CIENA CORP
Form SC 13G
February 23, 2009

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No.)*

Ciena Corporation
(Name of Issuer)

Common Stock, $0.01 Par Value
(Title of Class of Securities)

171779309
(CUSIP Number)

February 20, 2009
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

[_] Rule 13d-1(b)

[X] Rule 13d-1(c)

[_] Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be “filed” for the purpose of Section 18 of the Securities Exchange Act of 1934 (“Act”) or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No 171779309

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Kingdom Ridge Capital Master Fund, Ltd.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) [_]
(b) [X]

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

Cayman Islands

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

4,550,000

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

4,550,000

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,550,000

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES
CERTAIN SHARES (SEE INSTRUCTIONS)

[_]

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

5.03%

12. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

CO

CUSIP No 171779309

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Kingdom Ridge Capital, LLC

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) [_]
(b) [X]

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

4,550,000

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

4,550,000

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,550,000

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES
CERTAIN SHARES (SEE INSTRUCTIONS)
[_]

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

5.03%

12. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

OO

CUSIP No 171779309

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Christopher Zepf

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) [_]
(b) [X]

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

5. SOLE VOTING POWER

0

6. SHARED VOTING POWER

4,550,000

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

4,550,000

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,550,000

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES
CERTAIN SHARES (SEE INSTRUCTIONS)
[_]

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

5.03%

12. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No 171779309

Item 1. (a). Name of Issuer:

Ciena Corporation

(b). Address of Issuer's Principal Executive Offices:

1201 Winterson Road
Linthicum, MD 21090-2205

Item 2. (a). Name of Person Filing:

Kingdom Ridge Capital Master Fund, Ltd.
Kingdom Ridge Capital, LLC
Christopher Zepf

(b). Address of Principal Business Office, or if None, Residence:

Kingdom Ridge Capital Master Fund, Ltd.
Gardenia Court, Suite 3307
45 Market Street, Camana Bay
P.O. Box 896
Grand Cayman KY1-1103
Cayman Islands

Kingdom Ridge Capital, LLC
81 Main Street, Suite 209
White Plains, New York 10601
United States of America

Christopher Zepf
c/o Kingdom Ridge Capital, LLC
81 Main Street, Suite 209
White Plains, New York 10601
United States of America

(c). Citizenship:

Kingdom Ridge Capital Master Fund, Ltd. – Cayman Islands exempted company
Kingdom Ridge Capital, LLC – Delaware limited liability company

Christopher Zepf – United States citizen (d). Title of Class of Securities:

Common Stock, $0.01 Par Value

(e). CUSIP Number:

171779309

Item 3. If This Statement is filed pursuant to ss.240.13d-1(b) or 240.13d-2(b), or (c), check whether the person filing is a

(a) [_] Broker or dealer registered under Section 15 of the Exchange Act (15 U.S.C. 78c).

(b) [_] Bank as defined in Section 3(a)(6) of the Exchange Act (15 U.S.C. 78c).

(c) [_] Insurance company as defined in Section 3(a)(19) of the Exchange Act (15 U.S.C. 78c).

(d) [_] Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).

(e) [_] An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);

(f) [_] An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);

(g) [_] A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);

(h) [_] A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C.1813);

(i) [_] A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);

(j) [_] Group, in accordance with s.240.13d-1(b)(1)(ii)(J).

Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

(a) Amount beneficially owned:

Kingdom Ridge Capital Master Fund, Ltd.: 4,550,000
Kingdom Ridge Capital, LLC: 4,550,000
Christopher Zepf: 4,550,000

(b) Percent of class:

Kingdom Ridge Capital Master Fund, Ltd.: 5.03%
Kingdom Ridge Capital, LLC: 5.03%
Christopher Zepf: 5.03%

(c) Number of shares as to which Kingdom Ridge Capital Master Fund, Ltd. has:

(i)	Sole power to vote or to direct the vote	0,
(ii)	Shared power to vote or to direct the vote	4,550,000,
(iii)	Sole power to dispose or to direct the disposition of	0,
(iv)	Shared power to dispose or to direct the disposition of	4,550,000.

Number of shares as to which Kingdom Ridge Capital, LLC has:

(i)	Sole power to vote or to direct the vote	0,
(ii)	Shared power to vote or to direct the vote	4,550,000,
(iii)	Sole power to dispose or to direct the disposition of	0,
(iv)	Shared power to dispose or to direct the disposition of	4,550,000.

Number of shares as to which Christopher Zepf has:

(i)	Sole power to vote or to direct the vote	0,
(ii)	Shared power to vote or to direct the vote	4,550,000,
(iii)	Sole power to dispose or to direct the disposition of	0,
(iv)	Shared power to dispose or to direct the disposition of	4,550,000.

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following [_].

Item 6. Ownership of More Than Five Percent on Behalf of Another Person.

If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employee benefit plan, pension fund or endowment fund is not required.

N/A

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.

If a parent holding company has filed this schedule, pursuant to Rule 13d-1(b)(1)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company has filed this schedule pursuant to Rule 13d-1(c) or Rule 13d-1(d), attach an exhibit stating the identification of the relevant subsidiary.

N/A

Item 8. Identification and Classification of Members of the Group.

If a group has filed this schedule pursuant to §240.13d-1(b)(1)(ii)(J), so indicate under Item 3(j) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to §240.13d-1(c) or §240.13d-1(d), attach an exhibit stating the identity of each member of the group.

N/A

Item 9. Notice of Dissolution of Group.

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security reported on will be filed, if required, by members of the group, in their individual capacity. See Item 5.

N/A

Item 10. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

February 23, 2009
Date

KINGDOM RIDGE CAPITAL MASTER FUND, LTD.*

By: /s/ Christopher Zepf
Name: Christopher Zepf
Title: Director

KINGDOM RIDGE CAPITAL, LLC*

By: /s/ Christopher Zepf
Name: Christopher Zepf
Title: Managing Principal

CHRISTOPHER ZEPF*

/s/ Christopher Zepf

*The Reporting Persons disclaim beneficial ownership in the shares except to the extent of the Reporting Persons' pecuniary interest therein.

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative other than an executive officer or general partner of the filing person, evidence of the representative's authority to sign on behalf of such person shall be filed with the statement, provided, however, that a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

Note. Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See s.240.13d-7 for other parties for whom copies are to be sent.

Attention. Intentional misstatements or omissions of fact constitute Federal criminal violations (see 18 U.S.C. 1001).

AGREEMENT

The undersigned agree that this Schedule 13G, dated February 23, 2009, relating to the Common Stock, par value $0.01 of Ciena Corporation shall be filed on behalf of the undersigned.

February 23, 2009
Date

KINGDOM RIDGE CAPITAL MASTER
FUND, LTD.

By: /s/ Christopher Zepf
Name: Christopher Zepf
Title: Director

KINGDOM RIDGE CAPITAL, LLC

By: /s/ Christopher Zepf
Name: Christopher Zepf
Title: Managing Principal

CHRISTOPHER ZEPF

/s/ Christopher Zepf

SK 26148 0001 968447

ne-height:120%;padding-top:6px;font-size:10pt;">Under FHFA's proposed rule, FHFA would continue to evaluate our performance against the single-family housing goals using a two-part approach that compares the goals-qualifying share of our single-family mortgage acquisitions against both a benchmark level and a market level. To meet a single-family housing goal or subgoal, the percentage of our mortgage acquisitions that meet each goal or subgoal must meet or exceed either the benchmark level set in advance by FHFA or the market level for that year. The market level is determined retrospectively each year based on actual goals-qualifying originations in the primary mortgage market as measured by FHFA based on Home Mortgage Disclosure Act data for that year. Typically, this data is made available in September.

FHFA has proposed the following single-family home purchase and refinance housing goal benchmarks for 2018 through 2020. A home purchase mortgage may be counted toward more than one home purchase benchmark.

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- Low-Income Families Home Purchase Benchmark: At least 24% of our acquisitions of single-family owner-occupied purchase money mortgage loans must be affordable to low-income families (defined as income not in excess of 80% of area median income). This is the same benchmark currently applicable for 2017.
- Very Low-Income Families Home Purchase Benchmark: At least 6% of our acquisitions of single-family owner-occupied purchase money mortgage loans must be affordable to very low-income families (defined as income not greater than 50% of area median income). This is the same benchmark currently applicable for 2017.
- Low-Income Areas Home Purchase Goal Benchmark: The benchmark level for our acquisitions of single-family owner-occupied purchase money mortgage loans for families in low-income areas is set annually by notice from FHFA, based on the benchmark level for the low-income areas home purchase subgoal (below), plus an adjustment factor reflecting the additional incremental share of mortgages for moderate-income families (defined as income not in excess of 100% of area median income) in designated disaster areas.
- Low-Income Areas Home Purchase Subgoal Benchmark: At least 15% of our acquisitions of single-family owner-occupied purchase money mortgage loans must be affordable to families in low-income census tracts or to moderate-income families in high-minority census tracts. This is an increase from the benchmark of 14% currently applicable for 2017.
- Low-Income Families Refinancing Benchmark: At least 21% of our acquisitions of single-family owner-occupied refinance mortgage loans must be affordable to low-income families. This is the same benchmark currently applicable for 2017.

Proposed Multifamily Housing Goals

FHFA has proposed the following multifamily goals and subgoals for 2018 through 2020.

- Low-Income Families Goal: At least 315,000 multifamily units per year financed by us must be affordable to low-income families. This is an increase from the goal of 300,000 units currently applicable for 2017.
- Very Low-Income Families Subgoal: At least 60,000 multifamily units per year financed by us must be affordable to very low-income families. This is the same subgoal currently applicable for 2017.

- Small Affordable Multifamily Properties Subgoal: At least 10,000 multifamily units per year financed by us must be affordable to low-income families in small multifamily rental properties (5 to 50 units). This is the same subgoal currently applicable for 2017.

There is no market-based alternative measurement for the multifamily goal or subgoals.

Consolidated Results of Operations

This section provides a discussion of our condensed consolidated results of operations and should be read together with our condensed consolidated financial statements, including the accompanying notes.

Table 1: Summary of Condensed Consolidated Results of Operations

	For the Three Months Ended June 30,			For the Six Months Ended June 30,		
	2017	2016	Variance	2017	2016	Variance
	(Dollars in millions)					
Net interest income	$5,002	$5,286	$(284)	$10,348	$10,055	$293
Fee and other income	353	174	179	602	377	225
Net revenues	5,355	5,460	(105)	10,950	10,432	518
Investment gains, net	385	398	(13)	376	467	(91)
Fair value losses, net	(691)	(1,667)	976	(731)	(4,480)	3,749
Administrative expenses	(686)	(678)	(8)	(1,370)	(1,366)	(4)
Credit-related income:						
Benefit for credit losses	1,267	1,601	(334)	1,663	2,785	(1,122)
Foreclosed property expense	(34)	(63)	29	(251)	(397)	146
Total credit-related income	1,233	1,538	(305)	1,412	2,388	(976)
Temporary Payroll Tax Cut Continuation Act of 2011 (“TCCA”) fees	(518)	(453)	(65)	(1,021)	(893)	(128)
Other expenses, net	(291)	(254)	(37)	(673)	(518)	(155)
Income before federal income taxes	4,787	4,344	443	8,943	6,030	2,913
Provision for federal income taxes	(1,587)	(1,398)	(189)	(2,970)	(1,948)	(1,022)
Net income	$3,200	$2,946	$254	$5,973	$4,082	$1,891
Total comprehensive income	$3,117	$2,869	$248	$5,896	$3,805	$2,091

Net Interest Income

We have two primary sources of net interest income: (1) the guaranty fees we receive for managing the credit risk on loans underlying Fannie Mae MBS held by third parties; and (2) the difference between interest income earned on the assets in our retained mortgage portfolio and the interest expense associated with the debt that funds those assets.

Guaranty fees consist of two primary components: (1) base guaranty fees that we receive over the life of the loan; and (2) upfront fees that we receive at the time of loan acquisition, primarily related to single-family loan level pricing adjustments and other fees we receive from lenders, which are amortized over the contractual life of the loan. Guaranty fees include revenues generated by the 10 basis point increase in guaranty fees we implemented in 2012 pursuant to the TCCA, the incremental revenue from which is remitted to Treasury and not retained by us. We recognize almost all of our guaranty fee revenue in net interest income due to the consolidation of the substantial majority of loans underlying our Fannie Mae MBS in consolidated trusts on our balance sheet. Those guaranty fees are the primary component of the difference between the interest income on loans in consolidated trusts and the interest expense on the debt of consolidated trusts.

Fannie
Mae
Second
Quarter
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Table 2 displays an analysis of our net interest income, average balances, and related yields earned on assets and incurred on liabilities. For most components of the average balances, we 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. Table 3 displays the change in our net interest income between periods and the extent to which that variance is attributable to: (1) changes in the volume of our interest-earning assets and interest-bearing liabilities or (2) changes in the interest rates of these assets and liabilities.

