Credit risk is the risk associated with the inability or failure of a borrower, issuer or counterparty to meet its financial and/or contractual obligations.

Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, or systems or from external events.

Market risk is the economic risk associated with adverse changes in interest rates, volatility and spreads.

Liquidity risk is the risk associated with the inability to meet financial obligations as they come due or meet the needs of customers in a timely and cost-efficient manner.

For more discussion of these and other risks facing our business, see Risk Factors.

Enterprise Risk Framework and Governance Structure

We manage risk using a three-lines-of-defense risk management model and governance structure that includes enterprise-wide oversight by the Board and its committees, CERO, CCO and our corporate ERC. These roles and responsibilities continue to evolve.

The information and diagram below present the responsibilities associated with our three-lines-of-defense risk management model and our governance structure.

We have made considerable enhancements to our enterprise risk framework in recent years, including:

- Revising our integrated enterprise risk framework to enable us to place more focus on high risk business processes and activities;
- Utilizing our three-lines-of-defense risk management model both to strengthen risk ownership in our business units and to assign specific responsibilities and accountabilities for risk management;
- Implementing variable compensation programs that do not encourage excessive risk taking and balance risk and rewards; and
- Continuing to emphasize from the tone at the top the importance of a strong risk culture.

Our framework focuses on balancing ownership of risk by our business units with independent risk management and independent assurance of the design and effectiveness of our risk management activities. For more information on the role of the Board and its committees, see Directors, Corporate Governance, and Executive Officers - Corporate Governance - Board and Committee Information.

Capital Framework

During 2017, we and Fannie Mae worked with FHFA to develop an overall risk measurement framework for evaluating our risk management and business decisions during conservatorship, known as the Conservatorship Capital Framework (CCF). We use both CCF and our internal capital methodologies, which are aligned, to measure risk for making economically effective decisions. We are required to submit quarterly reports to FHFA related to CCF requirements. In addition, we are subject to the annual Dodd-Frank Act Stress Test as required by FHFA.

Credit Risk

Overview

We are exposed to both mortgage credit risk and counterparty credit risk.

Mortgage credit risk is the risk that a borrower will fail to make timely payments on a loan that we own or guarantee. We are exposed to three types of mortgage credit risk:

- Single-family mortgage credit risk, through our ownership or guarantee of loans in the single-family credit guarantee portfolio;
- Multifamily mortgage credit risk, through our ownership or guarantee of loans in the multifamily mortgage portfolio; and
- Mortgage-related securities credit risk, through our ownership of non-Freddie Mac mortgage-related securities in the mortgage-related investments portfolio.

Counterparty credit risk is the risk associated with the inability or failure of a counterparty to meet its contractual obligations.

In the sections below, we provide a general discussion of our enterprise risk framework and current risk environment for the three types of mortgage credit risk, as well as for counterparty credit risk.

Single-Family Mortgage Credit Risk

We manage our exposure to single-family mortgage credit risk, which is a type of consumer credit risk, using the following principal strategies:

- Maintaining policies and procedures for new business activity, including prudent underwriting standards;
- Offering private investors new and innovative ways to share in the credit risk of the single-family credit guarantee portfolio;
- Monitoring loan performance and characteristics of the single-family credit guarantee portfolio and individual sellers and servicers;
- Engaging in loss mitigation activities; and
- Managing foreclosure and REO activities.

Maintaining Policies and Procedures for New Business Activity, Including Prudent Underwriting Standards

We use a delegated underwriting process in connection with our acquisition of single-family loans whereby we set eligibility and underwriting standards and sellers represent and warrant to us that loans they sell to us meet these standards. Our eligibility and underwriting standards evaluate loans based on a number of characteristics.

Limits are established on the purchase of loans with certain higher risk characteristics. These limits are designed to balance our credit risk exposure with the facilitation of affordable housing in a responsible manner. Our purchase guidelines generally provide for a maximum original LTV ratio of 95%, a maximum LTV ratio of 80% for cash-out refinance loans and no maximum LTV ratio for fixed-rate HARP loans. In March 2015, we began to purchase certain loans with LTV ratios up to 97% under an initiative designed to serve a targeted segment of creditworthy borrowers. We fully discontinued purchases of Alt-A loans in 2009, interest-only loans in 2010 and option ARM loans in 2007.

The majority of our purchase volume is evaluated using our own proprietary underwriting software (Loan Product Advisor ("LPA")), the seller's software or Fannie Mae's comparable software. The performance of non-LPA loans is monitored to ensure compliance with our risk appetite.

We employ a quality control process to review loan underwriting documentation for compliance with our standards using both random and targeted samples. We also perform quality control reviews of many delinquent loans and review all loans that have resulted in credit losses before the representations and warranties are relieved. Sellers may appeal ineligible loan determinations prior to repurchase of the loan. Our reviews of 2016 originations are largely complete, while our reviews of 2017 originations are ongoing. The average aggregate ineligible loan rate across all sellers for loans funded during 2016, 2015 and 2014, excluding HARP and other relief refinance loans, was approximately 0.7%, 0.8% and 1.1%, respectively. The most common underwriting defect found in our review of loans funded during 2016 related to the delivery of insufficient income documentation.

We have made changes in recent periods to standardize our quality control process and facilitate more timely reviews. These changes are designed to identify breaches of representations and warranties early

in the life of the loan. We also implemented new tools, such as our proprietary Quality Control Advisor, to provide greater transparency into our customer quality control reviews.

In July 2016, we launched our Loan Advisor Suite, which is a set of integrated software applications designed to give lenders a way to originate and deliver high quality mortgage loans to us and to actively monitor representation and warranty relief earlier in the mortgage loan production process. In 2017, we enhanced our Loan Advisor Suite to offer limited relief of representations and warranties for certain loans that satisfy new automated controls related to appraisal quality, collateral valuation, borrower assets and borrower income. In general, limited representation and warranty relief is offered when information provided by lenders is validated against independent data sources. Further enhancements to the Loan Advisor Suite are expected in 2018. These evolving technologies are designed to establish the loan manufacturing quality required for greater purchase certainty.

If we discover that the representations or warranties related to a loan were breached (i.e., that contractual standards were not followed), we can exercise certain contractual remedies to mitigate our actual or potential credit losses. These contractual remedies include the ability to require the seller or servicer to repurchase the loan at its current UPB, reimburse us for losses realized with respect to the loan after consideration of any other recoveries, and/or indemnify us. At the direction of FHFA, we implemented a new remedies framework for the categorization of loan origination defects for loans with settlement dates on or after January 1, 2016. Among other items, the framework provides that "significant defects" will result in a repurchase request or a repurchase alternative, such as recourse or indemnification.

At the direction of FHFA, we made a number of changes to our selling and servicing representation and warranty framework for our mortgage loans. FHFA may require further changes to the framework in the future. Under the revised selling framework, we relieve sellers of repurchase obligations for breaches of certain selling representations and warranties for certain types of loans, including:

- Loans that have established an acceptable payment history for 36 months (12 months for relief refinance loans) of consecutive, on-time payments after purchase, subject to certain exclusions; and
- Loans that have satisfactorily completed a quality control review.

As part of the revised framework, we also made changes that provide additional clarity on life-of-mortgage loan exclusions from repurchase relief for breaches of certain selling representations and warranties. These changes are designed to provide sellers with a higher degree of certainty regarding their repurchase exposure and liability on loans sold to us.

In February 2016, at the direction of FHFA, we published guidelines for a new independent dispute resolution process for alleged breaches of selling or servicing representations and warranties on our loans. Under the new process, a neutral third party renders a decision on demands that remain unresolved after the existing appeal and escalation processes have been exhausted.

The credit quality of our single-family loan purchases remained strong during the past several years. The graphs below show the credit profile of the single-family loans we purchased or guaranteed in the last three years.

Weighted Average Original LTV Ratio

Weighted Average Credit Score

The table below contains additional information about the single-family loans we purchased or guaranteed in the last three years.

	Year Ended December 31,					
	2017		2016		2015	
(Dollars in millions)	Amount	% of Total	Amount	% of Total	Amount	% of Total
30-year or more amortizing fixed-rate	$275,677	80 %	$307,572	78 %	$262,209	75 %
20-year amortizing fixed-rate	12,338	4	17,011	4	16,470	5
15-year amortizing fixed-rate	45,597	13	61,223	16	58,958	17
Adjustable-rate	9,841	3	6,555	2	12,760	3
FHA/VA and other governmental	113	—	146	—	163	—
Total	$343,566	100 %	$392,507	100 %	$350,560	100 %
Percentage of purchases						
With credit enhancements		30 %		26 %		23 %
Detached/townhome property type		91 %		92 %		92 %
Primary residence		89 %		90 %		90 %
Loan purpose						
Purchase		58 %		45 %		44 %
Cash-out refinance		22 %		22 %		21 %
Other refinance		20 %		33 %		35 %

The table below contains additional detail on the relief refinance loans we purchased.

	Year Ended December 31,					
	2017			2016		
(UPB in millions)	UPB	Loan Count	Average Loan Size	UPB	Loan Count	Average Loan Size
Above 125% Original LTV	$141	936	$151,000	$271	1,799	$151,000
Above 100% to 125% Original LTV	589	3,197	184,000	1,107	6,220	178,000
Above 80% to 100% Original LTV	1,760	9,737	181,000	3,034	17,277	176,000
80% and below Original LTV	5,900	40,941	144,000	8,562	60,353	142,000
Total	$8,390	54,811	$153,000	$12,974	85,649	$151,000

Offering Private Investors New and Innovative Ways to Share in the Credit Risk of the Single-Family Credit Guarantee Portfolio

Our Charter requires coverage by specified credit enhancements or participation interests on single-family loans with LTV ratios above 80% at the time of purchase. In addition to obtaining credit enhancements required by our Charter, we also enter into various other types of transactions in which we transfer mortgage credit risk to third parties.
The table below contains a description of the credit enhancements we use to transfer a portion of the credit risk on our single-family loans.