Table 2: Analysis of Net Interest Income and Yield

	For the Three Months Ended June 30,							
	2017				2016			
	Average Balance	Interest Income/ Expense	Average Rates Earned/Paid		Average Balance	Interest Income/ Expense	Average Rates Earned/Paid	
	(Dollars in millions)							
Interest-earning assets:								
Mortgage loans of Fannie Mae	$190,255	$1,978	4.16	%	$232,722	$2,390	4.11	%
Mortgage loans of consolidated trusts	2,951,028	25,033	3.39		2,822,502	23,866	3.38	
Total mortgage loans[1]	3,141,283	27,011	3.44		3,055,224	26,256	3.44	
Mortgage-related securities, net	13,860	127	3.64		23,060	241	4.18	
Non-mortgage-related securities[2]	54,542	140	1.02		53,217	57	0.42	
Other[3]	41,344	115	1.10		26,781	46	0.68	
Total interest-earning assets	$3,251,029	$27,393	3.37	%	$3,158,282	$26,600	3.37	%
Interest-bearing liabilities:								
Short-term funding debt	$30,320	$56	0.73	%	$56,132	$56	0.40	%
Long-term funding debt	281,987	1,629	2.31		303,397	1,736	2.29	
Total funding debt	312,307	1,685	2.16		359,529	1,792	1.99	
Debt securities of consolidated trusts held by third parties	2,949,510	20,706	2.81		2,819,018	19,522	2.77	
Total interest-bearing liabilities	$3,261,817	$22,391	2.75	%	$3,178,547	$21,314	2.68	%
Net interest income/net interest yield		$5,002	0.62	%		$5,286	0.67	%

MD&A | Consolidated Results of Operations

	For the Six Months Ended June 30,							
	2017				2016			
	Average Balance	Interest Income/ Expense	Average Rates Earned/Paid		Average Balance	Interest Income/ Expense	Average Rates Earned/Paid	
	(Dollars in millions)							
Interest-earning assets:								
Mortgage loans of Fannie Mae	$195,302	$4,071	4.17	%	$235,338	$4,725	4.02	%
Mortgage loans of consolidated trusts	2,937,007	49,987	3.40		2,820,153	48,492	3.44	
Total mortgage loans(1)	3,132,309	54,058	3.45		3,055,491	53,217	3.48	
Total mortgage-related securities, net	14,627	269	3.66		24,821	510	4.11	
Non-mortgage-related securities(2)	55,264	241	0.87		51,737	111	0.43	
Other(3)	43,207	209	0.96		27,260	94	0.68	
Total interest-earning assets	$3,245,407	$54,777	3.38	%	$3,159,309	$53,932	3.41	%
Interest-bearing liabilities:								
Short-term funding debt	$31,381	$99	0.63	%	$58,109	$106	0.36	%
Long-term funding debt	285,894	3,315	2.32		311,170	3,590	2.31	
Total funding debt	317,275	3,414	2.15		369,279	3,696	2.00	
Total debt securities of consolidated trusts held by third parties	2,937,399	41,015	2.79		2,809,727	40,181	2.86	
Total interest-bearing liabilities	$3,254,674	$44,429	2.73	%	$3,179,006	$43,877	2.76	%
Net interest income/net interest yield		$10,348	0.64	%		$10,055	0.64	%

	As of June 30,	
	2017	2016
Selected benchmark interest rates		
3-month LIBOR	1.30%	0.65%
2-year swap rate	1.62	0.73
5-year swap rate	1.96	0.98
10-year swap rate	2.28	1.36
30-year Fannie Mae MBS par coupon rate	3.03	2.31

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(1) Average balance includes mortgage loans on nonaccrual status. Typically, interest income on nonaccrual mortgage loans is recognized when cash is received. Interest income not recognized for loans on nonaccrual status was $186 million and $402 million, respectively, for the second quarter and first half of 2017, compared with $321 million and $659 million, respectively, for the second quarter and first half of 2016.

(2) Includes cash equivalents.

(3) Consists of federal funds sold and securities purchased under agreements to resell or similar arrangements and advances to lenders.

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MD&A | Consolidated Results of Operations

Table 3: Rate/Volume Analysis of Changes in Net Interest Income

	For the Three Months Ended June 30, 2017 vs. 2016			For the Six Months Ended June 30, 2017 vs. 2016		
	Total	Variance Due to:[1]		Total	Variance Due to:[1]	
	Variance	Volume	Rate	Variance	Volume	Rate
	(Dollars in millions)					
Interest income:						
Mortgage loans of Fannie Mae	$(412)	$(441)	$29	$(654)	$(829)	$175
Mortgage loans of consolidated trusts	1,167	1,090	77	1,495	1,993	(498)
Total mortgage loans	755	649	106	841	1,164	(323)
Mortgage-related securities, net	(114)	(87)	(27)	(241)	(193)	(48)
Non-mortgage-related securities[2]	83	1	82	130	8	122
Other[3]	69	22	47	115	53	62
Total interest income	$793	$585	$208	$845	$1,032	$(187)
Interest expense:						
Short-term funding debt	—	(33)	33	(7)	(63)	56
Long-term funding debt	(107)	(124)	17	(275)	(293)	18
Total funding debt	(107)	(157)	50	(282)	(356)	74
Debt securities of consolidated trusts held by third parties	1,184	923	261	834	1,862	(1,028)
Total interest expense	$1,077	$766	$311	$552	$1,506	$(954)
Net interest income	$(284)	$(181)	$(103)	$293	$(474)	$767

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(1) Combined rate/volume variances are allocated to rate and volume based on the relative size of each variance.

(2) Includes cash equivalents.

(3) Consists of federal funds sold and securities purchased under agreements to resell or similar arrangements and advances to lenders.

Net interest income and net interest yield decreased in the second quarter of 2017 compared with the second quarter of 2016 due to a decline in the average balance of our retained mortgage portfolio as we continued to reduce this portfolio pursuant to the requirements of our senior preferred stock purchase agreement with Treasury and FHFA's additional portfolio cap. The decrease in net interest income was partially offset by a slight increase in guaranty fee income driven by (1) loans with higher base guaranty fees comprising a larger part of our guaranty book of business in the second quarter of 2017 compared with the second quarter of 2016; almost entirely offset by (2) a decrease in the amortization of upfront fees driven by lower prepayments on mortgage loans and liquidations of MBS debt of consolidated trusts, which reduced the amortization of cost basis adjustments on the loans and related debt.

Net interest income increased in the first half of 2017 compared with the first half of 2016 due to an increase in guaranty fee income driven by: (1) an increase in amortization income in the first half of 2017 due to activity related to increased prepayments on mortgage loans and liquidations of MBS debt of consolidated trusts, which accelerated the amortization of cost basis adjustments on the loans and related debt; and (2) loans with higher base guaranty fees comprising a larger part of our guaranty book of business in the first half of 2017 compared with the first half of 2016. The increase in net interest income due to higher guaranty fee income was partially offset by a decline in the average balance of our retained mortgage portfolio as we continued to reduce this portfolio. See "Retained Mortgage Portfolio" for information about our retained mortgage portfolio.

Fair Value Losses, Net

The estimated fair value of our derivatives and trading securities may fluctuate substantially from period to period because of changes in interest rates, credit spreads and interest rate volatility, as well as activity related to these financial instruments. While the estimated fair value of our derivatives that serve to mitigate certain risk exposures may fluctuate, some of the financial instruments that generate these exposures are not recorded at fair value in our condensed consolidated financial statements.

Table 4 displays the components of our fair value gains and losses.

Table 4: Fair Value Losses, Net

	For the Three Months Ended June 30,		For the Six Months Ended June 30,	
	2017	2016	2017	2016
	(Dollars in millions)			
Risk management derivatives fair value gains (losses) attributable to:				
Net contractual interest expense accruals on interest rate swaps	$(224)	$(291)	$(479)	$(560)
Net change in fair value during the period	(78)	(899)	289	(3,001)
Total risk management derivatives fair value losses, net	(302)	(1,190)	(190)	(3,561)
Mortgage commitment derivatives fair value losses, net	(192)	(367)	(272)	(729)
Total derivatives fair value losses, net	(494)	(1,557)	(462)	(4,290)
Trading securities gains, net	18	22	86	50
CAS debt fair value losses, net[1]	(169)	(168)	(331)	(228)
Other, net[2]	(46)	36	(24)	(12)
Fair value losses, net	$(691)	$(1,667)	$(731)	$(4,480)

(1) Consists of fair value losses on CAS debt reported at fair value.

(2) Consists of fair value gains and losses on non-CAS debt and mortgage loans.

Fair value losses in the second quarter and first half of 2017 were primarily driven by:

- decreases in the fair value of our pay-fixed risk management derivatives due to declines in longer-term swap rates during the second quarter;
- decreases in the fair value of our mortgage commitments due to losses on commitments to sell mortgage-related securities due to an increase in prices as interest rates decreased during the commitment periods; and
- fair value losses on CAS debt reported at fair value resulting from tightening spreads between CAS debt yields and LIBOR during the periods.

Fair value losses in the second quarter and first half of 2016 were primarily due to losses on risk management derivatives resulting from decreases in the fair value of our pay-fixed derivatives due to declines in longer-term swap rates during the second quarter and first half of 2016.

Credit-Related Income (Expense)

We refer to our benefit (provision) for loan losses and benefit (provision) for guaranty losses collectively as our “benefit (provision) for credit losses.” Credit-related income (expense) consists of our benefit (provision) for credit losses and foreclosed property income (expense).

Provision (Benefit) for Credit Losses

Our combined loss reserves provide for an estimate of credit losses incurred in our guaranty book of business, including concessions we granted borrowers upon modification of their loans. We establish our combined loss reserves through our provision for credit losses for losses that we believe have been incurred and will eventually be realized over time in our financial statements. When we reduce our combined loss reserves, we recognize a benefit for credit losses. When we determine that a loan is uncollectible, typically upon foreclosure or other liquidation event (such as a deed-in-lieu of foreclosure or a short sale), we recognize a charge-off against our

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combined loss reserves. For a subset of delinquent single-family loans, we charge off the portion of the loans that is deemed uncollectible prior to foreclosure when the loans have been delinquent for a specified length of time and meet specified mark-to-market LTV ratios. We also recognize a charge-off upon the redesignation of loans from HFI to HFS. If the amounts charged off upon redesignation exceed the allowance related to the loans, we record a provision for credit losses. If the amounts charged off are less than the allowance related to the loans, we recognize a benefit for credit losses. We record recoveries of previously charged-off amounts as a reduction to charge-offs.

Table 5 displays the changes in the combined loss reserves, which consists of the allowance for loan losses and the reserve for guaranty losses.

Table 5: Changes in Combined Loss Reserves

	For the Three Months Ended June 30,		For the Six Months Ended June 30,	
	2017	2016	2017	2016
	(Dollars in millions)			
Changes in combined loss reserves:				
Beginning balance	$22,526	$26,332	$23,835	$28,590
Benefit for credit losses	(1,267)	(1,601)	(1,663)	(2,785)
Charge-offs	(704)	(828)	(1,766)	(2,131)
Recoveries	179	164	298	329
Other	8	22	38	86
Ending balance	$20,742	$24,089	$20,742	$24,089

	As of	
	June 30, 2017	December 31, 2016
	(Dollars in millions)	
Allocation of combined loss reserves:		
Balance at end of each period attributable to:		
Single-family	$20,553	$23,639
Multifamily	189	196
Total	$20,742	$23,835

Single-family and multifamily

combined loss reserves as a percentage of applicable guaranty book of business:		
Single-family	0.72 %	0.83 %
Multifamily	0.07	0.08
Combined loss reserves as a percentage of:		
Total guaranty book of business	0.66 %	0.77 %
Recorded investment in nonaccrual loans	55.06	53.62

The amount of our provision or benefit for credit losses may vary from period to period based on a number of factors, such as changes in actual and expected home prices, fluctuations in interest rates, borrower payment behavior, the types and volumes of our loss mitigation activities, the volume of foreclosures completed, and redesignations of loans from HFI to HFS. In addition, our provision or benefit for credit losses and our combined loss reserves can be impacted by updates to the models, assumptions and data used in determining our allowance for loan losses.

The following factors contributed to our benefit for credit losses in the second quarter and first half of 2017:

- Actual and forecasted home prices increased in the period. Higher home prices decrease the likelihood that loans will default and reduce the amount of credit loss on loans that do default, which impacts our estimate of losses and ultimately reduces our combined loss reserves and provision for credit losses.

- We redesignated certain reperforming and nonperforming single-family loans from HFI to HFS during the period as we no longer intend to hold them to maturity. Upon redesignation of these loans, we recorded the loans at the lower of cost or fair value via a charge-off to the allowance for loan losses. Amounts recorded in the allowance related to the loans exceeded the amount charged off, contributing to the benefit for credit losses.

The following factors contributed to our benefit for credit losses in the second quarter and first half of 2016:

- Home prices, including distressed property valuations, increased during the second quarter and first half of 2016.
- Actual and projected mortgage interest rates declined during the second quarter and first half of 2016. As mortgage interest rates decline, we expect an increase in future prepayments on single-family individually impaired loans, including modified loans. Higher expected prepayments shorten the expected lives of modified loans, which decreases the impairment relating to concessions provided on these loans and results in a decrease in the provision for credit losses.

We discuss our expectations regarding our future loss reserves in "Executive Summary—Outlook—Loss Reserves."

Troubled Debt Restructurings and Nonaccrual Loans

Table 6 displays the composition of loans restructured in a troubled debt restructuring ("TDR") that are on accrual status and loans on nonaccrual status. The table includes our recorded investment in HFI and HFS mortgage loans. For information on the impact of TDRs and other individually impaired loans on our allowance for loan losses, see "Note 3, Mortgage Loans."

Table 6: Troubled Debt Restructurings and Nonaccrual Loans

	As of June 30, 2017	December 31, 2016
	(Dollars in millions)	
TDRs on accrual status:		
Single-family	$123,183	$127,353
Multifamily	95	141
Total TDRs on accrual status	$123,278	$127,494
Nonaccrual loans:		
Single-family	$37,331	$44,047
Multifamily	341	403
Total nonaccrual loans	$37,672	$44,450
Accruing on-balance sheet loans past due 90 days or more[(1)]	$304	$402

	For the Six Months Ended June 30, 2017	2016
	(Dollars in millions)	
Interest related to on-balance sheet TDRs and nonaccrual loans:		
Interest income forgone[(2)]	$1,781	$2,345
Interest income recognized for the period[(3)]	2,886	3,103

(1) Includes loans that, as of the end of each period, are 90 days or more past due and continuing to accrue interest. The majority of these amounts consists of loans insured or guaranteed by the U.S. government and loans for which we have recourse against the seller in the event of a default.

(2)

Represents the amount of interest income we did not recognize, but would have recognized during the period for nonaccrual loans and TDRs on accrual status as of the end of each period had the loans performed according to their original contractual terms.

(3) Represents interest income recognized during the period, including the amortization of any deferred cost basis adjustments, for loans classified as either nonaccrual loans or TDRs on accrual status as of the end of each period. Includes primarily amounts accrued while the loans were performing and cash payments received on nonaccrual loans.

Credit Loss Performance Metrics

Our credit-related income (expense) should be considered in conjunction with our credit loss performance metrics. Our credit loss performance metrics, however, are not defined terms within generally accepted accounting principles ("GAAP") and may not be calculated in the same manner as similarly titled measures reported by other companies. Because management does not view changes in the fair value of our mortgage loans as credit losses, we adjust our credit loss performance metrics for the impact associated with our acquisition of credit-impaired loans from unconsolidated MBS trusts. We also exclude interest forgone on nonaccrual loans and TDRs, other-than-temporary impairment losses resulting from deterioration in the credit quality of our mortgage-related securities and accretion of interest income on acquired credit-impaired loans from credit losses. We believe that credit loss performance metrics may be useful to investors as the losses are presented as a percentage of our book of business and have historically been used by analysts, investors and other companies within the financial services industry. Moreover, by presenting credit losses with and without the effect of fair value losses associated with the acquisition of credit-impaired loans, investors are able to evaluate our credit performance on a more consistent basis among periods. Table 7 displays the components of our credit loss performance metrics as well as our single-family and multifamily initial charge-off severity rates.

Table 7: Credit Loss Performance Metrics

	For the Three Months Ended June 30,				For the Six Months Ended June 30,			
	2017		2016		2017		2016	
	Amount	Ratio[1]	Amount	Ratio[1]	Amount	Ratio[1]	Amount	Ratio[1]
	(Dollars in millions)							
Charge-offs, net of recoveries	$525	6.7 bps	$664	8.8 bps	$1,468	9.4 bps	$1,802	11.8 bps
Foreclosed property expense	34	0.4	63	0.8	251	1.6	397	2.6
Credit losses including the effect of fair value losses on acquired credit-impaired loans	559	7.1	727	9.6	1,719	11.0	2,199	14.4
Plus: Impact of acquired credit-impaired loans on charge-offs and foreclosed property expense[2]	61	0.8	90	1.1	122	0.8	190	1.3
Credit losses and credit loss ratio	$620	7.9 bps	$817	10.7 bps	$1,841	11.8 bps	$2,389	15.7 bps
Credit losses attributable to:								
Single-family	$618		$812		$1,839		$2,381	
Multifamily	2		5		2		8	
Total	$620		$817		$1,841		$2,389	
Single-family initial charge-off severity rate[3]		13.6%		17.3%		15.9%		21.4%
Multifamily initial charge-off severity rate[3][4]		— %		1.0 %		— %		12.3%

(1) Basis points are based on the annualized amount for each line item presented divided by the average guaranty book of business during the period.

(2) Includes fair value losses from acquired credit-impaired loans.

(3) Single-family and multifamily rates exclude fair value losses on credit-impaired loans acquired from MBS trusts and any costs, gains or losses associated with real estate owned ("REO") after initial acquisition through final disposition. The single-family rate includes charge-offs pursuant to the provisions of FHFA's Advisory Bulletin 2012-02, "Framework for Adversely Classifying Loans, Other Real Estate Owned, and Other Assets and Listing Assets for Special Mention" and charge-offs of property tax and insurance receivables, while it excludes charge-offs from short sales and third-party sales. Multifamily rate is net of risk sharing agreements.

(4)

Reflects two loans in the second quarter of 2017 and three loans in the first half of 2017 that were foreclosed without any credit losses.

Credit losses and our credit loss ratio decreased in the second quarter and first half of 2017 compared with the second quarter and first half of 2016 primarily due to lower charge-offs as a result of lower delinquencies.
We discuss our expectations regarding our future credit losses in "Executive Summary—Outlook—Credit Losses."
Table 8 displays concentrations of our single-family credit losses based on geography, credit characteristics and loan vintages.
Table 8: Credit Loss Concentration Analysis

	Percentage of Single-Family Conventional Guaranty Book of Business Outstanding[1]			Percentage of Single-Family Credit Losses[2]			
	As of			For the Three Months Ended June 30,		For the Six Months Ended June 30,	
	June 30,	December 31,	June 30,				
	2017	2016	2016	2017	2016	2017	2016
Geographical Distribution:							
California	19%	19 %	20%	12%	1 %	9 %	2 %
Florida	6	6	6	14	4	13	8
Illinois	4	4	4	10	8	9	8
New Jersey	4	4	4	14	19	13	18
New York	5	5	5	9	19	11	22
All other states	62	62	61	41	49	45	42
Select higher-risk product features[3]	21	21	22	73	57	62	58
Vintages:[4]							
2004 and prior	4	5	5	3	16	10	17
2005 - 2008	7	8	9	69	59	67	65
2009 - 2017	89	87	86	28	25	23	18

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(1) Calculated based on the unpaid principal balance of loans, where we have detailed loan level information, for each category divided by the unpaid principal balance of our single-family conventional guaranty book of business as of the end of each period.

(2) Excludes the impact of recoveries resulting from resolution agreements related to representation and warranty matters and compensatory fee income related to servicing matters that have not been allocated to specific loans.

(3) Includes Alt-A loans, subprime loans, interest-only loans, loans with original LTV ratios greater than 90% and loans with FICO® scores less than 620.

(4) Credit losses on mortgage loans typically do not peak until the third through sixth years following origination; however, this range can vary based on many factors, including changes in macroeconomic conditions and foreclosure timelines.

As shown in Table 8, the majority of our credit losses for the second quarter and first half of 2017 continued to be driven by loans originated in 2005 through 2008. The percentage of our credit losses in California and Florida were higher in the second quarter and the first half of 2017 compared with the second quarter and first half of 2016 because a large portion of the reperforming loans that were redesignated as HFS and charged-off in the second quarter and first half of 2017 related to properties in those states. We provide more detailed single-family credit performance information, including serious delinquency rate share and foreclosure activity, in “Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management.”

Temporary Payroll Tax Cut Continuation Act of 2011 (“TCCA”) Fees

Pursuant to the TCCA, in 2012, FHFA directed us to increase our single-family guaranty fees by 10 basis points and remit this increase to Treasury. This TCCA-related revenue is included in “Net interest income” and the expense is recognized as “TCCA fees.” TCCA fees increased in the second quarter and first half of 2017 compared with the second quarter and first half of 2016 as our book of business subject to the TCCA continued to grow. We expect the guaranty fees collected and expenses incurred under the TCCA to continue to increase in the future.

Consolidated Balance Sheet Analysis

This section provides a discussion of our condensed consolidated balance sheets and should be read together with our condensed consolidated financial statements, including the accompanying notes.

Table 9: Summary of Condensed Consolidated Balance Sheets

	As of		
	June 30, 2017	December 31, 2016	Variance
	(Dollars in millions)		
Assets			
Cash and cash equivalents and federal funds sold and securities purchased under agreements to resell or similar arrangements	$46,124	$55,639	$(9,515)
Restricted cash	30,999	36,953	(5,954)
Investments in securities[1]	45,682	48,925	(3,243)
Mortgage loans:			
Of Fannie Mae	185,635	207,190	(21,555)
Of consolidated trusts	2,960,179	2,896,028	64,151
Allowance for loan losses	(20,399)	(23,465)	3,066
Mortgage loans, net of allowance for loan losses	3,125,415	3,079,753	45,662
Deferred tax assets, net	31,402	33,530	(2,128)
Other assets	29,608	33,168	(3,560)
Total assets	$3,309,230	$3,287,968	$21,262
Liabilities and equity			
Debt:			
Of Fannie Mae	$303,120	$327,097	$(23,977)
Of consolidated trusts	2,984,547	2,935,219	49,328
Other liabilities	17,846	19,581	(1,735)
Total liabilities	3,305,513	3,281,897	23,616
Equity	3,717	6,071	(2,354)
Total liabilities and equity	$3,309,230	$3,287,968	$21,262

(1) Includes $32.4 billion as of June 30, 2017 and $32.3 billion as of December 31, 2016 of U.S. Treasury securities that are included in our other investments portfolio.

Cash and Other Investments Portfolio

Our cash and other investments portfolio consists of cash and cash equivalents, securities purchased under agreements to resell or similar arrangements, and investments in U.S. Treasury securities. See "Liquidity and Capital Management—Liquidity Management—Cash and Other Investments Portfolio" for additional information on our cash and other investments portfolio.

Restricted Cash

Restricted cash primarily includes unscheduled borrower payments received by servicers of loans backing consolidated trusts due to be remitted to the MBS certificateholders in the subsequent month. Our restricted cash decreased as of June 30, 2017 compared with the balance as of December 31, 2016 primarily as a result of a decrease in prepayments received on mortgage loans in June 2017 compared with prepayments received in December 2016.

Investments in Mortgage-Related Securities

Our investments in mortgage-related securities are classified in our condensed consolidated balance sheets as either trading or available-for-sale and are measured at fair value. Table 10 displays the fair value of our investments in trading and available-for-sale mortgage-related securities. We classify private-label securities as Alt-A, subprime or commercial mortgage-backed securities ("CMBS") if the securities were labeled as such when issued. We have also invested in subprime private-label mortgage-related securities that we have resecuritized to include our guaranty.

Table 10: Summary of Mortgage-Related Securities at Fair Value

	As of June 30, 2017	December 31, 2016
	(Dollars in millions)	
Mortgage-related securities:		
Fannie Mae	$6,549	$ 7,323
Other agency	2,401	2,605
Alt-A and subprime private-label securities	2,755	3,345
CMBS	275	1,580
Mortgage revenue bonds	874	1,293
Other mortgage-related securities	410	462
Total	$13,264	$ 16,608

The decrease in mortgage-related securities at fair value from December 31, 2016 to June 30, 2017 was primarily driven by liquidations and sales of securities.

See "Note 5, Investments in Securities" for additional information on our investments in mortgage-related securities, including the composition of our trading and available-for-sale securities at amortized cost and fair value and the gross unrealized gains and losses related to our available-for-sale securities as of June 30, 2017 and December 31, 2016.

Mortgage Loans and Allowance for Loan Losses

The increase in mortgage loans, net of allowance, from December 31, 2016 to June 30, 2017 was driven by an increase in mortgage loans of consolidated trusts as we continued to add to our guaranty book of business through securitization activity. Partially offsetting this was a decline in mortgage loans of Fannie Mae resulting from liquidations, portfolio securitizations and sales. For additional information on our mortgage loans, see "Note 3, Mortgage Loans."

The decrease in our allowance for loan losses from December 31, 2016 to June 30, 2017 was driven primarily by the redesignations of loans from HFI to HFS, liquidations and an increase in actual and forecasted home prices. See "Consolidated Results of Operations—Credit-Related Income (Expense)—Provision (Benefit) for Credit Losses" for more information.

Other Assets

The decrease in other assets from December 31, 2016 to June 30, 2017 was primarily driven by a decrease in advances to lenders as a result of lower lender funding needs. For additional information on our accounting policy for advances to lenders, refer to "Note 1, Summary of Significant Accounting Policies" in our 2016 Form 10-K.

Debt

Debt of Fannie Mae is the primary means of funding our mortgage acquisitions. Debt of consolidated trusts represents the amount of Fannie Mae MBS issued from consolidated trusts and held by third-party certificateholders. We provide a summary of the activity of the debt of Fannie Mae and a comparison of the mix between our outstanding short-term and long-term debt in "Liquidity and Capital Management—Liquidity Management—Debt Funding." Also see "Note 7, Short-Term Borrowings and Long-Term Debt" for additional information on our outstanding debt.

The decrease in debt of Fannie Mae from December 31, 2016 to June 30, 2017 was primarily driven by lower funding needs, as our retained mortgage portfolio decreased. The increase in debt of consolidated trusts from

December 31, 2016 to June 30, 2017 was primarily driven by sales of Fannie Mae MBS, which are accounted for as issuances of debt of consolidated trusts in our condensed consolidated balance sheets, since the MBS certificate ownership is transferred from us to a third party.

Stockholders' Equity

Our net equity decreased as of June 30, 2017 compared with December 31, 2016 due to our payments of senior preferred stock dividends to Treasury during the first half of 2017, partially offset by our comprehensive income recognized during the first half of 2017.

Retained Mortgage Portfolio

Our retained mortgage portfolio consists of mortgage loans and mortgage-related securities that we own and includes Fannie Mae MBS and non-Fannie Mae mortgage-related securities. Assets held by consolidated MBS trusts that back mortgage-related securities owned by third parties are not included in our retained mortgage portfolio.

The amount of mortgage assets that we may own is restricted by our senior preferred stock purchase agreement with Treasury and FHFA's additional cap, as described in "Business—Conservatorship and Treasury Agreements—Treasury Agreements" in our 2016 Form 10-K. We plan to reduce our retained mortgage portfolio to no more than the FHFA cap of $259.6 billion as of December 31, 2017, which also would be in compliance with the senior preferred stock purchase agreement cap of $288.4 billion. Table 11 displays the unpaid principal balance of our retained mortgage portfolio.