Credit Enhancement	Description	When Coverage is Effective
Primary mortgage insurance	• Provides loan-level protection against loss up to a specified amount and the premium is typically paid by the borrower. Generally, an insured loan must be in default and the borrower's interest in the underlying property must have been extinguished, such as through a short sale or foreclosure sale, before a claim can be filed under a primary mortgage insurance policy. The mortgage insurer has a prescribed period of time within which to process a claim and make a determination as to its validity and amount. Most of our loans with LTV ratios above 80% are protected by primary mortgage insurance.	At the time we acquire the loan
STACR debt notes	• Unsecured debt obligations that we issue to third-party investors related to certain notional credit risk positions. We make payments of principal and interest on the issued STACR debt notes. The amount of principal that we are required to pay the STACR debt note investors is linked to the credit performance of certain loans (referred to as a reference pool) that we have previously guaranteed. As a result, we are not required to repay principal to the extent that the notional credit risk position is reduced as a result of a specified credit event.	Subsequent to our purchase or guarantee of loans
ACIS insurance policies	• Policies that provide credit protection on a portion of the non-issued notional credit risk positions we retain in a STACR debt note transaction. We also enter into ACIS transactions that provide credit protection for certain specified credit events on loans not included in a reference pool created for a STACR debt note transaction. In exchange for our payment of premiums, we receive compensation for certain losses under the insurance policy up to an aggregate limit when specified credit events occur.	At both the time we acquire the loan and subsequent to our purchase or guarantee of loans
Senior subordinate securitization structures	• Structures in which we issue guaranteed senior securities or PCs and unguaranteed subordinated securities backed by certain single-family loans that were previously purchased or participation interests in recently originated single-family loans. The unguaranteed subordinated securities absorb first losses on the related loans. In certain of these transactions, the loans are not serviced in accordance with our Guide and we do not control the servicing.	Subsequent to our purchase or guarantee of loans
Other	• Seller indemnification agreement - Requires the seller to absorb a portion of the losses on the related single-family loans in exchange for Freddie Mac's payment of a fee or a guarantee fee reduction. The indemnification amount may be fully or partially collateralized.	At the time we acquire the loan
	• Deep MI CRT - Provides additional coverage beyond primary mortgage insurance. Deep MI CRT is a credit enhancement we purchase from affiliates of mortgage insurance companies. Deep MI CRT covers a pool of loans and takes effect immediately upon sale of the mortgage loans to us over a pre-defined loan aggregation period. We require our counterparties to partially collateralize their exposure to reduce the risk that we will not be reimbursed for our claims under the policies, and also to adhere to other terms beyond what is contained in primary mortgage insurance.	At the time we acquire the loan
	• Lender recourse and indemnification agreements - Require a lender to repurchase a loan upon default or to reimburse us for realized credit losses. Lender recourse and lender indemnification agreements are entered into as an alternative to requiring primary mortgage insurance or in exchange for a lower guarantee fee. We have not used lender recourse or lender indemnification agreements on a broad basis in recent years.	At the time we acquire the loan

•	Pool insurance - Provides insurance on a group of loans up to a stated aggregate loss limit. We have not purchased pool insurance policies since 2008, and the majority of our pool insurance policies will expire in the next three years.	At the time we acquire the loan

See Our Business Segments - Single-Family Guarantee, Note 3 and Note 6 for additional information on these transactions.

The table below provides information on the total current and protected UPB and maximum coverage associated with credit enhanced loans in our single-family credit guarantee portfolio as of December 31, 2017 and 2016, respectively. The table includes all types of single-family credit enhancements.

(In millions)	As of December 31,			
	2017		2016	
	Total Current and Protected UPB[1]	Maximum Coverage[2]	Total Current and Protected UPB[1]	Maximum Coverage[2]
Primary mortgage insurance	$334,189	$85,429	$291,217	$74,345
STACR debt note[3]	604,356	17,788	427,978	14,507
ACIS transactions[4]	617,730	6,736	453,670	5,355
Senior subordinate securitization structures	12,283	1,913	3,988	605
Other[5]	15,975	6,479	12,827	7,373
Less: UPB with more than one type of credit enhancement	(775,751)	—	(559,400)	—
Single-family credit guarantee portfolio with credit enhancement	808,782	118,345	630,280	102,185
Single-family credit guarantee portfolio without credit enhancement	1,020,098	—	1,124,446	—
Total	$1,828,880	$118,345	$1,754,726	$102,185

(1) Except for the majority of our STACR debt notes and ACIS transactions, our credit enhancements generally provide protection for the first, or initial, credit losses associated with the related loans. For subordination, total current and protected UPB represents the UPB of the guaranteed securities. For STACR debt notes and ACIS transactions, total current and protected UPB represents the UPB of the assets included in the reference pool.

(2) Except for subordination, this represents the remaining amount of loss recovery that is available subject to the terms of counterparty agreements. For subordination, this represents the UPB of the securities that are subordinate to our guarantee and held by third parties, which could provide protection by absorbing first losses.

(3) Maximum coverage amounts presented represent the outstanding balance of STACR debt notes held by third parties.

(4) Maximum coverage amounts presented represent the remaining aggregate limit of insurance purchased from third parties in ACIS transactions.

(5) Includes seller indemnification, Deep MI CRT, lender recourse and indemnification, pool insurance, HFA indemnification and other credit enhancements.

We had coverage remaining of $118.3 billion and $102.2 billion on our single-family credit guarantee portfolio as of December 31, 2017 and 2016, respectively. Credit risk transfer transactions provided 22.4% and 19.9% of the coverage remaining at those dates.

The table below provides information on the non-credit-enhanced and credit-enhanced loans in our single-family credit guarantee portfolio. The credit enhanced categories are not mutually exclusive as a single loan may be covered by both primary mortgage insurance and other credit protection.

(Percentage of portfolio based on UPB)	As of December 31,					
	2017		2016		2015	
	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate
Non-credit-enhanced	56 %	1.16%	64 %	1.02%	70 %	1.30%
Credit-enhanced						
Primary mortgage insurance	18 %	1.43%	17 %	1.46%	15 %	2.06%
Other	37 %	0.53%	27 %	0.43%	20 %	0.58%
Total	N/A	1.08%	N/A	1.00%	N/A	1.32%

The table below provides information on estimated recoveries we could receive over the risk transfer coverage period from our most significant credit risk transfer transactions (i.e., STACR debt notes and ACIS insurance policies) under

various home price scenarios.

The timing of our recognition of the recoveries in our statements of comprehensive income will depend on the type of credit risk transfer transaction and whether we are reimbursed based on calculated losses or actual losses, which may result in timing differences between the recognition of recoveries and the related credit event. We recognize losses on the loans in the reference pool when losses are incurred. Recoveries from credit risk transfer transactions based on actual losses are generally recognized in the financial statements when the loss confirming event occurs (i.e. foreclosure, deed in lieu of foreclosure, short sale, etc.), which may be several years after the related losses are incurred. Credit risk transfer transactions based on calculated losses are measured at fair value through earnings, so the change in fair value may be recognized prior to the incurrence of the loss.

In the table below, we estimate the potential recoveries from our STACR debt note and ACIS transactions using a sensitivity analysis that utilizes our historical loss and prepayment experience related to loans originated during periods that experienced above average home price appreciation, moderate home price appreciation and severe home price depreciation. We match these loans to similar groups within the reference pools (related to our STACR debt note and ACIS transactions) using two of the more significant observed credit sensitive mortgage loan attributes, LTV ratios and origination FICO scores. Our recoveries under these scenarios were estimated based on loan losses, net of mortgage insurance claim amounts.

These are only estimated projections and are designed to illustrate the potential for significant differences in losses and recoveries depending on the economic environment and other factors. Our actual losses and recoveries under these scenarios could differ materially from these estimates. For example, significant improvements to underwriting standards, as well as origination practices, since the financial crisis may result in lower loan losses and loss coverage ratio than the projections in the table below. In addition, these estimates do not include interest expense and transaction costs we incur to issue our STACR debt notes and premiums we pay on ACIS transactions.

(In millions)	As of December 31, 2017
UPB of loans covered by STACR debt notes and ACIS insurance policies	$607,019

	Performance Under Home Price Scenarios at December 31, 2017					
	Above Average Home Price Appreciation (47%)[1]		Moderate Home Price Appreciation (7%)[1]		Severe Home Price Depreciation (-24%)[1]	
(Dollars in millions)	Amount	bps	Amount	bps	Amount	bps
Estimated credit losses	$157	6	$1,007	40	$16,741	276
Estimated recoveries from STACR debt notes and ACIS insurance policies	$56	1	$654	11	$10,438	172
Loss coverage ratio	15 %	N/A	27 %	N/A	62 %	N/A

(1) Home price change is over a four-year period.

Monitoring Loan Performance and Characteristics of the Single-Family Credit Guarantee Portfolio and Individual Sellers and Servicers

We review loan performance, including delinquency statistics and related loan characteristics in conjunction with housing market and economic conditions, to determine if our pricing and eligibility standards reflect the risk associated with the loans we purchase and guarantee. We review the payment

performance of our loans to facilitate early identification of potential problem loans, which could inform our loss mitigation strategies. We also review performance metrics for additional loan characteristics that may expose us to concentrations of credit risk, including:

- Higher risk loan attributes and attribute combinations;
- Higher risk loan product types; and
- Geographic concentrations.

We actively monitor seller and servicer performance, including compliance with our standards, and periodically review their operational processes. We also periodically change seller/servicer guidelines based on the results of our mortgage portfolio monitoring, if warranted.

Single-Family Credit Guarantee Portfolio

Our single-family serious delinquency rate increased in 2017 compared to 2016 due to impacts of the hurricane events in 2017. As a result, we expect an increase in our loan workout activities as well as our expected credit losses. Outside of the areas affected by the hurricanes, our single-family serious delinquency rate decreased to 0.83% in 2017 from 0.97% in 2016 due to our continued loss mitigation efforts and sales of certain seriously delinquent loans, as well as home price appreciation and a low unemployment rate. This improvement was also driven by the continued shift in the single-family credit guarantee portfolio mix, as the Legacy and relief refinance loan portfolio runs off and we add high credit quality loans to our Core single-family loan portfolio.

Our loss mitigation activities may create fluctuations in our delinquency statistics. For example, loans in modification trial periods, loans subject to forbearance agreements and loans in repayment plans continue to be reported as seriously delinquent. There may also be temporary lags in the reporting of payment status and modification completion due to differing practices of our servicers that can affect our delinquency statistics.

The charts below show the credit losses and serious delinquency rates for each of our single-family loan portfolios. Our Core single-family loan portfolio continues to perform well and account for a small percentage of our credit losses, as shown below. Our Legacy and relief refinance single-family loan portfolio continues to decline as a percentage of our overall portfolio, but continues to account for the majority of our credit losses.

Portfolio Composition and Credit Losses

Serious Delinquency Rates as of December 31,

The chart below shows the delinquency rates for mortgage loans in our single-family credit guarantee portfolio that are one month and two months past due.

Total Delinquency Rates for Loans One Month and Two Months Past Due

The tables below provide credit quality information about our single-family loan portfolios.

	As of December 31, 2017						
(Dollars in billions)	UPB	Average Credit Score	Original LTV Ratio	Current LTV Ratio	Current LTV Ratio >100%	Foreclosure Sale and Short Sale Rate[1]	Alt-A %
Core single-family loan portfolio	$1,424	751	73 %	59 %	— %	0.16 %	— %
Legacy and relief refinance single-family loan portfolio	405	707	77 %	47 %	3 %	3.98 %	7 %
Total	$1,829	743	75 %	59 %	1 %	N/A	1 %

	As of December 31, 2016						
(Dollars in billions)	UPB	Average Credit Score	Original LTV Ratio	Current LTV Ratio	Current LTV Ratio >100%	Foreclosure Sale and Short Sale Rate[1]	Alt-A %
Core single-family loan portfolio	$1,275	752	72 %	60 %	— %	0.15 %	— %
Legacy and relief refinance single-family loan portfolio	480	708	77 %	51 %	5 %	3.91 %	7 %
Total	$1,755	743	75 %	61 %	2 %	N/A	2 %

(1) The foreclosure sale and short sale rate presented for the Legacy and relief refinance single-family loan portfolio represents the rate associated with loans originated in 2000 through 2008, as well as other relief refinance loans, including HARP loans.

The table below contains a description of some of the loan characteristics we monitor in our single-family credit guarantee portfolio.

Characteristic	Description	Impact on Credit Quality
LTV Ratio	Ratio of the UPB of the loan to the value of the underlying property collateralizing the loan. Original LTV ratio is measured at loan origination, while current LTV (CLTV) ratio is defined as the ratio of the current loan UPB to the estimated current property value	• Measures ability of the underlying property to cover our exposure on the loan • Higher LTV ratios indicate higher risk, as proceeds from sale of the property may not cover our exposure on the loan • Lower LTV ratios indicate borrowers are more likely to repay
Credit Score	Statistically-derived number used by lenders to assess a borrower's likelihood to repay debt. We use FICO scores, which are currently the most commonly used credit scores for mortgages	• Borrowers with higher credit scores are generally more likely to repay or have the ability to refinance their loans than those with lower scores • Credit scores presented in this Form 10-K are at the time of origination and may not be indicative of the borrowers' current creditworthiness
Loan Purpose	Indicates how the borrower intends to use the proceeds from a loan (i.e., purchase, cash-out refinance or other refinance)	• Cash-out refinancings, which increase the LTV ratios, generally have had a higher risk of default than loans originated in purchase or other refinance transactions
Property Type	Indicates whether the property is a detached single-family house, townhouse, condominium or co-op	• Detached single-family houses and townhouses are the predominant type of single-family property • Condominiums historically have experienced greater volatility in home prices than detached single-family houses, which may expose us to more risk
Occupancy Type	Indicates whether the borrower intends to use the property as a primary residence, second home or investment property	• Loans on primary residence properties tend to have lower credit risk than loans on second homes or investment properties
Product Type	Indicates the type of loan based on key loan terms, such as the contractual maturity, type of interest rate and payment characteristics of the loan	• Loan products that contain terms which result in scheduled changes in monthly payments may result in higher risk • Shorter loan terms result in faster repayment of principal and may indicate lower risk
Second Liens	Indicates whether the underlying property is covered by more than one loan at the time of origination	• Second liens can increase the risk of default • Borrowers are free to obtain second-lien financing after origination, and we are not entitled to receive notification when a borrower does so

The table below contains details on characteristics of the loans in our single-family credit guarantee portfolio.

	As of December 31,		
(Percentage of portfolio based on UPB)	2017	2016	2015
Original LTV Ratio Range			
60% and below	20 %	20 %	20 %
Above 60% to 80%	52 %	53 %	53 %
Above 80% to 100%	24 %	23 %	22 %
Above 100%	4 %	4 %	5 %
Portfolio weighted average original LTV ratio	75 %	75 %	75 %
Current LTV Ratio Range			
60% and below	49 %	45 %	43 %
Above 60% to 80%	37 %	38 %	37 %
Above 80% to 100%	13 %	15 %	16 %
Above 100%	1 %	2 %	4 %
Portfolio weighted average current LTV ratio	59 %	61 %	63 %
Credit Score			
740 and above	60 %	60 %	59 %
700 to 739	21 %	21 %	21 %
660 to 699	12 %	12 %	13 %
620 to 659	5 %	5 %	5 %
Less than 620	2 %	2 %	2 %
Portfolio weighted average credit score	743	743	741
Loan Purpose			
Purchase	39 %	35 %	32 %
Cash-out refinance	21 %	21 %	21 %
Other refinance	40 %	44 %	47 %

In addition, at December 31, 2017, 2016 and 2015:

- More than 90% of our loans were secured by detached homes or townhomes;
- Approximately 90% of our loans were secured by properties used as the borrower's primary residence at origination; and
- More than 90% of our loans were fixed-rate.

At December 31, 2017, approximately 9% of our loans had second-lien financing by the originator or other third party at origination, and these loans comprised approximately 15% of our seriously delinquent loan population. It is likely that additional borrowers have post-origination second-lien financing.

Higher Risk Loan Attributes and Attribute Combinations

Certain of the loan attributes shown above may indicate a higher risk of default. For example, loans with original LTV ratios over 90% and/or credit scores below 620 at origination may be higher risk. The tables below provide information on loans in our portfolio with these characteristics. The tables include a presentation of each higher risk category in isolation. A single loan may fall within more than one category.

(Dollars in billions)	As of December 31, 2017			
	UPB	CLTV	% Modified	SDQ Rate
Original LTV ratio greater than 90%, HARP loans	$98.9	76 %	2.3 %	1.37 %
Original LTV ratio greater than 90%, all other loans	$205.5	80 %	5.6 %	1.88 %
Loans with credit scores below 620 at origination	$35.2	65 %	21.4 %	6.34 %

(Dollars in billions)	As of December 31, 2016			
	UPB	CLTV	% Modified	SDQ Rate
Original LTV ratio greater than 90%, HARP loans	$115.1	83 %	1.8 %	1.07 %
Original LTV ratio greater than 90%, all other loans	$169.4	82 %	7.2 %	1.92 %
Loans with credit scores below 620 at origination	$37.5	69 %	21.7 %	5.73 %

In addition, certain combinations of loan attributes can indicate an even higher degree of credit risk, such as loans with both higher LTV ratios and lower credit scores. The following tables show the combination of credit score and CLTV ratio attributes of loans in our single-family credit guarantee portfolio.

	As of December 31, 2017								
	CLTV ≤ 80		CLTV > 80 to 100		CLTV > 100		All Loans		
(Credit score)	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Modified[1]
Core single-family loan portfolio:									
< 620	0.3 %	2.89 %	— %	NM	— %	NM	0.3 %	3.18 %	3.3 %
620 to 659	1.8	1.63 %	0.3	1.92 %	—	NM	2.1	1.67 %	1.4 %
≥ 660	65.9	0.27 %	9.5	0.46 %	—	NM	75.4	0.29 %	0.2 %
Not available	0.1	2.48 %	—	NM	—	NM	0.1	4.47 %	3.6 %
Total	68.1 %	0.32 %	9.8 %	0.55 %	— %	NM	77.9 %	0.35 %	0.3 %
Legacy and relief refinance single-family loan portfolio:									
< 620	1.2 %	5.61 %	0.3 %	10.17 %	0.1 %	16.24 %	1.6 %	6.71 %	23.5 %
620 to 659	2.0	4.17 %	0.4	8.05 %	0.2	13.75 %	2.6	5.04 %	20.3 %
≥ 660	14.9	1.47 %	2.2	4.11 %	0.7	6.67 %	17.8	1.81 %	7.3 %
Not available	0.1	5.60 %	—	NM	—	NM	0.1	6.07 %	17.8 %
Total	18.2 %	2.11 %	2.9 %	5.39 %	1.0 %	9.14 %	22.1 %	2.59 %	10.1 %

	As of December 31, 2016								
	CLTV ≤ 80		CLTV > 80 to 100		CLTV > 100		All Loans		
(Credit score)	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Portfolio	SDQ Rate[1]	% Modified[1]
Core single-family loan portfolio:									
< 620	0.2 %	2.18 %	— %	NM	— %	NM	0.2 %	2.45 %	3.0 %
620 to 659	1.6	1.02 %	0.3	1.30 %	—	NM	1.9	1.07 %	1.3 %
≥ 660	60.9	0.15 %	9.7	0.22 %	0.1	1.88 %	70.7	0.16 %	0.2 %
Not available	—	NM	—	NM	—	NM	—	NM	NM
Total	62.7 %	0.18 %	10.0 %	0.27 %	0.1 %	3.29 %	72.8 %	0.20 %	0.2 %
Legacy and relief refinance single-family loan portfolio:									
< 620	1.3 %	4.76 %	0.4 %	8.53 %	0.2 %	13.93 %	1.9 %	6.03 %	23.4 %
620 to 659	2.1	3.48 %	0.6	6.61 %	0.4	11.41 %	3.1	4.51 %	20.0 %
≥ 660	17.1	1.18 %	3.6	3.24 %	1.4	5.68 %	22.1	1.60 %	7.2 %
Not available	0.1	4.87 %	—	NM	—	NM	0.1	5.54 %	15.7 %
Total	20.6 %	1.70 %	4.6 %	4.25 %	2.0 %	7.57 %	27.2 %	2.28 %	9.9 %

(1) NM - not meaningful due to the percentage of the portfolio rounding to zero.

Higher Risk Loan Product Types

There are several types of loan products that contain terms which result in scheduled changes in the borrower's monthly payments after specified initial periods, such as interest-only and option ARM loans. These products may result in higher credit risk because the payment changes may increase the borrower's monthly payment, resulting in a higher risk of default. The majority of these loans are in our Legacy and relief refinance single-family loan portfolio. Only a small percentage of our Core single-family loan portfolio consists of ARM loans.

The balance of our interest-only and option ARM loans has continued to decline in recent years as many of these borrowers have repaid or refinanced their loans, received loan modifications or completed foreclosure alternatives or foreclosure sales.

While we have not categorized option ARM loans as either subprime or Alt-A for presentation in this Form 10-K and elsewhere in our reporting, they could exhibit similar credit performance to collateral sometimes referred to as subprime or Alt-A by market participants. For reporting purposes, loans within the option ARM category continue to be presented in that category following a modification of the loan, even though the modified loan no longer provides for optional payment provisions.

The tables below provide credit characteristic information on higher risk loan product types.

	As of December 31, 2017			
(Dollars in billions)	UPB	CLTV	% Modified	SDQ Rate
Amortizing ARM and option ARM[1]	$56.0	52 %	1.7 %	1.13%
Interest-only	$13.0	68 %	0.1 %	4.97%
Step-rate modified	$22.2	70 %	100 %	8.03%

	As of December 31, 2016			
(Dollars in billions)	UPB	CLTV	% Modified	SDQ Rate
Amortizing ARM and option ARM[1]	$60.5	53 %	1.7 %	1.20%
Interest-only	$16.6	73 %	0.1 %	4.34%
Step-rate modified	$32.0	78 %	100 %	6.37%

(1) Includes $3.6 billion and $4.1 billion in UPB of option ARM loans as of December 31, 2017 and 2016, respectively. As of December 31, 2017 and 2016, the option ARM loans had: (a) current LTV ratios of 58% and 64%, (b) loan modification percentages of 15.6% and 14.6%; and (c) serious delinquency rates of 4.58% and 5.24%, respectively.