Table 11: Retained Mortgage Portfolio

	As of June 30, 2017	As of December 31, 2016
	(Dollars in millions)	
Single-family:		
Mortgage loans(1)	$163,411	$181,219
Reverse mortgages	28,047	29,443
Mortgage-related securities:		
Agency securities(2)	34,874	25,667
Fannie Mae-wrapped reverse mortgage securities	7,064	7,420
Other Fannie Mae-wrapped securities	3,613	3,773
Private-label and other securities	4,009	4,980
Total single-family mortgage-related securities(3)	49,560	41,840
Total single-family mortgage loans and mortgage-related securities	241,018	252,502
Multifamily:		
Mortgage loans(4)	5,736	9,407
Mortgage-related securities:		
Agency securities(2)	7,985	7,693
CMBS	276	1,567
Mortgage revenue bonds	783	1,185
Total multifamily mortgage-related securities(5)	9,044	10,445
Total multifamily mortgage loans and mortgage-related securities	14,780	19,852
Total retained mortgage portfolio	$255,798	$272,354

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(1) Includes single-family loans restructured in a TDR that were on accrual status of $103.5 billion and $119.4 billion as of June 30, 2017 and December 31, 2016, respectively, and single-family loans on nonaccrual status of $33.3 billion and $38.7 billion as of June 30, 2017 and December 31, 2016, respectively.

(2) Includes Fannie Mae, Freddie Mac and Ginnie Mae mortgage-related securities, excluding Fannie Mae-wrapped reverse mortgage securities and other Fannie Mae-wrapped securities.

(3) The fair value of these single-family mortgage-related securities was $51.6 billion and $42.9 billion as of June 30, 2017 and December 31, 2016, respectively.

(4) Includes multifamily loans restructured in a TDR that were on accrual status of $89 million and $131 million as of June 30, 2017 and December 31, 2016, respectively, and multifamily loans on nonaccrual status of $171 million and $246 million as of June 30, 2017 and December 31, 2016, respectively.

(5) The fair value of these multifamily mortgage-related securities was $9.7 billion and $11.2 billion as of June 30, 2017 and December 31, 2016, respectively.

In support of our loss mitigation strategy, we purchased $6.2 billion of loans from our single-family MBS trusts in the first half of 2017, the substantial majority of which were delinquent. See “Business—Mortgage Securitizations—Purchases of Loans from Our MBS Trusts” in our 2016 Form 10-K for more information relating to our purchases of loans from MBS trusts.

We primarily use our retained mortgage portfolio to: (1) provide liquidity to the mortgage market and (2) support our loss mitigation activities. Previously, we also used our retained mortgage portfolio for investment purposes.

Table 12 below separates the instruments within our retained mortgage portfolio by unpaid principal balance into three categories based on each instrument’s use. “Lender liquidity,” which includes balances related to our whole loan conduit activity, supports our efforts to provide liquidity to the Single-Family and Multifamily mortgage markets. “Loss mitigation” supports our loss mitigation efforts through the purchase of delinquent loans from MBS trusts. “Other” represents assets that were previously purchased for investment purposes. More than half of the balance of “Other” consisted of reverse mortgage loans and Fannie Mae-wrapped reverse mortgage securities as of June 30, 2017 and December 31, 2016.

Table 12: Retained Mortgage Portfolio Profile

	As of June 30, 2017				December 31, 2016			
	Single-Family	Multifamily	Total	% of Mortgage Credit Book of Business	Single-Family	Multifamily	Total	% of Mortgage Credit Book of Business
	(Dollars in millions)							
Lender liquidity	$49,956	$ 7,985	$57,941	2 %	$36,272	$ 7,694	$43,966	2 %
Loss mitigation	141,973	260	142,233	4	164,028	376	164,404	5
Other	49,089	6,535	55,624	2	52,202	11,782	63,984	2
Total	$241,018	$ 14,780	$255,798	8 %	$252,502	$ 19,852	$272,354	9 %

Mortgage Credit Book of Business

Table 13 displays the composition of our mortgage credit book of business based on unpaid principal balance. Our single-family mortgage credit book of business accounted for 92% of our mortgage credit book of business as of June 30, 2017 and December 31, 2016. While our mortgage credit book of business includes all of our mortgage-related assets, both on- and off-balance sheet, our guaranty book of business excludes non-Fannie Mae mortgage-related securities held in our retained mortgage portfolio for which we do not provide a guaranty.

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Table 13: Composition of Mortgage Credit Book of Business

	As of					
	June 30, 2017			December 31, 2016		
	Single-Family	Multifamily	Total	Single-Family	Multifamily	Total
	(Dollars in millions)					
Mortgage loans and Fannie Mae MBS(1)	$2,865,372	$ 244,701	$3,110,073	$2,838,086	$ 229,896	$3,067,982
Unconsolidated Fannie Mae MBS, held by third parties(2)	7,014	1,096	8,110	7,795	1,159	8,954
Other credit guarantees(3)	2,004	12,628	14,632	2,193	13,142	15,335
Guaranty book of business	$2,874,390	$ 258,425	$3,132,815	$2,848,074	$ 244,197	$3,092,271
Other agency mortgage-related securities(4)	2,286	—	2,286	2,500	—	2,500
Other mortgage-related securities(5)	4,009	1,059	5,068	4,980	2,752	7,732
Mortgage credit book of business	$2,880,685	$ 259,484	$3,140,169	$2,855,554	$ 246,949	$3,102,503
Guaranty Book of Business Detail:						
Conventional Guaranty Book of Business(6)	$2,831,398	$ 257,129	$3,088,527	$2,802,572	$ 242,834	$3,045,406
Government Guaranty Book of Business(7)	$42,992	$ 1,296	$44,288	$45,502	$ 1,363	$46,865

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(1) Consists of mortgage loans and Fannie Mae MBS recognized in our condensed consolidated balance sheets. The principal balance of resecuritized Fannie Mae MBS is included only once in the reported amount.

(2) The principal balance of resecuritized Fannie Mae MBS is included only once in the reported amount.

(3) Consists of single-family and multifamily credit enhancements that we have provided and that are not otherwise reflected in the table.

(4) Consists of mortgage-related securities issued by Freddie Mac and Ginnie Mae.

(5) Primarily includes mortgage revenue bonds, Alt-A and subprime private-label securities, and CMBS.

(6) Consists of mortgage loans and mortgage-related securities that are not guaranteed or insured, in whole or in part, by the U.S. government or one of its agencies.

(7) Consists of mortgage loans and mortgage-related securities guaranteed or insured, in whole or in part, by the U.S. government or one of its agencies.

The Federal Housing Enterprises Financial Safety and Soundness Act of 1992, as amended by the Federal Housing Finance Regulatory Reform Act of 2008 (together, the “GSE Act”), requires us to set aside each year an amount equal to 4.2 basis points for each dollar of the unpaid principal balance of our total new business purchases and to pay this amount to specified U.S. Department of Housing and Urban Development (“HUD”) and Treasury funds. New business purchases consist of single-family and multifamily whole mortgage loans purchased during the period and single-family and multifamily mortgage loans underlying Fannie Mae MBS issued during the period pursuant to lender swaps. In February 2017, we paid $268 million to the funds based on our new business purchases in 2016. Our new business purchases were $270.9 billion in the first half of 2017. Accordingly, we recognized an expense of $114 million related to this obligation for the first half of 2017. We expect to pay this amount, plus additional amounts to be accrued based on our new business purchases in the second half of 2017, to the funds on or before March 1, 2018. See “Business—Legislation and Regulation—GSE Act and Other Regulation of Our Business—Affordable Housing Allocations” i our 2016 Form 10-K for more information regarding this obligation.

Business Segments Overview

We have two reportable business segments: Single-Family and Multifamily. Previously, we had a third reportable business segment, Capital Markets, which was incorporated into the Single-Family and Multifamily segments in the fourth quarter of 2016. Results of our two business segments are intended to reflect each segment as if it were a stand-alone business. We have revised the presentation of our segment results for the prior periods to be consistent with the current period presentation.

This section describes the following for each of our business segments:

- market conditions relating to the business segment;
- the segment's business and financial results; and
- credit risk management relating to the business segment.

This section should be read together with our comparative discussion of our condensed consolidated results of operations in "Consolidated Results of Operations."

Single-Family Business

Single-Family Housing and Mortgage Market and Economic Conditions

According to the U.S. Bureau of Economic Analysis advance estimate, the inflation-adjusted U.S. gross domestic product, or GDP, rose by 2.6% on an annualized basis in the second quarter of 2017, compared with an increase of 1.2% in the first quarter of 2017. The overall economy gained an estimated 2.2 million non-farm jobs in the second quarter of 2017. According to the U.S. Bureau of Labor Statistics, over the 12 months ending in June 2017, the economy created an estimated 581,000 non-farm jobs. The unemployment rate was 4.4% in June 2017, compared with 4.5% in March 2017.

According to the Federal Reserve, total U.S. residential mortgage debt outstanding, which includes $10.3 trillion of single-family debt outstanding, was estimated to be approximately $11.5 trillion as of March 31, 2017 (the latest date for which information is available) and December 31, 2016.

We forecast that total originations in the U.S. single-family mortgage market in 2017 will decrease from 2016 levels by approximately 20% from an estimated $2.05 trillion in 2016 to $1.65 trillion in 2017, and that the amount of originations in the U.S. single-family mortgage market that are refinancings will decrease from an estimated $991 billion in 2016 to $566 billion in 2017.

Housing sales remained relatively flat in the second quarter of 2017 compared with the first quarter of 2017. Total existing home sales averaged 5.6 million units annualized in the first and second quarter of 2017, according to data from the National Association of REALTORS®. Sales of foreclosed homes and preforeclosure, or "short," sales (together, "distressed sales") accounted for 4.0% of existing home sales in June 2017, compared with 6.0% in March 2017 and June 2016. According to the U.S. Census Bureau, new single-family home sales decreased during the second quarter of 2017, averaging an annualized rate of 597,000 units, a 3.2% decrease from the first quarter of 2017.

The number of months' supply, or the inventory/sales ratio, of available existing homes and of new homes were each below their historical average at the end of the second quarter of 2017. According to the U.S. Census Bureau, the months' supply of new single-family unsold homes was 5.4 months as of June 30, 2017, compared with 5.0 months as of March 31, 2017. According to the National Association of REALTORS®, the months' supply of existing unsold homes was 4.3 months as of June 30, 2017, compared with 3.8 months as of March 31, 2017.

The overall mortgage market serious delinquency rate fell to 2.8% as of March 31, 2017 (the latest date for which information is available), according to the Mortgage Bankers Association's National Delinquency Survey, compared with 3.3% as of March 31, 2016. We provide information about Fannie Mae's serious delinquency rate in "Single-Family Mortgage Credit Risk Management" below.

Based on our home price index, we estimate that home prices on a national basis increased by 2.6% in the second quarter of 2017 and by 3.7% in the first half of 2017, following increases of 5.8% in 2016, 4.6% in 2015 and 4.2% in

2014. We estimate that, in the second quarter of 2017, home prices on a national basis surpassed

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the peak previously reached in the third quarter of 2006 for the first time, exceeding the previous 2006 peak by an estimated 2.4%. Our home price estimates are based on preliminary data and are subject to change as additional data become available.

Thirty-year fixed-rate mortgage rates ended the quarter at 3.88% for the week of June 30, 2017, down from 4.14% for the week of March 31, 2017, according to Freddie Mac's Primary Mortgage Market Survey®.

Single-Family Business Metrics

Table 14: Single-Family Business Key Performance Data

	For the Three Months Ended June 30,		For the Six Months Ended June 30,	
	2017	2016	2017	2016
	(Dollars in millions)			
Securitization Activity/New Business				
Single-family Fannie Mae MBS issuances	$120,724	$132,086	$248,515	$233,883
Single-family Fannie Mae MBS outstanding, at end of period	$2,713,903	$2,628,583	$2,713,903	$2,628,583
Portfolio Data				
Single-family retained mortgage portfolio, at end of period	$241,018	$291,709	$241,018	$291,709
Credit Guaranty Activity				
Average single-family guaranty book of business[1]	$2,870,396	$2,821,243	$2,862,955	$2,824,069
Average charged guaranty fee on single-family guaranty book of business:[2]				
Fee, net of TCCA fees (in basis points)[3]	42.1	40.7	41.9	40.5
Total fee (in basis points)	49.4	47.2	49.2	46.9
Average charged guaranty fee on new single-family acquisitions:[4]				
Fee, net of TCCA fees (in basis points)[3]	48.0	47.2	48.3	48.1
Total fee (in basis points)	58.0	57.2	58.3	58.1
Single-family credit loss ratio (in basis points)[5]	8.6	11.5	12.8	16.9
Single-family serious delinquency rate, at end of period[6]	1.01 %	1.32 %	1.01 %	1.32 %

(1) Our single-family guaranty book of business consists of (a) single-family mortgage loans of Fannie Mae, (b) single-family mortgage loans underlying Fannie Mae MBS, and (c) other credit enhancements that we provide on single-family mortgage assets, such as long-term standby commitments. It excludes non-Fannie Mae single-family mortgage-related securities held in our retained mortgage portfolio for which we do not provide a guaranty.

(2) Calculated based on the average guaranty fee rate for our single-family guaranty arrangements outstanding during the period plus the recognition of any upfront cash payments over an estimated average life.

(3) Excludes the impact of a 10 basis point guaranty fee increase implemented in 2012 pursuant to the TCCA, the incremental revenue from which is remitted to Treasury and not retained by us.

(4) Calculated based on the average guaranty fee rate for our single-family guaranty arrangements entered into during the period plus the recognition of any upfront cash payments over an estimated average life.

(5) Calculated based on single-family segment credit losses divided by the average single-family guaranty book of business.

(6) Calculated based on the number of single-family conventional loans that are 90 days or more past due or in the foreclosure process, divided by the number of loans in our single-family conventional guaranty book of business.

Our single-family Fannie Mae MBS issuances decreased in the second quarter of 2017 compared with the second quarter of 2016, driven primarily by a decrease in refinance activity partially offset by an increase in our acquisition of

home purchase mortgage loans in the second quarter of 2017.
Our single-family Fannie Mae MBS issuances increased in the first half of 2017 compared with the first half of 2016, driven primarily by an increase in our acquisition of home purchase mortgage loans partially offset by a decrease in refinance activity in the first half of 2017.

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Single-Family Business Financial Results

Table 15: Single-Family Business Financial Results

	For the Three Months Ended June 30,			For the Six Months Ended June 30,		
	2017	2016	Variance	2017	2016	Variance
	(Dollars in millions)					
Net interest income[1]	$4,366	$4,730	$ (364)	$9,122	$8,975	$ 147
Fee and other income	111	78	33	187	145	42
Net revenues	4,477	4,808	(331)	9,309	9,120	189
Investment gains, net	321	280	41	271	336	(65)
Fair value losses, net	(685)	(1,679)	994	(697)	(4,529)	3,832
Administrative expenses	(600)	(597)	(3)	(1,201)	(1,206)	5
Credit-related income[2]	1,223	1,535	(312)	1,407	2,363	(956)
TCCA fees[1]	(518)	(453)	(65)	(1,021)	(893)	(128)
Other expenses, net	(155)	(252)	97	(411)	(498)	87
Income before federal income taxes	4,063	3,642	421	7,657	4,693	2,964
Provision for federal income taxes	(1,401)	(1,254)	(147)	(2,653)	(1,643)	(1,010)
Net income	$2,662	$2,388	$ 274	$5,004	$3,050	$ 1,954

(1) Reflects the impact of a 10 basis point guaranty fee increase implemented in 2012 pursuant to the TCCA, the incremental revenue from which is remitted to Treasury. The resulting revenue is included in net interest income and the expense is recognized as "TCCA fees."

(2) Consists of the benefit for credit losses and foreclosed property expense.

Single-family net income increased in the second quarter and first half of 2017 compared with the second quarter and first half of 2016. The increase in net income in the second quarter of 2017 compared with the second quarter of 2016 was primarily due to lower fair value losses, partially offset by lower net interest income and lower credit-related income. The increase in net income in the first half of 2017 compared with the first half of 2016 was primarily due to lower fair value losses, partially offset by lower credit-related income.

Single-family net interest income decreased in the second quarter of 2017 compared with the second quarter of 2016, primarily due to a decline in the average balance of our retained mortgage portfolio partially offset by a slight increase in single-family guaranty fee income. Single-family net interest income increased in the first half of 2017 compared with the first half of 2016 due to an increase in single-family guaranty fee income, which was partially offset by a decline in the average balance of our retained mortgage portfolio. The drivers of net interest income for the single-family segment are consistent with the drivers of net interest income reported in our condensed consolidated statements of operations and comprehensive income. See "Consolidated Results of Operations—Net Interest Income" for more information on the drivers of our net interest income.

Fair value losses decreased in the second quarter and first half of 2017 compared with the second quarter and first half of 2016. The fair value losses that are reported for the single-family segment are consistent with the fair value losses reported in our condensed consolidated statements of operations and comprehensive income. We discuss our fair value gains and losses in "Consolidated Results of Operations—Fair Value Losses, Net."

We recognized lower single-family credit-related income in the second quarter and first half of 2017 compared with the second quarter and first half of 2016. Credit-related income in the second quarter and first half of 2017 was driven by an increase in actual and forecasted home prices and the redesignation of loans from HFI to HFS. Credit-related income in the second quarter and first half of 2016 was primarily attributable to an increase in home prices and a decline in actual and projected mortgage interest rates. See "Consolidated Results of Operations—Credit-Related Income (Expense)" for more information on the drivers of our credit-related income.

Single-Family Mortgage Credit Risk Management

Our strategy in managing single-family mortgage credit risk consists of five primary components:

- our acquisition and servicing policies along with our underwriting and servicing standards;

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- the transfer of credit risk through credit risk transfer transactions and the use of credit enhancements;
- portfolio diversification and monitoring;
- management of problem loans; and
- real estate owned ("REO") management.

This section updates our discussion of single-family mortgage credit risk management in our 2016 Form 10-K in "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management." For additional information on how we manage risk, see "MD&A—Risk Management" and "Risk Factors" in our 2016 Form 10-K.

The single-family credit statistics we focus on and report below generally relate to our single-family conventional guaranty book of business, which represents the substantial majority of our total single-family guaranty book of business. We exclude from these credit statistics approximately 1% of our single-family conventional guaranty book of business for which our loan level information is incomplete as of June 30, 2017 and December 31, 2016. We typically obtain this data from the sellers or servicers of the mortgage loans in our guaranty book of business and receive representations and warranties from them as to the accuracy of the information. While we perform various quality assurance checks by sampling loans to assess compliance with our underwriting and eligibility criteria, we do not independently verify all reported information. We rely on a combination of data verification tools we make available to lenders and lender representations regarding the accuracy of the characteristics of loans in our guaranty book of business. See "Risk Factors" in our 2016 Form 10-K for a discussion of the risk that we could experience mortgage fraud as a result of this reliance on lender representations. We provide information on non-Fannie Mae mortgage-related securities held in our portfolio in "Note 5, Investments in Securities."

Single-Family Acquisition and Servicing Policies and Underwriting and Servicing Standards

For an overview and additional information on our quality control process, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Acquisition and Servicing Policies and Underwriting and Servicing Standards" in our 2016 Form 10-K.

Recent Changes

Desktop Underwriter® (DU®), our proprietary automated underwriting system, is used by mortgage lenders for a comprehensive assessment of a borrower's loan application. In July 2017, we implemented a number of changes to DU, including the following.

Debt-to-income ratio assessment update. DU's risk assessment is a model-based assessment of a borrower's willingness and ability to repay the loan. DU also includes eligibility overlays that can deem the loan ineligible for delivery to us, regardless of the result from the model-based assessment. Under the prior version of DU, loans with a debt-to-income ratio between 45% and 50% that received an "Approve" recommendation from DU's risk assessment were ineligible for delivery to us unless the loan also had certain compensating factors. Under the current version of DU, this eligibility overlay has been removed; loans with a debt-to-income ratio between 45% and 50% that receive an "Approve" recommendation in DU are now eligible for delivery to us without the additional compensating factors noted above. This change was made possible by a re-estimation of the DU risk assessment that delivers a more accurate evaluation of loans in this debt-to-income ratio range.

We expect a small increase in the average risk of our monthly loan acquisitions as a result of this change. However, the risk associated with these acquisitions is still within the same risk tolerance threshold used in the prior version of DU that determined whether a loan received an "Approve" recommendation. Also, loans with debt-to-income ratios above 50% remain ineligible for delivery to us under the current version of DU.

Adjustable-rate mortgage LTV ratios. The maximum allowable LTV ratios for adjustable-rate mortgages were increased to align with fixed-rate mortgage maximum LTV ratios for all transaction, occupancy and property types, up to a maximum of 95%.

Self-employment income documentation. The criteria used by DU to determine the level of documentation required to verify a self-employed borrower's income has been updated. This will increase the number of self-employed borrowers eligible to provide one year (instead of two years) of personal and business tax return documentation.

Repurchase Requests

If we determine that a mortgage loan did not meet our underwriting or eligibility requirements, loan representations or warranties were violated or a mortgage insurer rescinded coverage, then our mortgage sellers and/or servicers are obligated to either repurchase the loan or foreclosed property, reimburse us for our losses or provide other remedies, unless the loan is eligible for representation and warranty relief as described below. We collectively refer to our demands that mortgage sellers and servicers meet these obligations as repurchase requests. The unpaid principal balance of single-family loans that are subject to a repurchase request has declined significantly since we strengthened our underwriting standards in late 2008 and 2009, implemented changes to our quality control process in 2013 and implemented our revised representation and warranty framework described below. As of June 30, 2017, we had issued repurchase requests on approximately 0.10% of the $532.9 billion of unpaid principal balance of single-family loans delivered to us during the twelve months ended October 2016. Our total outstanding repurchase requests were $246 million as of June 30, 2017, compared with $303 million as of December 31, 2016.

Representation and Warranty Relief

We implemented a revised representation and warranty framework in 2013 to provide lenders with a higher degree of certainty and clarity regarding their exposure to repurchase requests on future deliveries, as well as greater consistency around repurchase timelines and remedies. This framework was further revised in 2014. Under the framework, lenders are relieved of certain repurchase liabilities for loans that meet specific requirements. In addition, through our Day 1 Certainty™ initiative we have developed new tools that enable lenders to obtain relief from certain representations and warranties at an earlier date than provided for under the framework. For information on our representation and warranty framework and our Day 1 Certainty initiative, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Acquisition and Servicing Policies and Underwriting and Servicing Standards—Representation and Warranty Relief" in our 2016 Form 10-K.

As of June 30, 2017, approximately 52% of the outstanding loans in our single-family conventional guaranty book of business were acquired after January 1, 2013 and are subject to the revised representation and warranty framework, compared with 48% as of December 31, 2016. Table 16 below displays information regarding the relief status of single-family conventional loans, based only on payment history or the satisfactory conclusion of a full-file quality control review, delivered to us beginning in 2013 under the revised representation and warranty framework.

Table 16: Representation and Warranty Status of Single-Family Conventional Loans Acquired in 2013-2017

	As of June 30, 2017					
	Refi Plus		Non-Refi Plus		Total	
	Unpaid Principal Balance	Number of Loans	Unpaid Principal Balance	Number of Loans	Unpaid Principal Balance	Number of Loans
	(Dollars in millions)					
Single-family conventional loans that:						
Obtained relief	$167,505	1,218,471	$395,852	2,146,402	$563,357	3,364,873
Remain eligible for relief	22,349	147,011	1,129,173	5,246,803	1,151,522	5,393,814
Are not eligible for relief	4,446	29,764	15,841	85,246	20,287	115,010
Total outstanding loans acquired since January 1, 2013	$194,300	1,395,246	$1,540,866	7,478,451	$1,735,166	8,873,697

As of June 30, 2017, approximately 38% of loans acquired under the revised representation and warranty framework had obtained relief, compared with 37% as of December 31, 2016. Providing lenders with relief from repurchasing loans for breaches of certain representations and warranties on loans that meet specified eligibility requirements shifts some of the risk of non-compliance with our requirements back to us. However, we believe that we have taken appropriate steps to mitigate this risk, including moving the primary focus and timing of our quality control reviews to shortly after loan delivery. We also retain the right to review all loans, including reviews for any violations of "life of loan” representations and warranties.

Transfer of Mortgage Credit Risk: Single-Family Credit Risk Transfer Transactions

Our Single-Family business has developed risk-sharing capabilities to transfer portions of our single-family mortgage credit risk to the private market. The goal of these transactions is, to the extent economically sensible, to transfer a portion of the existing mortgage credit risk on a portion of recently acquired loans in our single-family guaranty book of business in order to reduce the economic risk to us and to taxpayers of future borrower defaults. Our primary method of achieving this objective has been through our CAS and CIRT transactions. In these transactions, we transfer to investors a portion of the mortgage credit risk associated with losses on a reference pool of mortgage loans and in exchange we pay investors a premium that effectively reduces the guaranty fee income we retain on the loans. We enter into other types of credit risk transfer transactions in addition to our CAS and CIRT transactions, including lender risk-sharing transactions. For information on our credit risk transfer transactions, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Transfer of Mortgage Credit Risk—Credit Risk Transfer Transactions" in our 2016 Form 10-K.

As of June 30, 2017, $798 billion in outstanding unpaid principal balance of our single-family loans, or 28% of the loans in our single-family conventional guaranty book of business measured by unpaid principal balance, were included in a reference pool for a credit risk transfer transaction. During the first half of 2017, pursuant to our credit risk transfer transactions, we transferred a portion of the mortgage credit risk on single-family mortgages with an unpaid principal balance of $180 billion at the time of the transactions. Our CAS and CIRT transactions are our primary credit risk transfer transactions. In the first half of 2017, we paid $364 million on our outstanding CAS debt for the spread over LIBOR at the time of issuance of the debt and $84 million in CIRT premiums, compared with $231 million on CAS debt and $46 million in CIRT premiums in the first half of 2016. These amounts increased from the first half of 2016 to the first half of 2017 as we continue to transfer credit risk on a larger portion of our single-family book of business.

We generally include approximately half of our recent single-family acquisitions in credit risk transfer transactions, as we target only certain types of loan categories for these transactions. Loan categories we have targeted for credit risk transfer transactions generally consist of fixed-rate 30-year single-family conventional loans that meet certain credit performance characteristics, are non-Refi Plus and have LTV ratios between 60% and 97%. The portion of our single-family loan acquisitions we include in credit risk transfer transactions can vary from period to period based on market conditions and other factors.

Table 17 displays the mortgage credit risk transferred to third parties and retained by Fannie Mae at the time of issuance and the outstanding reference pool balances as of June 30, 2017 pursuant to our single-family credit risk transfer transactions.

Table 17: Single-Family Credit Risk Transfer Transactions
Issuances from Inception to June 30, 2017
(Dollars in billions)

Senior	Fannie Mae[1] $1,000				
Mezzanine	Fannie Mae[1] $1	CIRT[2][3] $4	CAS[2] $24	Lender Risk-Sharing[2] *	Initial Reference Pool[4] $1,036
First Loss	Fannie Mae[1] $5		CAS[2][5] $1	Lender Risk-Sharing[2] $1	

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Outstanding as of June 30, 2017
(Dollars in billions)

Senior	Fannie Mae[1] $767				
Mezzanine	Fannie Mae[1] $1	CIRT[2][3] $4	CAS[2] $19	Lender Risk-Sharing[2] *	Outstanding Reference Pool[4][6] $798
First Loss	Fannie Mae[1] $5		CAS[2][5] $1	Lender Risk-Sharing[2] $1	

____
*Represents less than $500 million.
(1) Credit risk retained by Fannie Mae in CAS, CIRT and lender risk-sharing transactions. Tranche sizes vary across programs.
(2) Credit risk transferred to third parties. Tranche sizes vary across programs.
(3) Includes mortgage pool insurance transactions covering loans with an unpaid principal balance of approximately $7 billion at issuance and approximately $4 billion outstanding as of June 30, 2017.
(4) For CIRT and some lender risk-sharing transactions, “reference pool” reflects a pool of covered loans.
(5) For CAS transactions, “First Loss” represents all B tranche balances.
(6) For CAS and some lender risk-sharing transactions, represents outstanding reference pools, not the outstanding unpaid principal balance of the underlying loans, as of June 30, 2017.