The table below shows the timing of scheduled payment changes for certain types of loans within our single-family credit guarantee portfolio. The amounts in the table below are aggregated by product type and categorized by the year in which the loan will experience a payment change. The timing of the actual payment change may differ from that presented in the table due to a number of factors, including if the borrower refinances the loan. Loans where the year of first payment change is 2017 or prior have already had one or more payment changes as of December 31, 2017; loans where the year of first payment change is 2018 or later have not had a payment change as of December 31, 2017 and will not experience a payment change until a future period. Step-rate modified loans are shown in each year that the borrower will experience a scheduled interest-rate increase; therefore, a single loan may be included in multiple periods. However, the total of step-rate loans in the table reflects the ending UPB of such loans as of December 31, 2017.

	As of December 31, 2017							
(In millions)	2017 and Prior	2018	2019	2020	2021	2022	Thereafter	Total[1]
ARM/amortizing	$12,409	$2,461	$5,027	$6,314	$5,881	$6,744	$13,244	$52,080
ARM/interest-only	8,456	1,185	70	149	—	—	—	9,860
Fixed/interest-only	813	184	3	2	12	45	2	1,061
Step-rate modified	16,657	10,254	4,071	3,171	2,382	537	175	22,169
Total	$38,335	$14,084	$9,171	$9,636	$8,275	$7,326	$13,421	$85,170

(1) Excludes loans underlying certain other securitization products since the payment change information is not available to us for these loans.

We believe that the performance of these types of loans has been affected by prior adverse macroeconomic conditions, such as unemployment rates and home price declines in many geographic areas in addition to the increase in the borrower’s monthly payment. However, we continue to monitor the performance of these loans as many have experienced a payment change or are scheduled to have a payment change in 2018 or thereafter, which is likely to subject the borrowers to higher monthly payments. Since a substantial portion of these loans were originated in 2005 through 2008 and are located in geographic areas that were most affected by declines in home prices that began in 2006, we believe that the serious delinquency rate for these types of loans will remain high in 2018.

Other Higher Risk Loans - Alt-A and Subprime Loans

While we have referred to certain loans as subprime or Alt-A for purposes of the discussion below and elsewhere in this Form 10-K, there is no universally accepted definition of subprime or Alt-A, and the classification of such loans may differ from company to company. We do not rely on these loan classifications to evaluate the credit risk exposure relating to such loans in our single-family credit guarantee portfolio.

Participants in the mortgage market have characterized single-family loans based upon their overall credit quality at the time of origination, including as prime or subprime. While we have not historically characterized the loans in our single-family credit guarantee portfolio as either prime or subprime, we monitor the amount of loans we have guaranteed with characteristics that indicate a higher degree of credit risk. In addition, we estimate that approximately $1.1 billion and $1.3 billion of security collateral underlying our other securitization products at December 31, 2017 and 2016, respectively, were identified as subprime based on information provided to us when we entered into these transactions.

Mortgage market participants have classified single-family loans as Alt-A if these loans have credit characteristics that range between their prime and subprime categories, if they are underwritten with lower or alternative income or asset documentation requirements compared to a full documentation loan, or both. Although we have discontinued new purchases of loans with lower documentation standards, we continue to purchase certain amounts of such loans in cases where the loan was either purchased pursuant to a previously issued guarantee, part of our relief refinance initiative or part of another refinance loan initiative and the pre-existing loan was originated under less than full documentation standards. In the event we purchase a refinance loan and the original loan had been previously identified as Alt-A, such refinance loan may no longer be categorized or reported as an Alt-A loan in this Form 10-K and our other financial reports because the new refinance loan replacing the original loan would not be identified by the seller or servicer as an Alt-A loan. As a result, our reported Alt-A balances may be lower than would otherwise be the case had such refinancing not occurred. From the time the relief refinance initiative began in 2009 to December 31, 2017, we have purchased approximately $35.9 billion of relief refinance loans that were previously categorized as Alt-A loans in our portfolio, including $1.5 billion in 2017.

The table below contains information on Alt-A loans in our single-family credit guarantee portfolio.

	As of December 31, 2017				As of December 31, 2016			
(Dollars in billions)	UPB	CLTV	% Modified	SDQ Rate	UPB	CLTV	% Modified	SDQ Rate
Alt-A	$27.1	67 %	24.1 %	5.62%	$32.6	72 %	25.9 %	5.21%

The UPB of Alt-A loans in our single-family credit guarantee portfolio declined during 2017 primarily due to borrowers refinancing into other mortgage products, foreclosure sales and other liquidation events. Significant portions of the Alt-A loans in our portfolio are concentrated in Arizona, California, Florida and Nevada.

Geographic Concentrations

We purchase mortgage loans from across the U.S. and maintain a geographically diverse portfolio. However, local economic conditions can affect borrowers' ability to repay and the value of the underlying collateral, leading to concentrations of credit risk in certain geographic areas.

The following table presents certain geographic concentrations in our single-family credit guarantee portfolio. The states presented below had the largest number of seriously delinquent loans as of December 31, 2017. See Note 14 for additional information on the concentration of credit risk in our single-family credit guarantee portfolio.

(Dollars in millions)	As of December 31, 2017			Full Year	As of December 31, 2016			Full Year	As of December 31, 2015			Full Year
	SDQ Loan Count	% of SDQ Loans	SDQ Rate	2017 Credit Losses	SDQ Loan Count	% of SDQ Loans	SDQ Rate	2016 Credit Losses	SDQ Loan Count	% of SDQ Loans	SDQ Rate	2015 Credit Losses
Florida	22,253	19 %	3.33%	$614	9,355	9 %	1.42%	$157	14,070	10 %	2.16%	$850
Texas	8,908	8	1.36%	44	4,357	4	0.70%	15	4,888	3	0.80%	25
New York	8,117	7	1.74%	415	9,574	9	2.05%	163	13,981	10	2.94%	557
Illinois	6,228	5	1.13%	445	7,291	7	1.34%	170	8,841	6	1.62%	381
New Jersey	5,539	5	1.78%	432	6,913	7	2.26%	204	11,978	9	3.90%	689
All Others	64,644	56	0.79%	2,865	68,444	64	0.85%	1,019	85,963	62	1.06%	2,186
Total	115,689	100%	1.08%	$4,815	105,934	100%	1.00%	$1,728	139,721	100%	1.32%	$4,688

The following table presents our single-family charge-offs and recoveries in each geographic region. See Single-Family Credit Guarantee Portfolio in Note 14 for a description of these regions.

(In millions)	Year Ended December 31, 2017			2016			2015		
	Charge-offs, gross (1)	Recoveries	Charge-offs, net	Charge-offs, gross (1)	Recoveries	Charge-offs, net	Charge-offs, gross (1)	Recoveries	Charge-offs, net
Northeast	$1,690	($155)	$1,535	$752	($188)	$564	$2,056	($207)	$1,849
West	1,382	(62)	1,320	247	(58)	189	688	(105)	583
Southeast	1,001	(95)	906	401	(121)	280	1,270	(204)	1,066
North Central	774	(81)	693	425	(94)	331	854	(149)	705
Southwest	204	(32)	172	113	(36)	77	203	(52)	151
Total	$5,051	($425)	$4,626	$1,938	($497)	$1,441	$5,071	($717)	$4,354

(1) 2016 and 2015 do not include lower-of-cost-or-fair-value adjustments and other expenses related to property taxes and insurance recognized when we transfer loans from held-for-investment to held-for-sale, which totaled $1.2 billion and $3.4 billion, respectively. 2017 includes charge-offs of $3.8 billion related to the transfer of loans from held-for-investment to held-for-sale.

The tables below present the concentration of loans in each geographic region by CLTV ratio.

	As of December 31, 2017							
	CLTV <= 80%		CLTV > 80% to 100%		CLTV > 100%		All Loans	
	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate
North Central	13%	0.65%	3%	1.29%	—%	6.77%	16%	0.81%
Northeast	21	0.96%	4	2.13%	—	11.17%	25	1.24%
Southeast	14	1.67%	2	3.34%	—	10.58%	16	1.95%
Southwest	11	0.94%	2	1.23%	—	6.73%	13	0.98%
West	27	0.40%	2	1.14%	1	5.36%	30	0.47%
Total	86%	0.89%	13%	1.87%	1%	8.95%	100%	1.08%

	As of December 31, 2016							
	CLTV <= 80%		CLTV > 80% to 100%		CLTV > 100%		All Loans	
	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate	% of Portfolio	SDQ Rate
North Central	13%	0.67%	3%	1.53%	—%	6.36%	16%	0.93%
Northeast	20	1.04%	4	2.35%	1	10.92%	25	1.45%
Southeast	12	0.92%	3	1.95%	1	6.35%	16	1.19%
Southwest	11	0.71%	2	1.13%	—	6.75%	13	0.78%
West	27	0.43%	3	1.38%	—	5.00%	30	0.57%
Total	83%	0.74%	15%	1.75%	2%	7.43%	100%	1.00%

Credit Losses and Recoveries

On January 1, 2017, we elected a new accounting policy for loan reclassifications from held-for-investment to held-for-sale that increased the amount of charge-offs recognized during 2017. Under the new policy, when we reclassify (transfer) a loan from held-for-investment to held-for-sale, we charge off the entire difference between the loan's recorded investment and its fair value if the loan has a history of credit-related issues. Expenses related to property taxes and insurance are included as part of the charge-off. See Note 4 for further information about this change.

We expect the level of charge-offs in 2018 to be lower than in 2017 as we continue our loss mitigation activities and our efforts to sell certain seriously delinquent single-family loans.

The table below contains certain credit performance metrics of our single-family credit guarantee portfolio.

	Year Ended December 31,		
(Dollars in millions)	2017	2016	2015
Charge-offs, gross[(1)(2)]	$5,051	$1,938	$5,071
Recoveries	(425)	(497)	(717)
Charge-offs, net	4,626	1,441	4,354
REO operations expense	189	287	334
Total credit losses	$4,815	$1,728	$4,688
Total credit losses[(1)(2)] (in bps)	27.0	9.9	27.6

(1)

For 2015, includes $1.9 billion due to the adoption of FHFA Advisory Bulletin 2012-02 ("AB 2012-02") Framework for Adversely Classifying Loans, Other Real Estate Owned, and Other Assets and Listing Assets for Special Mention. See Note 1 for additional information.