As shown in the outstanding balances in Table 17 above, we have designed our credit risk transfer transactions so that prepayment activity typically has a more substantial impact on the senior tranches retained by Fannie Mae than on the risk transferred to third parties. Principal payments on the underlying reference pool are first allocated between the senior tranches and then applied sequentially to the subordinate tranches. Losses are applied in reverse sequential order starting with the first loss tranche. For CAS transactions, all principal payments and losses are allocated pro rata between the sold notes and the portion we retain. The decreases in outstanding balances from issuance to June 30, 2017 in the senior and mezzanine tranches are the result of paydowns. Outstanding balances from issuance to June 30, 2017 in the first loss tranches decreased only slightly as the losses allocated to those tranches were insignificant.

While these deals are expected to mitigate some of our potential future credit losses, they are not designed to shield us from all losses. We retain a portion of the risk of future credit losses on loans covered by CAS and CIRT transactions, including all or at least half of the first loss positions and all of the senior loss positions. In addition, on our CAS transactions, we retain a pro rata share of risk equal to approximately 5% of all notes sold. When structuring these transactions, we seek to optimize benefit to cost considerations by taking into account a number of factors, including the level of investor demand, liquidity and pricing levels, and the amount of risk reduction provided assuming various economic scenarios. Due to differences in accounting, there also could be a significant lag between the time when we recognize a provision for credit losses and when we recognize the related recovery from our CAS transactions. See “Risk Factors” in our 2016 Form 10-K for a discussion of factors that may limit our ability to use credit risk transfer transactions to mitigate some of our potential future credit losses, including factors that may result in these transactions providing less protection than we expect.

We continue to explore ways to innovate and improve our credit risk transfer programs. As part of this continued innovation, we announced a proposed new structure that would enhance our CAS program by structuring our CAS offerings as notes issued by trusts that qualify as real estate mortgage investment conduits. This proposed enhancement to our CAS program is designed to promote the continued growth of the market by expanding the potential investor base for these securities, making the program more attractive to real estate investment trust investors, as well as certain other investors, and limiting investor exposure to Fannie Mae counterparty risk.

Single-Family Portfolio Diversification and Monitoring

Overview

Diversification within our single-family mortgage credit book of business by product type, loan characteristics and geography is an important factor that influences credit quality and performance and may reduce our credit risk. We monitor various loan attributes, in conjunction with housing market and economic conditions, to determine if our pricing, eligibility and underwriting criteria accurately reflect the risk associated with loans we acquire or guarantee. In some cases, we may decide to significantly reduce our participation in riskier loan product categories. We also review the payment performance of loans in order to help identify potential problem loans early in the delinquency cycle and to guide the development of our loss mitigation strategies. For information on key loan attributes, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Portfolio Diversification and Monitoring" in our 2016 Form 10-K.

Credit Risk Profile of Our Single-Family Acquisitions and Book of Business

We initiated underwriting and eligibility changes that became effective for deliveries in late 2008 and 2009 and that focused on strengthening our underwriting and eligibility standards to promote sustainable homeownership. The result of many of these changes is reflected in the substantially improved credit risk profile of our single-family loan acquisitions since 2009.

Table 18 below displays information regarding the credit characteristics of the loans in our single-family conventional guaranty book of business by acquisition period.

Table 18: Selected Credit Characteristics of Single-Family Conventional Guaranty Book of Business, by Acquisition Period

	As of June 30, 2017							
	% of Single-Family Conventional Guaranty Book of Business[1]		Current Estimated Mark-to-Market LTV Ratio[2]		Current Estimated Mark-to-Market LTV Ratio>100%[3]		Serious Delinquency Rate	
2009-2017 acquisitions, excluding HARP and other Refi Plus loans	75	%	57	%	*	%	0.22	%
HARP loans[4]	8		72		7		1.06	
Other Refi Plus loans[5]	6		43		*		0.41	
2005-2008 acquisitions	7		69		10		5.57	
2004 and prior acquisitions	4		41		1		2.65	
Total single-family conventional guaranty book of business	100	%	58	%	1	%	1.01	%

* Represents less than 0.5%.

(1) Calculated based on the aggregate unpaid principal balance of single-family loans for each category divided by the aggregate unpaid principal balance of loans in our single-family conventional guaranty book of business as of June 30, 2017.

(2) The aggregate estimated mark-to-market LTV ratio is based on the unpaid principal balance of the loans as of the end of the period divided by the estimated current value of the properties, which we calculate using an internal valuation model that estimates periodic changes in home value. Excludes loans for which this information is not readily available.

(3) The current estimated mark-to-market LTV ratio greater than 100% is based on the unpaid principal balance of the loans with mark-to-market LTV ratios greater than 100% for each category as of the end of the period divided by

the aggregate unpaid principal balance of loans for each category in our single-family conventional guaranty book of business as of June 30, 2017.

(4) HARP loans, which we began to acquire in 2009, have LTV ratios at origination in excess of 80%. Some borrowers for HARP loans may have lower FICO credit scores and may provide less documentation than we would otherwise require. As of June 30, 2017, HARP loans had a weighted average FICO credit score at origination of 726 compared with 745 for loans in our single-family book of business overall.

(5) Other Refi Plus loans, which we began to acquire in 2009, includes all other Refi Plus loans that are not HARP loans.

Table 19 displays our single-family conventional business volumes and our single-family conventional guaranty book of business, based on certain key risk characteristics that we use to evaluate the risk profile and credit quality of our single-family loans.

Table 19: Risk Characteristics of Single-Family Conventional Business Volume and Guaranty Book of Business[1]

	Percent of Single-Family Conventional Business Volume at Acquisition[2]				Percent of Single-Family Conventional Guaranty Book of Business[3][4]	
	For the Three Months Ended June 30,		For the Six Months Ended June 30,		As of	
	2017	2016	2017	2016	June 30, 2017	December 31, 2016
Original LTV ratio:[5]						
<= 60%	17 %	19 %	19 %	19 %	21 %	21 %
60.01% to 70%	12	14	13	14	14	14
70.01% to 80%	39	39	39	39	38	38
80.01% to 90%	13	12	12	12	11	11
90.01% to 100%	19	16	17	16	13	12
Greater than 100%	*	*	*	*	3	4
Total	100 %	100 %	100 %	100 %	100 %	100 %
Weighted average	76 %	75 %	75 %	75 %	75 %	75 %
Average loan amount	$225,194	$230,416	$223,305	$225,443	$164,659	$163,200
Estimated mark-to-market LTV ratio:[6]						
<= 60%					53 %	49 %
60.01% to 70%					19	19
70.01% to 80%					16	17
80.01% to 90%					8	9
90.01% to 100%					3	4
Greater than 100%					1	2
Total					100 %	100 %
Weighted-average					58 %	60 %
Product type:						
Fixed-rate:[7]						
Long-term	84 %	82 %	82 %	81 %	79 %	77 %
Intermediate-term	13	17	15	17	16	17
Interest-only	—	—	—	—	*	*
Total fixed-rate	97	99	97	98	95	94
Adjustable-rate:						
Interest-only	—	—	—	—	1	1
Other ARMs	3	1	3	2	4	5
Total adjustable-rate	3	1	3	2	5	6
Total	100 %	100 %	100 %	100 %	100 %	100 %
Number of property units:						
1 unit	97 %	98 %	97 %	98 %	97 %	97 %
2-4 units	3	2	3	2	3	3
Total	100 %	100 %	100 %	100 %	100 %	100 %

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	Percent of Single-Family Conventional Business Volume at Acquisition[(2)]				Percent of Single-Family Conventional Guaranty Book of Business[(3)(4)] As of	
	For the Three Months Ended June 30,		For the Six Months Ended June 30,			
	2017	2016	2017	2016	June 30, 2017	December 31, 2016
Property type:						
Single-family homes	90 %	90 %	90 %	90 %	91 %	91 %
Condo/Co-op	10	10	10	10	9	9
Total	100 %	100 %	100 %	100 %	100 %	100 %
Occupancy type:						
Primary residence	88 %	90 %	89 %	90 %	88 %	88 %
Second/vacation home	5	4	4	4	4	4
Investor	7	6	7	6	8	8
Total	100 %	100 %	100 %	100 %	100 %	100 %
FICO credit score at origination:						
< 620[(8)]	* %	* %	* %	* %	2 %	2 %
620 to < 660	5	4	5	5	5	5
660 to < 700	13	12	13	13	12	12
700 to < 740	23	21	23	21	20	20
>= 740	59	63	59	61	61	61
Total	100 %	100 %	100 %	100 %	100 %	100 %
Weighted average	745	749	745	747	745	745
Loan purpose:						
Purchase	61 %	47 %	53 %	47 %	37 %	35 %
Cash-out refinance	20	18	22	19	20	20
Other refinance	19	35	25	34	43	45
Total	100 %	100 %	100 %	100 %	100 %	100 %
Geographic concentration:[(9)]						
Midwest	14 %	14 %	14 %	14 %	15 %	15 %
Northeast	13	13	14	13	18	18
Southeast	24	21	23	21	22	22
Southwest	21	20	20	20	17	17
West	28	32	29	32	28	28
Total	100 %	100 %	100 %	100 %	100 %	100 %

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*Represents less than 0.5% of single-family conventional business volume or book of business.

(1) Second lien mortgage loans held by third parties are not reflected in the original LTV or mark-to-market LTV ratios in this table.

(2) Calculated based on unpaid principal balance of single-family loans for each category at time of acquisition.

(3) Calculated based on the aggregate unpaid principal balance of single-family loans for each category divided by the aggregate unpaid principal balance of loans in our single-family conventional guaranty book of business as of the

end of each period.

(4) Our single-family conventional guaranty book of business includes jumbo-conforming and high-balance loans that represented approximately 6% of our single-family conventional guaranty book of business as of June 30, 2017 and December 31, 2016. See “Business—Legislation and Regulation—Charter Act” and “MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Portfolio Diversification and Monitoring—Jumbo-Conforming and High-Balance Loans” in our 2016 Form 10-K for information on our loan limits.

(5) The original LTV ratio generally is based on the original unpaid principal balance of the loan divided by the appraised property value reported to us at the time of acquisition of the loan. Excludes loans for which this information is not readily available.

(6) The aggregate estimated mark-to-market LTV ratio is based on the unpaid principal balance of the loan as of the end of each reported period divided by the estimated current value of the property, which we calculate using an internal valuation model that estimates periodic changes in home value. Excludes loans for which this information is not readily available.

(7) Long-term fixed-rate consists of mortgage loans with maturities greater than 15 years, while intermediate-term fixed-rate loans have maturities equal to or less than 15 years. Loans with interest-only terms are included in the interest-only category regardless of their maturities.

(8) Loans acquired after 2009 with FICO credit scores at origination below 620 consist primarily of the refinance of existing loans under our Refi Plus initiative.

(9) Midwest consists of IL, IN, IA, MI, MN, NE, ND, OH, SD and WI. Northeast consists of CT, DE, ME, MA, NH, NJ, NY, PA, PR, RI, VT and VI. Southeast consists of AL, DC, FL, GA, KY, MD, MS, NC, SC, TN, VA and WV. Southwest consists of AZ, AR, CO, KS, LA, MO, NM, OK, TX and UT. West consists of AK, CA, GU, HI, ID, MT, NV, OR, WA and WY.

Our acquisitions in the first half of 2017 continued to have a strong credit profile with a weighted average original LTV ratio of 75% and a weighted average FICO credit score at origination of 745. As shown in the table above, the first half of 2017 had a higher proportion of acquisitions consisting of home purchase loans than refinance loans compared with the first half of 2016. The shift toward home purchase loans drove up the proportion of our acquisitions consisting of loans with a weighted average original LTV ratio over 90%, as home purchase loans tend to have less equity than refinance loans. Additionally, lower refinancing activity led to a lower weighted average FICO credit score at origination during the first half of 2017.

The credit profile of our future acquisitions will depend on many factors. For example, if a higher proportion of our future acquisitions consists of home purchase loans and we acquire lower volumes of refinance loans in future periods, the loans we acquire in those periods may have a higher weighted average original LTV ratio and a lower weighted average FICO credit score at origination than our acquisitions in recent periods. Other factors that may affect the credit profile of our future acquisitions include: our future guaranty fee pricing and our competitors' pricing, and any impact of that pricing on the volume and mix of loans we acquire; our future eligibility standards and those of mortgage insurers, the Federal Housing Administration and the U.S. Department of Veteran Affairs; changes in interest rates; our future objectives and activities in support of those objectives, including actions we may take to reach additional underserved creditworthy borrowers; government policy; market and competitive conditions; and the volume and characteristics of HARP and high LTV refinance loans we acquire in the future. We expect the ultimate performance of all our loans will be affected by borrower behavior, public policy and macroeconomic trends, including unemployment, the economy and home prices. In addition, if lender customers retain more of the higher-quality loans they originate, it could negatively affect the credit profile of our new single-family acquisitions.

In August 2016, FHFA directed us and Freddie Mac to implement a new high LTV refinance offering aimed at borrowers who are making their mortgage payments on time and whose current LTV ratio exceeds a specified amount. FHFA has informed us that they currently expect the new high LTV refinance offering will be available for borrowers whose loans were originated on or after a future date to be determined by FHFA and who meet other eligibility requirements. We continue to work with FHFA and Freddie Mac on the details regarding this offering and the timing of implementation.