(2) 2016 and 2015 do not include lower-of-cost-or-fair value adjustments and other expenses related to property taxes and insurance recognized when we transfer loans from held-for-investment to held-for-sale, which totaled $1.2 billion and $3.4 billion, respectively. 2017 includes charge-offs of $3.8 billion related to the transfer of loans from held-for-investment to held-for-sale.

Credit loss recoveries during 2017, 2016 and 2015 included $5 million, $14 million and $17 million, respectively, related to settlement agreements with certain sellers that released specified loans from certain repurchase obligations in exchange for one-time cash payments. We recognized recoveries from primary mortgage insurance (excluding recoveries that represent reimbursements for our expenses, such as REO operations expenses) of $0.3 billion, $0.3 billion and $0.5 billion that reduced our charge-offs of single-family loans during 2017, 2016 and 2015, respectively. We also recognized recoveries from primary mortgage insurance of $50 million, $47 million and $76 million during 2017, 2016 and 2015, respectively, as part of REO operations (expense) income.

Our credit losses and seriously delinquent loan population are concentrated in the Legacy and relief refinance single-family loan portfolio. In addition, our credit losses and seriously delinquent loan population are also concentrated within loans having certain characteristics, as shown in the table below. These categories are not mutually exclusive; for example, an Alt-A loan can be associated with a property located in a judicial foreclosure state and/or have a CLTV ratio of greater than 100%. Additional detail on loans in judicial foreclosure states is presented in the Managing Foreclosure and REO Activities section below.

	2017			2016		
	As of December 31		Year Ended December 31	As of December 31		Year Ended December 31
	% of Portfolio	SDQ Rate	% of Credit Losses	% of Portfolio	SDQ Rate	% of Credit Losses
CLTV > 100%	1 %	8.95 %	28 %	2 %	7.43 %	34 %
Alt-A loans	1 %	5.62 %	22 %	2 %	5.21 %	15 %
Judicial foreclosure states	38 %	1.56 %	53 %	38 %	1.36 %	62 %

Loan Loss Reserves

Our loan loss reserves continued to decline in 2017, primarily driven by an increase in charge-offs due to the accounting policy change effective January 1, 2017 related to the reclassification of loans from held-for-investment to held-for-sale. See Note 4 for more information on this accounting policy change.

The table below summarizes our single-family loan loss reserves activity.

	Year Ended December 31,				
(Dollars in millions)	2017	2016	2015	2014	2013
Beginning balance	$13,463	$15,348	$21,793	$24,578	$30,508
Provision (benefit) for credit losses	(97)	(781)	(2,639)	113	(2,247)
Charge-offs, gross[(1)]	(5,051)	(1,938)	(5,071)	(4,892)	(8,995)
Recoveries	425	497	717	1,258	4,313
Transfers, net	—	—	—	—	—
Other[(2)]	239	337	548	736	999
Ending balance	$8,979	$13,463	$15,348	$21,793	$24,578
As a percentage of our single-family credit guarantee portfolio	0.49 %	0.77 %	0.90 %	1.31 %	1.49 %

(1) 2016, 2015, 2014 and 2013 do not include lower-of-cost-or-fair value adjustments and other expenses related to property taxes and insurance recognized when we transfer loans from held-for-investment to held-for-sale, which totaled $1.2 billion, $3.4 billion, $0.3 billion and $0.0 billion, respectively. 2017 includes charge-offs of $3.8 billion related to the transfer of loans from held-for-investment to held-for-sale.

(2) Primarily includes capitalization of past due interest on modified loans.

TDRs and Individually Impaired Loans

Single-family loans that have been individually evaluated for impairment, such as modified loans, generally have a higher associated loan loss reserve than loans that have been collectively evaluated for impairment. Due to the large number of loan modifications completed in recent years, a significant portion of our loan loss reserves is attributable to individually impaired single-family loans. As of December 31, 2017, 48% of the loan loss reserves for single-family loans related to interest rate concessions provided to borrowers as part of loan modifications. Most of our modified single-family loans, including TDRs, were current and performing at December 31, 2017. We expect our loan loss reserve associated with existing single-family TDRs to decline over time as we continue to sell reperforming loans. In addition, these loan loss reserves will decline as borrowers continue to make monthly payments under the modified terms and interest rate concessions are amortized into earnings.

The table below summarizes the carrying value for individually impaired single-family loans on our consolidated balance sheets for which we have recorded a specific reserve.

(Dollars in millions)	2017 Loan Count	2017 Amount	2016 Loan Count	2016 Amount
TDRs, at January 1	485,709	$78,869	512,253	$85,960
New additions	41,343	5,714	43,153	5,956
Repayments and reclassifications to held-for-sale	(151,941)	(28,737)	(58,153)	(11,405)
Foreclosure sales and foreclosure alternatives	(10,407)	(1,431)	(11,544)	(1,642)
TDRs, at December 31,	364,704	54,415	485,709	78,869
Loans impaired upon purchase	5,040	340	7,977	542
Total impaired loans with specific reserve	369,744	54,755	493,686	79,411
Allowance for loan losses		(6,630)		(11,980)
Net investment, at December 31,		$48,125		$67,431

The tables below present information about the UPB of single-family TDRs and non-accrual loans on our consolidated balance sheets.

	As of December 31,				
(In millions)	2017	2016	2015	2014	2013
TDRs on accrual status	$51,644	$77,122	$82,026	$82,373	$78,033
Non-accrual loans	17,748	16,164	22,460	32,745	42,829
Total TDRs and non-accrual loans	$69,392	$93,286	$104,486	$115,118	$120,862
Loan loss reserves associated with:					
TDRs on accrual status	$5,257	$10,295	$12,105	$13,728	$14,239
Non-accrual loans	1,883	2,290	2,677	6,935	8,805
Total	$7,140	$12,585	$14,782	$20,663	$23,044

	Year Ended December 31,				
(In millions)	2017	2016	2015	2014	2013
Foregone interest income on TDRs and non-accrual loans[1]	$1,604	$2,109	$2,690	$3,235	$3,552

(1) Represents the amount of interest income that we would have recognized for loans outstanding at the end of each period, had the loans performed according to their original contractual terms.

Engaging in Loss Mitigation Activities

Servicers perform loss mitigation activities as well as foreclosures on loans that they service for us. Our loss mitigation strategy emphasizes early intervention by servicers in delinquent loans and offers alternatives to foreclosure by providing servicers with default management programs designed to manage non-performing loans more effectively and to assist borrowers in maintaining home ownership or to facilitate foreclosure alternatives.
We offer a variety of borrower assistance programs, including refinance programs for certain eligible loans and loan workout activities for struggling borrowers. Our loan workouts include both home retention options and foreclosure alternatives. We also engage in transfers of servicing for and sales of certain seriously delinquent loans.

Relief Refinance Program

As part of our loss mitigation activities, servicers contact borrowers that are eligible for the relief refinance initiative. In recent years, our relief refinance program has been one of our more significant borrower assistance programs. Our relief refinance initiative allows eligible homeowners whose loans we already own or guarantee to refinance with more favorable terms (such as reduction in payment, reduction in interest rate, extension of amortization term, or movement to a more stable loan product) and without the need to obtain additional mortgage insurance. Our relief refinance program includes HARP, the portion of our relief refinance initiative for loans with LTV ratios above 80%. The relief refinance program is being replaced with the high LTV relief refinance (Enhanced Relief Refinance[SM]) program, which will be available in January 2019 for loans originated on or after October 1, 2017. This program provides liquidity for borrowers who are current on their mortgages but are unable to refinance because their LTV ratios exceed our standard refinance limits. In addition, the HARP program has been extended for applications through December 31, 2018 to ensure that borrowers who have a high LTV ratio and are eligible for HARP will continue to have a refinance option.
The following table includes information about the performance of our relief refinance mortgage portfolio.

	As of December 31,					
	2017			2016		
(Dollars in millions)	UPB	Loan Count	SDQ Rate	UPB	Loan Count	SDQ Rate
Above 125% Original LTV	$21,814	131,045	1.76%	$25,027	144,719	1.24%
Above 100% to 125% Original LTV	43,177	256,189	1.34%	50,618	288,697	1.10%
Above 80% to 100% Original LTV	71,559	455,451	1.05%	82,987	506,932	0.84%
80% and below Original LTV	95,700	835,381	0.58%	106,350	892,471	0.38%
Total	$232,250	1,678,066	0.92%	$264,982	1,832,819	0.69%

Loan Workout Activities

When refinancing is not practicable, we require our servicers first to evaluate the loan for a forbearance agreement, repayment plan or loan modification, because our level of recovery on a loan that reperforms is often much higher than for a loan that proceeds to a foreclosure alternative or foreclosure. We offer the following types of home retention options:

- Forbearance agreements - Arrangements that require reduced or no payments during a defined period, generally less than one year, to allow borrowers to return to compliance with the original mortgage terms or to implement another loan workout. For agreements completed in 2017, the average time period for reduced or suspended payments was between three and four months.
- Repayment plans - Contractual plans designed to repay past due amounts to allow borrowers to return to compliance with the original mortgage terms. For plans completed in 2017, the average time period to repay past due amounts was between three and four months. Servicers are paid incentive fees for repayment plans that are paid in full and loans brought to current status.
- Loan modifications - Contractual plans that may involve changing the terms of the loan, adding outstanding indebtedness, such as delinquent interest, to the UPB of the loan, or a combination of both, including principal forbearance. Our modification programs generally require completion of a trial period of at least three months prior to receiving the modification. If a borrower fails to complete the trial period, the loan is considered for our other workout activities. These modification programs offer eligible borrowers extension of the loan's term up to 480 months and a fixed interest rate. Servicers are paid incentive fees for each completed modification, and there are limits on the number of times a loan may be modified.

The volume of these activities increased during 2017 compared to 2016, consistent with the increase in the number of delinquent loans in the single-family credit guarantee portfolio due to the hurricane events in 2017.

When a seriously delinquent single-family loan cannot be resolved through an economically sensible home retention option, we typically seek to pursue a foreclosure alternative or sale of the seriously delinquent loan. We pay servicers incentive fees for each completed foreclosure alternative. In some cases, we provide cash relocation assistance to the borrower, while allowing the borrower to exit the home in an orderly manner. We offer the following types of foreclosure alternatives:

- Short sale - The borrower sells the property for less than the total amount owed under the terms of the loan. A short sale is preferable to a borrower because we provide limited relief to the borrower from repaying the entire amount owed on the loan. A short sale allows Freddie Mac to avoid the costs we would otherwise incur to complete the foreclosure and subsequently sell the property.
- Deed in lieu of foreclosure - The borrower voluntarily agrees to transfer title of the property to us without going through formal foreclosure proceedings.

We discuss sales of seriously delinquent loans in the Servicing Transfers and Sales of Certain Seriously Delinquent Loans section below.

The volume of foreclosures moderated in recent periods, primarily due to generally declining volumes of seriously delinquent loans, the success of our loan workout programs and our sales of certain seriously delinquent loans. The volume of our short sale transactions declined in 2017 compared to 2016, continuing the trend in recent periods. Similarly, the volume of short sales in the overall market also declined in recent periods as home prices have continued to increase.

The following graphs provide detail about our single-family loan workout activities and foreclosure sales.

Home Retention Actions

Foreclosure Alternatives and Foreclosure Sales

The tables below contain credit characteristic data on our single-family modified loans.

	As of December 31, 2017			
(Dollars in billions)	UPB	% of Portfolio	CLTV Ratio	SDQ Rate
HAMP	$23.6	2 %	70 %	8.08 %
Non-HAMP	41.0	2	75 %	12.99 %
Total	$64.6	4 %	73 %	11.34 %

	As of December 31, 2016			
(Dollars in billions)	UPB	% of Portfolio	CLTV Ratio	SDQ Rate
HAMP	$33.8	2 %	78 %	6.49 %
Non-HAMP	43.1	2	82 %	11.76 %
Total	$76.9	4 %	80 %	9.64 %

The table below contains information about the payment performance of modified loans in our single-family credit guarantee portfolio, based on the number of loans that were current or paid off one year and, if applicable, two years after modification.

	Quarter of Loan Modification Completion							
	4Q 2016	3Q 2016	2Q 2016	1Q 2016	4Q 2015	3Q 2015	2Q 2015	1Q 2015
Current or paid off one year after modification:	57 %	62 %	63 %	67 %	64 %	66 %	66 %	69 %
Current or paid off two years after modification:	N/A	N/A	N/A	N/A	60 %	63 %	64 %	67 %

Servicing Transfers and Sales of Certain Seriously Delinquent Loans

From time to time, we facilitate the transfer of servicing for certain groups of loans that are delinquent or are deemed at risk of default to servicers that we believe have capabilities and resources necessary to improve the loss mitigation associated with the loans. See Sellers and Servicers in Counterparty Credit Risk for additional information on these activities.

We pursue sales of seriously delinquent loans when we believe the sale of these loans provides better economic returns than continuing to hold them. During 2017 and 2016, we completed sales of $0.5 billion and $3.1 billion, respectively, in UPB of seriously delinquent single-family loans. Of the $17.0 billion in UPB of single-family loans classified as held-for-sale at December 31, 2017, $2.1 billion related to loans that were seriously delinquent. The FHFA requirements guiding these transactions, including bidder qualifications, loan modifications and performance reporting, are designed to improve borrower outcomes.

Managing Foreclosure and REO Activities

In a foreclosure, we may acquire the underlying property and later sell it, using the proceeds of the sale to reduce our losses.

We typically acquire properties as a result of borrower defaults and subsequent foreclosures on loans that we own or guarantee. We evaluate the condition of, and market for, newly acquired REO properties to determine if repairs are needed, determine occupancy status and whether there are legal or other issues to be addressed, and determine our sale or disposition strategy. When we sell an REO property, we typically provide an initial period where we consider offers by owner occupants and others before offers by investors. We also consider alternative disposition processes, such as REO auctions, bulk sales channels and partnering with locally-based entities to facilitate dispositions.

In recent years, the volume of REO acquisitions has been significantly affected by the length of the foreclosure process, which extends the time it takes for loans to be foreclosed upon and the underlying properties to transition to REO. As of December 31, 2017 and 2016, the percentage of seriously delinquent loans that have been delinquent for more than six months was 44% and 57%, respectively.

Delays in Foreclosure Process and Average Foreclosure Completion Timelines

Our serious delinquency rates and credit losses continue to be adversely affected by delays in the foreclosure process in states where a judicial foreclosure is required. Foreclosures generally take longer to complete in such states, resulting in concentrations of delinquent loans in those states, as shown in the table below. At December 31, 2017, loans in states with a judicial foreclosure process comprised 38% of our single-family credit guarantee portfolio.

The table below presents the length of time our loans have been seriously delinquent, by jurisdiction type.

	As of December 31,					
	2017		2016		2015	
Aging, by locality	Loan Count	Percent	Loan Count	Percent	Loan Count	Percent
Judicial states						
<= 1 year	50,554	44 %	35,599	34 %	40,265	29 %
> 1 year and <= 2 years	10,649	9	12,257	11	16,199	12
> 2 years	10,863	9	14,318	14	28,265	20
Non-judicial states						
<= 1 year	34,850	30	32,949	31	38,010	27
> 1 year and <= 2 years	5,406	5	6,075	6	8,660	6
> 2 years	3,367	3	4,736	4	8,322	6
Combined						
<= 1 year	85,404	74	68,548	65	78,275	56
> 1 year and <= 2 years	16,055	14	18,332	17	24,859	18
> 2 years	14,230	12	19,054	18	36,587	26
Total	115,689	100 %	105,934	100 %	139,721	100 %

The longer a loan remains delinquent, the greater the associated costs we incur. Loans that remain delinquent for more than one year are more challenging to resolve as many of these borrowers may not be in contact with the servicer, may not be eligible for loan modifications or may determine that it is not economically beneficial for them to enter into a loan modification due to the amount of costs incurred on their behalf while the loan was delinquent. We expect the portion of our credit losses related to loans in states with judicial foreclosure processes will remain high as loans awaiting court proceedings in those states transition to REO or other loss events. The number of our single-family loans delinquent for more than one year declined 19% during 2017.

Our servicing guidelines do not allow initiation of the foreclosure process on a primary residence until a loan is at least 121 days delinquent, regardless of where the property is located. However, we evaluate the timeliness of foreclosure completion by our servicers based on the state where the property is located. Our servicing guide provides for instances of allowable foreclosure delays in excess of the expected timelines for specific situations involving delinquent loans, such as when the borrower files for bankruptcy or appeals a denial of a loan modification.

The table below presents average completion times for foreclosures of our single-family loans.

	Year Ended December 31,		
(Average days)	2017	2016	2015
Judicial states			
Florida	1,069	1,205	1,332
New Jersey	1,497	1,767	1,602
New York	1,658	1,599	1,553
All other judicial states	704	742	828
Judicial states, in aggregate	907	1,030	1,076
Non-judicial states, in aggregate	545	562	637
Total	751	827	892

We believe that our average foreclosure timeline is likely to remain elevated in the near term due to the backlog of loans that have been delinquent for more than one year, particularly in the judicial states of Florida, New Jersey and New York.

Our REO inventory declined in 2017 primarily due to a decrease in REO acquisitions driven by a large proportion of property sales to third parties at foreclosure. Third-party sales at foreclosure auction allow us to avoid the REO property expenses that we would have otherwise incurred if we held the property in our REO inventory until disposition.

We expect the rate of decline in our REO inventory will slow as a large portion of newly acquired REO properties are older, low value and rural properties which are more challenging to market and sell. In addition, legal-related delays (i.e., redemption periods and eviction procedures) and a business strategy to repair more homes affect significant portions of our REO inventory, resulting in extended holding periods. As our REO inventory declines, we would expect REO dispositions to decline as well.

The table below shows our single-family REO activity.

	Year Ended December 31,					
	2017		2016		2015	
(Dollars in millions)	Number of Properties	Amount	Number of Properties	Amount	Number of Properties	Amount
Beginning balance - REO	11,418	$1,215	17,004	$1,774	25,768	$2,684
Acquisitions	12,240	1,191	16,161	1,562	23,171	2,235
Dispositions	(15,359)	(1,506)	(21,747)	(2,121)	(31,935)	(3,145)
Ending balance - REO	8,299	900	11,418	1,215	17,004	1,774
Beginning balance, valuation allowance		(17)		(52)		(126)
Change in valuation allowance		3		35		73
Ending balance, valuation allowance		(14)		(17)		(53)
Ending balance - REO		$886		$1,198		$1,721

Severity Ratios

Severity ratios are the percentages of our realized losses when loans are resolved by the completion of REO dispositions and third-party foreclosure sales or short sales. Severity ratios are calculated as the amount of our recognized losses divided by the aggregate UPB of the related loans. The amount of recognized losses is equal to the amount by which the UPB of the loans exceeds the amount of sales proceeds from disposition of the properties, net of capitalized repair and selling expenses, if applicable.

The table below presents single-family severity ratios.

	Year Ended December 31,		
	2017	2016	2015
REO dispositions and third-party foreclosure sales	27.2%	32.8%	34.3%
Short sales	27.7%	29.0%	30.1%

Our severity ratios remained relatively stable during 2017 compared to 2016. These severity ratios are influenced by several factors, including the geographic location of the property and the related selling expenses for REO dispositions and short sales.

REO Property Status

A significant portion of our REO properties is unable to be marketed at any given time because the properties are occupied, under repair or subject to a redemption period, which is a post-foreclosure period during which borrowers may reclaim a foreclosed property. Redemption periods can increase the average holding period of our inventory, and have done so in recent years. As of December 31, 2017, approximately 47% of our REO properties were unable to be marketed because the properties were occupied, under repair or located in states with a redemption period, and 14% of the properties were being evaluated for listing and determination of our sales or disposition strategy. As of December 31, 2017, approximately 26% of our REO properties were listed and available for sale, and 13% of our inventory was pending the settlement of sales. Though it varied significantly in different states, the average holding period of our single-family REO properties, excluding any redemption period, was 265 days and 275 days for our REO dispositions during 2017 and 2016, respectively.

Multifamily Mortgage Credit Risk

We manage our exposure to multifamily mortgage credit risk, which is a type of commercial real estate credit risk, using the following principal strategies:

- Maintaining policies and procedures for new business activity, including prudent underwriting standards;
- Transferring a large majority of expected and stress credit losses to third parties through our credit risk transfer products, primarily K Certificates and SB Certificates; and
- Managing our portfolio, including loss mitigation activities.