See "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Portfolio Diversification and Monitoring" in our 2016 Form 10-K for more information on the credit characteristics of loans in our guaranty book of business, including HARP and Refi Plus loans, Alt-A loans, jumbo-conforming and high-balance loans, reverse mortgages and mortgage products with rate resets.

Problem Loan Management

Our problem loan management strategies are primarily focused on reducing defaults to avoid losses that would otherwise occur and pursuing foreclosure alternatives to attempt to minimize the severity of the losses we incur. If a borrower does not make required payments, or is in jeopardy of not making payments, we work with the loan servicer to offer workout solutions to minimize the likelihood of foreclosure as well as the severity of loss. Our loan workouts reflect our various types of home retention solutions, including loan modifications, repayment plans and forbearances, and foreclosure alternatives, including short sales and deeds-in-lieu of foreclosure. When appropriate, we seek to move to foreclosure expeditiously. See “MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Problem Loan Management” in our 2016 Form 10-K for a discussion of our work with mortgage servicers to implement our foreclosure prevention initiatives.

In the following section, we present statistics on our problem loans, describe efforts undertaken to manage these loans and prevent foreclosures, and provide metrics regarding the performance of our loan workout activities. Unless otherwise noted, single-family delinquency data is calculated based on number of loans. We include single-family conventional loans that we own and those that back Fannie Mae MBS in the calculation of the single-family delinquency rate. Seriously delinquent loans are loans that are 90 days or more past due or in the foreclosure process. Percentage of book outstanding calculations are based on the unpaid principal balance of loans for each category divided by the unpaid principal balance of our total single-family guaranty book of business for which we have detailed loan level information.

Problem Loan Statistics

Table 20 displays the delinquency status of loans in our single-family conventional guaranty book of business (based on number of loans) and changes in the balance of seriously delinquent loans in our single-family conventional guaranty book of business.

Table 20: Delinquency Status and Activity of Single-Family Conventional Loans

	As of June 30, 2017	December 31, 2016	June 30, 2016
Delinquency status:			
30 to 59 days delinquent	1.32 %	1.51 %	1.42 %
60 to 89 days delinquent	0.34	0.41	0.36
Seriously delinquent (“SDQ”)	1.01	1.20	1.32
Percentage of SDQ loans that have been delinquent for more than 180 days	61 %	59 %	68 %
Percentage of SDQ loans that have been delinquent for more than two years	20	21	27

	For the Six Months Ended June 30, 2017	2016
Single-family SDQ loans (number of loans):		
Beginning balance	206,549	267,174
Additions	116,271	119,519
Removals:		
Modifications and other loan workouts	(38,515)	(40,645)
Liquidations and sales	(45,295)	(58,889)
Cured or less than 90 days delinquent	(64,860)	(61,569)
Total removals	(148,670)	(161,103)
Ending balance	174,150	225,590

Our single-family serious delinquency rate was 1.01% as of June 30, 2017, compared with 1.20% as of December 31, 2016. The decrease in our serious delinquency rate in the first half of 2017 was primarily the result of home retention solutions, foreclosure alternatives and completed foreclosures, improved loan payment performance and nonperforming loan sales.

We expect our single-family serious delinquency rate to continue to decline; however, as our single-family serious delinquency rate has already declined significantly over the past several years, we expect more modest declines in this rate in the future. Our single-family serious delinquency rate and the period of time that loans remain seriously delinquent continue to be negatively affected by the length of time required to complete a foreclosure in some states. Other factors that affect our single-family serious delinquency rate include the pace of loan modifications, the timing and volume of nonperforming loan sales we make, servicer performance, and changes in home prices, unemployment levels and other macroeconomic conditions.

Certain higher-risk loan categories, such as Alt-A loans, loans with higher mark-to-market LTV ratios, and our 2005 through 2008 loan vintages, continue to exhibit higher than average delinquency rates and/or account for a higher share of our credit losses. Single-family loans originated in 2005 through 2008 constituted 7% of our single-family book of business as of June 30, 2017, but constituted 50% of our seriously delinquent single-family loans as of June 30, 2017 and drove 67% of our single-family credit losses in the first half of 2017. In addition, loans in certain states such as Florida, New Jersey and New York have exhibited higher than average delinquency rates and/or account for a higher share of our credit losses.

Table 21 displays the serious delinquency rates for, and the percentage of our total seriously delinquent single-family conventional loans represented by, the specified loan categories. We also include information for our loans in California, as this state accounts for a large share of our single-family conventional guaranty book of business. The reported categories are not mutually exclusive.

Table 21: Single-Family Conventional Seriously Delinquent Loan Concentration Analysis

	As of June 30, 2017			December 31, 2016			June 30, 2016		
	Percentage of Book Outstanding	Percentage of Seriously Delinquent Loans[1]	Serious Delinquency Rate	Percentage of Book Outstanding	Percentage of Seriously Delinquent Loans[1]	Serious Delinquency Rate	Percentage of Book Outstanding	Percentage of Seriously Delinquent Loans[1]	Serious Delinquency Rate
States:									
California	19 %	6 %	0.43 %	19 %	6 %	0.50 %	20 %	5 %	0.52 %
Florida	6	10	1.51	6	10	1.89	6	11	2.27
New Jersey	4	8	2.49	4	8	3.07	4	9	3.88
New York	5	10	2.21	5	10	2.65	5	11	3.03
All other states	66	66	0.94	66	66	1.11	65	64	1.16
Product type:									
Alt-A[2]	3	14	4.52	3	15	5.00	3	16	5.68
Vintages:									
2004 and prior	4	25	2.62	5	26	2.82	5	26	2.82
2005-2008	7	50	5.73	8	51	6.39	9	54	6.73
2009-2017	89	25	0.32	87	23	0.36	86	20	0.34
Estimated mark-to-market LTV ratio:									
<= 60%	53	39	0.64	49	33	0.70	49	31	0.71
60.01% to 70%	19	16	1.02	19	15	1.13	19	15	1.16
70.01% to 80%	16	15	1.16	17	16	1.31	16	15	1.45
80.01% to 90%	8	12	1.79	9	13	2.11	9	13	2.35
90.01% to 100%	3	7	2.98	4	9	2.99	4	9	3.92
Greater than 100%	1	11	10.05	2	14	10.44	3	17	10.54
Credit enhanced:[3]									
Primary MI & other[4]	19	27	1.68	18	28	2.18	19	27	2.17
Credit risk transfer[5]	28	3	0.15	22	2	0.17	22	1	0.10
Non-credit enhanced	63	72	1.03	67	70	1.16	68	72	1.28

(1) Calculated based on the number of single-family loans that were seriously delinquent for each category divided by the total number of single-family conventional loans that were seriously delinquent.

(2) For a description of our Alt-A loan classification criteria, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Single-Family Portfolio Diversification and Monitoring"

in our 2016 Form 10-K.

(3) The credit-enhanced categories are not mutually exclusive. A loan with primary mortgage insurance that is also covered by a credit risk transfer transaction will be included in both the "Primary MI & other" category and the "Credit risk transfer" category. As a result, the "Credit enhanced" and "Non-credit enhanced" categories do not sum to 100%. The total percentage of our single-family conventional guaranty book of business with some form of credit enhancement as of June 30, 2017 was 37%.

(4) Refers to loans included in an agreement used to reduce credit risk by requiring primary mortgage insurance, collateral,

letters of credit, corporate guarantees, or other agreements to provide an entity with some assurance that it will be compensated to some degree in the event of a financial loss. Excludes loans covered by credit risk transfer transactions unless such loans are also covered by primary mortgage insurance.

(5) Refers to loans included in reference pools for credit risk transfer transactions, including loans in these transactions that are also covered by primary mortgage insurance. For Connecticut Avenue Securities and some lender risk-sharing transactions, this represents outstanding unpaid principal balance of the underlying loans on the single-family mortgage credit book, not the outstanding reference pool, as of the specified date. Loans included in our credit risk transfer transactions have all been acquired since 2012 and newer vintages typically have significantly lower delinquency rates than more seasoned loans.

Loan Workout Metrics

Our loan workouts reflect our home retention solutions, including loan modifications, repayment plans and forbearances, and foreclosure alternatives, including short sales and deeds-in-lieu of foreclosure.

Our primary loan modification initiatives have included the Home Affordable Modification Program ("HAMP"), which had a December 31, 2016 application deadline, and our proprietary Standard and Streamlined Modification initiatives. In December 2016, we announced a new modification program, the Fannie Mae Flex Modification, which replaces both HAMP and our Standard and Streamlined Modification programs with a single modification program that leverages the lessons learned from the housing crisis. The Flex Modification program became available for our servicers to implement on March 1, 2017 and must be implemented by October 1, 2017. The program offers additional payment relief allowing forbearance of principal to an 80% mark-to-market LTV ratio for eligible borrowers and targeting a 20% payment reduction.

Table 22 displays statistics on our single-family loan workouts that were completed, by type. These statistics include loan modifications but do not include trial modifications, loans to certain borrowers who have received bankruptcy relief that are classified as TDRs, or repayment or forbearance plans that have been initiated but not completed. As of June 30, 2017, there were approximately 28,200 loans in a trial modification period. For a description of our loan workout types, see "MD&A—Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Problem Loan Management—Loan Workout Metrics" in our 2016 Form 10-K.

Table 22: Statistics on Single-Family Loan Workouts

	For the Six Months Ended June 30,			
	2017		2016	
	Unpaid Principal Balance	Number of Loans	Unpaid Principal Balance	Number of Loans
	(Dollars in millions)			
Home retention solutions:				
Modifications	$6,878	41,467	$7,003	42,177
Repayment plans and forbearances completed[1]	524	3,703	395	2,825
Total home retention solutions	7,402	45,170	7,398	45,002
Foreclosure alternatives:				
Short sales	881	4,280	1,214	5,887
Deeds-in-lieu of foreclosure	346	2,285	502	3,317
Total foreclosure alternatives	1,227	6,565	1,716	9,204
Total loan workouts	$8,629	51,735	$9,114	54,206
Loan workouts as a percentage of single-family guaranty book of business	0.60 %	0.60 %	0.65 %	0.63 %

(1) Repayment plans reflect only those plans associated with loans that were 60 days or more delinquent. Forbearances reflect loans that were 90 days or more delinquent.

The volume of modifications completed in the first half of 2017 decreased compared with the first half of 2016, primarily due to a decline in the number of delinquent loans in the first half of 2017 compared with the first half of 2016.

Nonperforming Loan Sales

FHFA's 2017 conservatorship scorecard includes an objective relating to reducing the number of our severely-aged delinquent loans, including through nonperforming loan sales. During the first half of 2017, we sold approximately 7,300 nonperforming loans with an aggregate unpaid principal balance of $1.3 billion. As of June 30, 2017, we had sold a total of approximately 47,300 nonperforming loans with an aggregate unpaid principal balance of $8.9 billion. We plan to complete additional nonperforming loan sales in the future.

REO Management

Foreclosure and REO activity affect the amount of credit losses we realize in a given period. Table 23 displays our foreclosure activity by region. Regional REO acquisition and charge-off trends generally follow a pattern that is similar to, but lags, that of regional delinquency trends.

Table 23: Single-Family Foreclosed Properties

	For the Six Months Ended June 30,	
	2017	2016
Single-family foreclosed properties (number of properties):		
Beginning of period inventory of single-family foreclosed properties (REO)[1]	38,093	57,253
Acquisitions by geographic area:[2]		
Midwest	4,712	6,978
Northeast	5,269	7,056
Southeast	6,530	9,907
Southwest	2,976	3,796
West	1,587	2,634
Total properties acquired through foreclosure[1]	21,074	30,371
Dispositions of REO	(27,796)	(41,643)
End of period inventory of single-family foreclosed properties (REO)[1]	31,371	45,981
Carrying value of single-family foreclosed properties (dollars in millions)	$3,545	$5,301
Single-family foreclosure rate[3]	0.25 %	0.35 %
REO net sales prices to unpaid principal balance[4]	75 %	74 %
Short sales net sales prices to unpaid principal balance[5]	75 %	73 %

(1) Includes acquisitions through deeds-in-lieu of foreclosure. Also includes held for use properties, which are reported in our condensed consolidated balance sheets as a component of "Other assets."

(2) See footnote 9 to "Table 19: Risk Characteristics of Single-Family Conventional Business Volume and Guaranty Book of Business" for states included in each geographic region.

(3) Estimated based on the annualized total number of properties acquired through foreclosure or deeds-in-lieu of foreclosure as a percentage of the total number of loans in our single-family guaranty book of business as of the end of each respective period.

(4) Calculated as the amount of sale proceeds received on disposition of REO properties during the respective periods, excluding those subject to repurchase requests made to our sellers or servicers, divided by the aggregate unpaid principal balance of the related loans at the time of foreclosure. Net sales price represents the contract sales price less selling costs for the property and other charges paid by the seller at closing.

(5) Calculated as the amount of sale proceeds received on properties sold in short sale transactions during the respective periods divided by the aggregate unpaid principal balance of the related loans. Net sales price represents the contract sales price less the selling costs for the property and other charges paid by the seller at the closing, including borrower relocation incentive payments and subordinate lien(s) negotiated payoffs.

The continued decrease in the number of our seriously delinquent single-family loans resulted in a reduction in the number of REO acquisitions in the first half of 2017 compared with the first half of 2016.

We continue to manage our REO inventory to appropriately control costs and maximize sales proceeds. However, we are unable to market and sell a large portion of our inventory, primarily due to occupancy and state or local redemption or confirmation periods, which extends the amount of time it takes to bring our properties to a

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marketable state and eventually dispose of them. This results in higher foreclosed property expenses, which include costs related to maintaining the property and ensuring that the property is vacant. As of June 30, 2017, approximately 39% of our REO properties were unable to be marketed, 23% of our REO properties were available for sale, 18% of our REO properties were pending sale settlement and 20% of our REO properties were pending appraisals and being prepared to be listed for sale.