Maintaining Policies and Procedures for New Business Activity, Including Prudent Underwriting Standards

We use a prior approval underwriting approach for multifamily loans, in contrast to the delegated underwriting approach used for single-family loans. Under this approach, we maintain credit discipline by completing our own underwriting and credit review for each new loan prior to issuance of a loan commitment, including review of third-party appraisals and cash flow analysis. Our underwriting standards focus on the LTV ratio and DSCR, which estimates ability to repay using the secured property's cash flow, after expenses. A higher DSCR indicates lower credit risk. Our standards require maximum LTV ratios and minimum DSCRs that vary based on the characteristics and features of the loan. Loans are generally underwritten with a maximum original LTV ratio of 80% and a DSCR of greater than 1.25, assuming monthly payments that reflect amortization of principal. However, certain loans may have a higher LTV ratio and/or a lower DSCR, typically where this will serve our mission and contribute to achieving our affordable housing goals. For more detail on LTV ratios of our portfolio, see Managing Our Portfolio, Including Loss Mitigation Activities in this section. Consideration is also given to other qualitative factors, such as borrower experience, location of the property and the strength of the local market. Sellers provide certain representations and warranties to us regarding the loans they sell to us, and are required to repurchase loans for which there has been a breach of representation or warranty. However, repurchases of multifamily loans have been extremely rare due to our underwriting approach prior to issuance of a loan commitment.

Multifamily loans may be amortizing or interest-only (for the full term or a portion thereof) and have a fixed or variable rate of interest. Multifamily loans generally have shorter terms than single-family loans and typically have maturities ranging from five to ten years. Most multifamily loans require a balloon payment at maturity, making ability to refinance or pay off the loan at maturity a key attribute. Some borrowers may be unable to refinance during periods of rising interest rates or adverse market conditions, increasing the likelihood of borrower default.

We may take on additional credit risk through the issuance of certain other securitization products (e.g., Q Certificates and M Certificates). In these transactions, the loans or bonds underlying the issued securities are contributed by third parties and are underwritten by us after (rather than at) origination. Prior to securitization, we are not exposed to the credit risk of these loans or bonds. However, as we may guarantee some or all of the securities issued by the trusts used in these transactions, we effectively assume credit risk equal to the guaranteed UPB. Similar to our K Certificates and SB Certificates, these other securitization products generally provide for structural credit enhancements

(e.g., subordination or other loss sharing features) that allocate first loss exposure to bonds held by third parties.
The table below presents our new business activity related to loan purchases and guarantees by product term.

	Year Ended December 31,					
	2017		2016		2015	
(Dollars in millions)	Amount	% of Total	Amount	% of Total	Amount	% of Total
10-year loans, fixed or adjustable	$31,338	43 %	$24,378	43 %	$20,603	43 %
7-year loans, fixed or adjustable	23,844	33	19,367	34	16,875	36
Other	18,019	24	13,085	23	9,786	21
Total	$73,201	100 %	$56,830	100 %	$47,264	100 %

Transferring a Large Majority of Expected and Stress Credit Losses to Third Parties Through Our Credit Risk Transfer Products, Primarily K Certificates and SB Certificates

In connection with the acquisition of a loan or group of loans, we may obtain various forms of credit protection that reduce our credit risk exposure to the underlying mortgage borrower. Examples of this credit protection may include obtaining recourse and/or indemnification protection from our lenders or sellers.

In addition to obtaining credit protection at the time of loan acquisition, we may also reduce our credit risk exposure to the underlying borrower by using one or more of our credit risk transfer products. Our principal credit risk transfer mechanism continues to be our credit risk transfer securitizations, primarily K Certificates and SB Certificates. In these transactions, we sell loans to a securitization trust that issues senior, mezzanine and subordinated classes of securities. While we guarantee the senior classes of securities and therefore retain the associated credit risk of those securities, we transfer a large majority of the expected and stress credit losses of the underlying loans through the sale of the unguaranteed mezzanine and subordinate classes of securities to third-party investors, thereby reducing our overall credit risk exposure. These unguaranteed mezzanine and subordinate classes of securities will absorb any credit losses prior to our guarantee.

Since 2009, we have transferred a portion of the credit risk related to $249 billion in UPB of multifamily loans through our credit risk transfer products, primarily K Certificates and SB Certificates. The average remaining level of subordination on all outstanding K Certificates and SB Certificates was 14% at both December 31, 2017 and 2016. Since we began issuing K Certificates and SB Certificates, we have not experienced credit losses associated with our guarantees on these securities.

We may also transfer credit risk through a variety of other credit risk transfer products, including loan sales and SCR debt notes. A SCR debt note is an unsecured and unguaranteed corporate debt obligation where the amount of principal and interest payments due to investors is linked to the credit performance of a reference pool of mortgage assets where we currently have credit risk exposure. The reference pool is structured to include multiple notional credit risk positions (e.g., first loss, mezzanine and senior positions) with the issued SCR debt notes being linked to one or more of these notional positions. To the extent that the notional credit risk position of the reference pool is reduced because of a specified credit event, the associated SCR debt note will be written down, reducing the amount of principal and interest payments that the investor will ultimately receive.

We continue to develop other strategies to reduce our credit risk exposure to multifamily loans and securities. See Our Business Segments - Multifamily for additional information on our existing credit risk transfer products.

See Our Business Segments - Multifamily - Credit Risk Transfer Activity for additional information on our 2017 credit risk transfer activity.

Managing Our Portfolio, Including Loss Mitigation Activities

To help mitigate our potential losses, we generally require sellers to act as the primary servicer for loans they have sold to us, including property monitoring tasks beyond those typically performed by single-family servicers. We typically transfer the role of master servicer in our K Certificate transactions to third parties, while retaining that role in our SB Certificate transactions. Servicers for unsecuritized loans over $1 million must generally provide us with an assessment of the mortgaged property at least annually based on the servicer’s analysis of the property as well as the borrower’s financial statements. In situations where a borrower or property is in distress, the frequency of communications with the borrower may be increased. We rate servicing performance on a regular basis, and we may conduct on-site reviews to confirm compliance with our standards.

We primarily use credit enhancements, such as the subordination provided by our credit risk transfer securitizations (e.g., K Certificates and SB Certificates), to mitigate our credit losses. For unsecuritized loans, we may offer a workout option to give the borrower an opportunity to bring the loan current and retain ownership of the property, such as providing a short-term extension of up to 12 months. These arrangements are entered into with the expectation that we will recover our initial investment or minimize our losses. We do not enter into these arrangements in situations where we believe we would experience a loss in the future that is greater than or equal to the loss we would experience if we foreclosed on the property at the time of the agreement. Our multifamily loan modification and other workout activities have been minimal in the last three years.

After the loans have been securitized and the large majority of the expected and stress credit losses has been transferred to third-party investors, we monitor the performance of our credit risk transfer securitizations to assess our potential exposure to losses. Due to the subordination protection provided by our credit risk transfer securitizations, our primary credit risk exposure in our multifamily mortgage portfolio results from our unsecuritized loans. By their nature, loans awaiting securitization that we hold for sale remain on our balance sheet for a shorter period of time than loans we hold for investment.

In addition to subordination, the Multifamily segment has various other credit enhancements, primarily related to our mortgage loans, other securitization products and other mortgage-related guarantees, in the form of collateral posting requirements, bond insurance, loss sharing agreements and other similar arrangements. These credit enhancements, along with the proceeds received from the sale of the underlying mortgage collateral are designed to enable us to recover all or a portion of our losses on our mortgage loans or the amounts paid under our financial guarantee contracts. Our historical losses paid under our guarantee contracts and related recoveries pursuant to these agreements have not been significant.

The table below presents the total current and protected UPB of our multifamily mortgage portfolio that is credit-enhanced and the associated maximum coverage provided by subordination and SCR debt notes:

(In millions)	As of December 31, 2017		As of December 31, 2016	
	Total Current and Protected UPB[1]	Maximum Coverage[2]	Total Current and Protected UPB[1]	Maximum Coverage[2]
Subordination	$189,099	$30,869	$143,802	$24,522
SCR debt notes	2,732	137	1,898	95
Other[3]	1,833	726	1,159	701
Total credit enhancements		$31,732		$25,318

(1) For subordination and other, total current and protected UPB represents the UPB of the guaranteed securities. For SCR debt notes, total current and protected UPB represents the UPB of the assets included in the reference pool.

(2) For subordination, maximum coverage represents the UPB of the securities that are subordinate to our guarantee and held by third parties. For SCR debt notes, maximum coverage represents the outstanding balance of SCR debt notes held by third parties. For other credit enhancements, maximum coverage represents the remaining amount of loss recovery that is available subject to terms of the counterparty agreements.

(3) Consists of multifamily HFA indemnification and loss reimbursement agreements with third parties obtained in certain of our Q Certificate transactions.

We report multifamily delinquency rates based on the UPB of loans in our multifamily mortgage portfolio that are two monthly payments or more past due or in the process of foreclosure, as reported by our servicers. Loans that have been modified (or are subject to forbearance agreements) are not counted as delinquent as long as the borrower is less than two monthly payments past due under the modified (or forbearance) terms. The vast majority of our forbearance agreements are short-term (3 months) and resulted from the 3Q 2017 hurricane impacts. At December 31, 2017, the total loan UPB subject to forbearance agreements was $673 million, which consisted of $489 million of loans underlying off-balance sheet securitizations and $184 million of on-balance sheet loans held in our retained portfolio. We expect the majority of these loans will be current at the expiration of the forbearance period, resulting in no significant impact to our financial results.

The table below shows the delinquency rates for both credit-enhanced and non-credit-enhanced loans in our multifamily mortgage portfolio.

	As of December 31,					
	2017		2016		2015	
	% of Portfolio	Delinquency Rate	% of Portfolio	Delinquency Rate	% of Portfolio	Delinquency Rate
Non-credit-enhanced	18 %	0.06 %	24 %	0.04 %	32 %	0.03 %
Credit-enhanced	82	0.01 %	76	0.02 %	68	0.02 %
Total	100 %	0.02 %	100 %	0.03 %	100 %	0.02 %

The table below presents information about the composition and delinquency rates of the multifamily mortgage portfolio.

	As of December 31,			
	2017		2016	
(Dollars in billions)	UPB	Delinquency Rate	UPB	Delinquency Rate
Unsecuritized loans	$38.2	0.01 %	$42.4	0.04 %
Securitization-related products	192.5	0.02 %	147.6	0.03 %
Other mortgage-related guarantees	10.0	— %	9.7	— %
Total	$240.7	0.02 %	$199.7	0.03 %
Unsecuritized loans, excluding HFS loans				
Original LTV ratio				
Below 75%	$10.0	— %	$16.8	— %
75% to 80%	6.1	— %	7.0	— %
Above 80%	1.6	— %	2.1	— %
Total	$17.7	— %	$25.9	— %
Weighted average LTV ratio at origination	69 %		68 %	
Maturity dates				
2017	N/A	N/A	$1.9	— %
2018	$2.4	— %	6.7	— %
2019	3.9	— %	6.1	— %
2020	2.2	— %	2.2	— %
2021	3.0	— %	3.3	— %
Thereafter	6.2	— %	5.7	— %
Total	$17.7	— %	$25.9	— %
Year of acquisition				
2010 and prior	$6.7	— %	$14.5	— %
2011 and after	11.0	— %	11.4	— %
Total	$17.7	— %	$25.9	— %
K Certificates, SB Certificates and other securitization products:				
Year of issuance				
2012 and prior	$39.2	0.09 %	$35.5	0.10 %
2013	20.7	— %	21.6	— %
2014	13.8	— %	15.4	— %
2015	26.7	0.01 %	30.0	— %
2016	37.7	— %	45.1	0.01 %
2017	54.4	— %	N/A	N/A
Total	$192.5	0.02 %	$147.6	0.03 %
Subordination level at issuance				
No subordination	$9.0	0.22 %	$3.3	— %
Less than 10%	3.9	— %	4.5	0.71 %
10% to 15%	116.0	0.01 %	75.6	0.01 %

Greater than 15%	63.6	—	%	64.2	—	%
Total	$192.5	0.02	%	$147.6	0.03	%

Our REO activity has remained low in the past several years as a result of the strong property performance of our multifamily mortgage portfolio. As of December 31, 2017, we had two REO properties.