Multifamily Business

Our Multifamily business provides mortgage market liquidity primarily for properties with five or more residential units, which may be communities, cooperative properties, seniors housing, dedicated student housing or manufactured housing communities.

Multifamily Mortgage Market Conditions and Outlook

National multifamily market fundamentals, which include factors such as vacancy rates and rents, exhibited improved results during the second quarter of 2017.

- Vacancy rates. According to preliminary third-party data, the national multifamily vacancy rate for institutional investment-type apartment properties was an estimated 5.3% as of June 30, 2017, down from 5.5% as of March 31, 2017. The national estimated multifamily vacancy rate remains below its average rate over the last 10 years.
- Rents. Estimated multifamily rents increased during the second quarter of 2017 by an estimated 1.0%. Despite the recent moderating trend, because estimated multifamily rent growth has outpaced wage growth over the past few years, multifamily rental housing affordability has declined in recent years.

Despite the increase in new multifamily supply, estimated rent growth was positive during the second quarter of 2017, likely due to job growth and new household formations.

Continued demand for multifamily rental units was reflected in the estimated positive net absorption (that is, the net change in the number of occupied rental units during the time period) of approximately 28,000 units during the second quarter of 2017, according to preliminary data from Reis, Inc., compared with approximately 24,000 units during the first quarter of 2017.

As a result of the continued demand for multifamily rental units over the past few years, there has been an increase in the amount of new multifamily construction development nationally. According to Dodge Data & Analytics, it is estimated that there will be approximately 422,000 new multifamily units completed in 2017. The bulk of this new supply is concentrated in a limited number of metropolitan areas. We believe this increase in supply will result in a slowdown in national net absorption rates, occupancy levels and effective rents in the second half of 2017.

Multifamily Business Metrics

Table 24: Multifamily Business Key Performance Data

	For the Three Months Ended June 30,		For the Six Months Ended June 30,	
	2017	2016	2017	2016
	(Dollars in millions)			
Securitization Activity/New Business				
Multifamily new business volume[(1)]	$12,297	$10,251	$29,676	$22,802
Multifamily units financed from new business volume	162,000	141,000	364,000	302,000
Other rental business volume[(2)]	$945	$—	$945	$—
Multifamily Fannie Mae MBS issuances[(3)]	$12,297	$10,183	$29,543	$22,734
Multifamily Fannie Mae structured securities issuances	$2,605	$2,851	$5,680	$5,584
Multifamily Fannie Mae MBS outstanding, at end of period[(3)]	$241,357	$201,680	$241,357	$201,680
Portfolio Data				
Multifamily retained mortgage portfolio, at end of period	$14,780	$24,568	$14,780	$24,568
Credit Guaranty Activity				
Average multifamily guaranty book of business[(4)]	$256,575	$222,969	$252,449	$219,786
Average charged guaranty fee rate on multifamily guaranty book of business (in basis points), at end of period	77.9	71.6	77.9	71.6
Multifamily credit loss ratio (in basis points)[(5)]	0.3	0.9	0.2	0.7
Multifamily serious delinquency rate, at end of period	0.04 %	0.07 %	0.04 %	0.07 %
Percentage of multifamily guaranty book of business with lender risk-sharing, at end of period	95 %	93 %	95 %	93 %

(1) Reflects unpaid principal balance of multifamily Fannie Mae MBS issued (excluding portfolio securitizations), multifamily loans purchased, and credit enhancements provided during the period.

(2) Consists of a transaction backed by a pool of single-family rental properties.

(3) Excludes a transaction backed by a pool of single-family rental properties.

(4) Our multifamily guaranty book of business consists of: (a) multifamily mortgage loans of Fannie Mae; (b) multifamily mortgage loans underlying Fannie Mae MBS; and (c) other credit enhancements that we provide on multifamily mortgage assets and relating to a transaction backed by a pool of single-family rental properties. It excludes non-Fannie Mae multifamily mortgage-related securities held in our retained mortgage portfolio for which we do not provide a guaranty.

(5) Calculated based on Multifamily segment credit losses divided by the average multifamily guaranty book of business.

FHFA’s 2017 conservatorship scorecard includes an objective to maintain the dollar volume of new multifamily business at or below $36.5 billion excluding certain targeted affordable and underserved market business segments. Approximately 52% of Fannie Mae’s multifamily new business and other rental volume of $30.6 billion for the first half of 2017 counted towards FHFA’s 2017 multifamily volume cap.

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Multifamily Business Financial Results

Table 25: Multifamily Business Financial Results

	For the Three Months Ended June 30,			For the Six Months Ended June 30,		
	2017	2016	Variance	2017	2016	Variance
	(Dollars in millions)					
Net interest income	$636	$556	$ 80	$1,226	$1,080	$ 146
Fee and other income	242	96	146	415	232	183
Net revenues	878	652	226	1,641	1,312	329
Fair value gains (losses), net	(6)	12	(18)	(34)	49	(83)
Administrative expenses	(86)	(81)	(5)	(169)	(160)	(9)
Credit-related income[(1)]	10	3	7	5	25	(20)
Other income (expenses), net[(2)]	(72)	116	(188)	(157)	111	(268)
Income before federal income taxes	724	702	22	1,286	1,337	(51)
Provision for federal income taxes	(186)	(144)	(42)	(317)	(305)	(12)
Net income	$538	$558	$ (20)	$969	$1,032	$ (63)

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(1) Consists of the benefit for credit losses and foreclosed property expense.

(2) Consists of investment gains, gains on partnership investments and other income (expenses).

Multifamily net income remained relatively flat in the second quarter and first half of 2017 compared with the second quarter and first half of 2016, respectively. Multifamily net income in the second quarter and first half of 2017 and in the second quarter and first half of 2016 was primarily driven by net interest income, fee and other income, and other income (expenses).

Net interest income in all periods presented was primarily driven by guaranty fee income, which continued to increase as our multifamily guaranty book of business grew and loans with higher guaranty fees became a larger part of our book of business, while loans with lower guaranty fees continued to liquidate.

Fee and other income in all periods presented was primarily driven by yield maintenance fees resulting from prepayment activity.

Other income in the second quarter and first half of 2016 was driven by investment gains resulting from the sale of available-for-sale securities.

Multifamily Mortgage Credit Risk Management

This section updates our discussion of multifamily mortgage credit risk management in our 2016 Form 10-K in "MD&A—Business Segments—Multifamily Business—Multifamily Mortgage Credit Risk Management."

We exclude from the multifamily credit statistics reported below the approximately 1% of our multifamily guaranty book of business for which our loan level information is incomplete as of June 30, 2017 and December 31, 2016.

Multifamily Acquisition Policy and Underwriting Standards

Our multifamily business is responsible for pricing and managing the credit risk on multifamily mortgage loans we have purchased, on Fannie Mae MBS backed by multifamily loans (whether held in our retained mortgage portfolio or held by third parties), and on other credit enhancements provided on multifamily mortgage assets, with oversight from our Enterprise Risk Management division. Our primary multifamily delivery channel is the Delegated Underwriting and Servicing, or DUS®, program, which consists of large financial institutions and independent mortgage lenders. Multifamily loans that we purchase or that back Fannie Mae MBS are underwritten by Fannie Mae-approved lenders and may be subject to our underwriting review prior to closing, depending on the product type, loan size, market and other factors. Loans delivered to us by DUS lenders and their affiliates represented 98% of our multifamily guaranty book of business as of June 30, 2017, and 97% of our multifamily guaranty book of business as of December 31, 2016.

We use credit enhancement arrangements, primarily lender risk-sharing, for our multifamily loans. As of June 30, 2017, 95% of the unpaid principal balance of loans in our multifamily guaranty book of business had lender risk-sharing, compared with 94% as of December 31, 2016. Our maximum potential loss recovery from lenders under current risk-sharing agreements represented over 20% of the unpaid principal balance of our multifamily guaranty book of business as of June 30, 2017 and December 31, 2016.

Our standards for multifamily loans specify maximum original LTV ratio and minimum original debt service coverage ratio ("DSCR") values that vary based on loan characteristics. Our experience has been that original LTV ratio and DSCR values have been reliable indicators of future credit performance. At underwriting, the DSCR is evaluated based on both actual and underwritten debt service payments. The original DSCR is calculated using the underwritten debt service payments for the loan, rather than the actual debt service payments which, depending on the interest rate of the loan and loan structure, may result in a more conservative estimate of the debt service payments.

Table 26 displays original LTV ratio and DSCR metrics for our multifamily guaranty book of business.

Table 26: Multifamily Guaranty Book of Business Key Risk Characteristics

	As of June 30, 2017	December 31, 2016	June 30, 2016
Weighted average original LTV ratio	67%	67 %	66 %
Original LTV ratio greater than 80%	2	2	2
Original DSCR less than or equal to 1.10	13	14	13

Multifamily Portfolio Diversification and Monitoring

Diversification within our multifamily mortgage credit book of business by geographic concentration, term to maturity, interest rate structure, borrower concentration and loan size, as well as credit enhancement coverage, are important factors that influence credit performance and help reduce our credit risk.

We and our lenders monitor the performance and risk characteristics of our multifamily loans and the underlying properties on an ongoing basis throughout the loan term at the asset and portfolio level. We closely monitor loans with an estimated current DSCR below 1.0, as that is an indicator of heightened default risk. The percentage of loans in our multifamily guaranty book of business, calculated based on unpaid principal balance, with a current DSCR less than 1.0 was approximately 1% as of June 30, 2017, compared with approximately 2% as of December 31, 2016.

Multifamily Problem Loan Management and Foreclosure Prevention

We periodically refine our underwriting standards in response to market conditions and implement proactive portfolio management and monitoring, which are each designed to keep credit losses and delinquencies to a low level relative to our multifamily guaranty book of business. The multifamily serious delinquency rate was 0.04% as of June 30, 2017 and 0.05% as of December 31, 2016. We classify multifamily loans as seriously delinquent when payment is 60 days or more past due.

REO Management

The number of multifamily foreclosed properties held for sale remained low at 14 properties with a carrying value of $90 million as of June 30, 2017, compared with 13 properties with a carrying value of $85 million as of December 31, 2016.

Liquidity and Capital Management

Liquidity Management

Our business activities require that we maintain adequate liquidity to fund our operations. Our liquidity risk management framework is designed to address our liquidity risk. Liquidity risk is the risk that we will not be able to meet our funding obligations in a timely manner. Liquidity risk management involves forecasting funding requirements, maintaining sufficient capacity to meet our needs based on our ongoing assessment of financial market liquidity and adhering to our regulatory requirements.

Our primary source of funds is proceeds from the issuance of short-term and long-term debt securities. Accordingly, our liquidity depends largely on our ability to issue unsecured debt in the capital markets. Our status as a GSE and federal government support of our business continue to be essential to maintaining our access to the unsecured debt markets. Our treasury group is responsible for implementing our liquidity and contingency planning strategies.

We hold a portfolio of highly liquid investments and maintain access to alternative sources of liquidity which are designed to provide near term availability of cash in the event that our access to the debt markets becomes limited. While our liquidity contingency planning attempts to address stressed market conditions and our status under conservatorship and Treasury arrangements, we believe that our liquidity contingency plans may be difficult or impossible to execute for a company of our size in our circumstances.

Our liquidity position could be adversely affected by many factors, both internal and external to our business, including: actions taken by FHFA, the Federal Reserve, Treasury or other government agencies; legislation relating to us or our business; a U.S. government payment default on its debt obligations; a downgrade in the credit ratings of our senior unsecured debt or the U.S. government's debt from the major ratings organizations; a systemic event leading to the withdrawal of liquidity from the market; an extreme market-wide widening of credit spreads; public statements by key policy makers; a significant decline in our net worth; potential investor concerns about the adequacy of funding available to us under the senior preferred stock purchase agreement; loss of demand for our debt, or certain types of our debt, from a major group of investors; a significant credit event involving one of our major institutional counterparties; a sudden catastrophic operational failure in the financial sector; or elimination of our GSE status.

This section supplements and updates information regarding liquidity risk management in our 2016 Form 10-K. See "MD&A—Liquidity and Capital Management—Liquidity Management" and "Risk Factors" in our 2016 Form 10-K for additional information, including discussions of our primary sources and uses of funds, our liquidity risk management practices and liquidity contingency planning, factors that influence our debt funding activity, factors that may impact our access to or the cost of our debt funding, and factors that could adversely affect our liquidity.

Debt Funding

We fund our business primarily through the issuance of a variety of short-term and long-term debt securities in the domestic and international capital markets. Because debt issuance is our primary funding source, we are subject to "roll over," or refinancing, risk on our outstanding debt.

Our debt funding needs and debt funding activity may vary from quarter to quarter depending on market conditions and are influenced by anticipated liquidity needs, the size of our retained mortgage portfolio and our dividend payments to Treasury. See "Retained Mortgage Portfolio" for information about our retained mortgage portfolio and our requirement to reduce the size of our retained mortgage portfolio.

Fannie Mae Debt Funding Activity

Table 27 displays the activity in debt of Fannie Mae. This activity excludes the debt of consolidated trusts and intraday loans. Activity for short-term debt of Fannie Mae relates to borrowings with an original contractual maturity of one year or less while activity for long-term debt of Fannie Mae relates to borrowings with an original contractual maturity of greater than one year. The reported amounts of debt issued and paid off during the period represent the face amount of the debt at issuance and redemption.

The increase in our issuances and payoffs of short-term debt during the first half of 2017 compared with the first half of 2016 was driven by increased utilization of notes with overnight maturities. The decrease in our issuances and payoffs of long-term debt during the second quarter and first half of 2017 compared with the second quarter and first half of 2016 was primarily due to decreased funding needs, as well as declines in call activity due to a higher interest rate environment.

Table 27: Activity in Debt of Fannie Mae

	For the Three Months Ended June 30,				For the Six Months Ended June