Credit Losses and Recoveries

Our multifamily credit losses remain low as a result of the strong property performance of our multifamily mortgage portfolio. The table below contains details on our multifamily credit losses and delinquencies.

	Year Ended December 31,		
(Dollars in millions)	2017	2016	2015
Charge-offs, gross(1)	$4	$2	$9
Recoveries	—	—	—
Charge-offs, net	4	2	9
REO operations expense (income)	—	—	4
Credit losses (gains)	$4	$2	$13
Credit losses (gains) (in bps)	0.2	0.1	0.8
Number of delinquent loans	5	6	4

(1) Includes cumulative fair value losses recognized through the date of foreclosure for multifamily loans we elected to carry at fair value at the time of our purchase.

Loan Loss Reserves

The table below summarizes our multifamily loan loss reserves activity.

	Year Ended December 31,				
(Dollars in millions)	2017	2016	2015	2014	2013
Beginning balance	$35	$59	$94	$151	$382
Provision (benefit) for credit losses	13	(22)	(26)	(55)	(218)
Charge-offs, gross	(4)	(2)	(9)	(3)	(7)
Recoveries	—	—	—	1	1
Transfers, net	—	—	—	—	(7)
Ending balance	$44	$35	$59	$94	$151
As a percentage of non-credit-enhanced multifamily mortgage portfolio	0.10%	0.07%	0.11%	0.16%	0.24%

TDRs and Non-accrual Loans

The tables below provide information about the UPB of multifamily TDRs and non-accrual loans on our consolidated balance sheets.

(In millions)	As of December 31, 2017	2016	2015	2014	2013
TDRs on accrual status	$76	$277	$321	$535	$675
Non-accrual loans	69	108	189	385	628
Total TDRs and non-accrual loans	$145	$385	$510	$920	$1,303
Loan loss reserves associated with:					
TDRs on accrual status	$—	$3	$9	$21	$15
Non-accrual loans	7	7	12	31	65
Total	$7	$10	$21	$52	$80

(In millions)	Year Ended December 31, 2017	2016	2015	2014	2013
Foregone interest income on TDRs and non-accrual loans [1]	$2	$3	$3	$4	$8

(1) Represents the amount of interest income that we would have recognized for loans outstanding at the end of each period, had the loans performed according to their original contractual terms.

The balance of our multifamily TDR and non-accrual loans has declined for the last four years, which reflects continued strong portfolio performance and positive market fundamentals.

Mortgage-Related Securities Credit Risk

Our mortgage-related securities portfolio consists of investments in agency and non-agency securities. Agency securities have historically presented minimal credit risk as a result of the guarantee provided by, and the U.S. government's support of, the institutions that issue agency securities. Because non-agency securities generally do not include a guarantee from a GSE or governmental agency, we have credit risk exposure to the underlying collateral of these securities. This credit risk exposure, which principally arises from securities purchased prior to conservatorship, has declined in recent years as we have reduced our positions in non-agency securities. Substantially all of our recent mortgage-related securities purchases have consisted of agency securities.

Risk Management Activities - Non-Agency Mortgage Related Securities

As the non-agency mortgage-related securities pay down, our credit risk exposure is reduced. In addition, we further reduce our credit risk exposure by selling or securitizing certain assets and pursuing litigation and other loss recovery efforts. For information on our remaining litigation related to certain of our non-agency mortgage-related securities, see Note 14.

While we continue to have a portfolio of non-agency mortgage-related securities, our investments in these securities have declined in recent years, as we continue our efforts to dispose of certain of these securities in an economically sensible manner. See Reducing Our Mortgage-Related Investments Portfolio Over Time for information concerning our disposition of these securities.

Our Investments in Non-Agency Mortgage-Related Securities

Our investments in non-agency mortgage-related securities are classified according to the nature of the underlying collateral, as either non-agency RMBS or non-agency CMBS.

Non-Agency RMBS

Our non-agency RMBS are backed by single-family real estate loans, including subprime, option ARM, Alt-A and other loans. We categorize our non-agency RMBS as subprime, option ARM or Alt-A if the securities were identified as such based on information provided to us when we acquired these securities. Since the beginning of 2007, most of the actual principal shortfalls on our non-agency mortgage-related securities have resulted from non-agency RMBS backed by subprime, option ARM and Alt-A loans. As of December 31, 2017, approximately 94% of the total $5.3 billion (by UPB) of our non-agency RMBS backed by subprime, option ARM and Alt-A loans were below investment grade. Our non-agency RMBS credit risk exposure is expected to continue to decline over time as we reduce the less liquid assets held in our investments portfolio, primarily through sales. See Note 7 for information concerning our investments in non-agency RMBS.

Non-Agency CMBS

We have investments in certain non-agency CMBS backed by multifamily real estate loans. While we have credit risk exposure to the underlying collateral of these securities and therefore exposure to the stresses of the multifamily real estate market, we believe such exposure is mitigated by the presence of structural subordination, as we principally invest in the most senior tranches of the CMBS deals. As of

December 31, 2017, approximately 99% of the total $2.7 billion of our non-agency CMBS (by UPB) were investment grade or above or guaranteed by us. As a result, while we monitor these securities for credit losses, we believe our exposure to credit risk is limited. See Note 7 for information concerning our investments in non-agency CMBS.

Counterparty Credit Risk

We are exposed to counterparty credit risk, which is a type of institutional credit risk, as a result of our contracts with sellers and servicers, mortgage insurers, bond insurers, credit insurers, derivative counterparties, including clearing members and clearinghouses, mortgage-related security issuers and document custodians. We manage our exposure to counterparty credit risk using the following principal strategies:

- Maintaining eligibility standards;
- Evaluating counterparty financial strength and performance and monitoring our exposure; and
- Working with underperforming counterparties and limiting our losses from their nonperformance of obligations, when possible.

In the sections below, we discuss our management of counterparty credit risk for each type of counterparty to which we have significant exposure.

Sellers and Servicers

Overview

In our single-family guarantee business, we do not originate loans or have our own loan servicing operation. Instead, our sellers and servicers perform the primary loan origination and loan servicing functions on our behalf. We establish standards for our sellers and servicers to follow and have contractual arrangements with them under which they represent and warrant that the loans they sell to us meet our standards and that they will service loans in accordance with our standards. If we discover that the representations or warranties related to a loan were breached (i.e., that contractual standards were not followed), we can exercise certain contractual remedies to mitigate our actual or potential credit losses. If our sellers or servicers lack appropriate controls, experience a failure in their controls, or experience an operating disruption, including as a result of financial pressure, legal or regulatory actions or ratings downgrades, we could experience a decline in mortgage servicing quality and/or be less likely to recover losses through lender repurchases, recourse agreements or other credit enhancements, where applicable.

In our multifamily business, we are exposed to the risk that multifamily sellers and servicers could come under financial pressure, which could potentially cause degradation in the quality of the servicing they provide us, including their monitoring of each property’s financial performance and physical condition. This could also, in certain cases, reduce the likelihood that we could recover losses through lender repurchases, recourse agreements or other credit enhancements, where applicable. This risk primarily relates to multifamily loans that we hold on our consolidated balance sheets where we retain all of the related credit risk.

Maintaining Eligibility Standards

Our eligibility standards for sellers and servicers require the following: a demonstrated operating history in residential mortgage origination and servicing, or an eligible agent acceptable to us; adequate insurance coverage; a quality control program that meets our standards; and sufficient net worth, capital, liquidity and funding sources.

Evaluating Counterparty Financial Strength and Performance and Monitoring our Exposure

We perform ongoing monitoring and review of our exposure to individual sellers or servicers in accordance with our counterparty credit risk management framework, including requiring our counterparties to provide regular financial reporting to us. We also monitor and rate our sellers and servicers' compliance with our standards and periodically review their operational processes. We may disqualify or suspend a seller or servicer with or without cause at any time. Once a seller or servicer is disqualified or suspended, we no longer purchase loans originated by that counterparty and no longer allow that counterparty to service loans for us, while seeking to transfer servicing of existing portfolios.

As discussed in more detail in Our Business Segments, we acquire a significant portion of both our single-family and multifamily loan purchase volume from several large lenders, and a large percentage of our loans are also serviced by several large servicers.

We have significant exposure to non-depository and smaller depository financial institutions in our single-family business. These institutions may not have the same financial strength or operational capacity, or be subject to the same level of regulatory oversight as large depository institutions.

Although our business with our single-family loan sellers is concentrated, a number of our largest single-family loan seller counterparties reduced or eliminated their purchases of loans from mortgage brokers and correspondent lenders in recent years. As a result, we acquire a greater portion of our single-family business volume directly from non-depository and smaller depository financial institutions.

Also in recent years, there has been a shift in our single-family servicing from depository institutions to non-depository institutions. Some of these non-depository institutions have grown rapidly in recent years and now service a large share of our loans. The table below summarizes the concentration of non-depository servicers of our single-family credit guarantee portfolio.

	As of December 31,			
	2017		2016	
	% of Portfolio[1]	% of Serious Delinquent Single-Family Loans	% of Portfolio[1]	% of Serious Delinquent Single-Family Loans
Top five non-depository servicers	15%	23%	13%	24%
Other non-depository servicers	20%	30%	18%	27%
Total	35%	53%	31%	51%

(1) Excludes loans where we do not exercise control over the associated servicing.

Working with Underperforming Counterparties and Limiting our Losses from Their Nonperformance of Obligations, when Possible

We actively manage the current quality of loan originations of our largest single-family sellers by performing loan quality control sampling reviews and communicating loan defect rates and the causes of those defects to such sellers on a monthly basis. If necessary, we work with these sellers to develop an appropriate plan of corrective action.

We use a variety of tools and techniques to engage our single-family sellers and servicers and limit our losses, including the following: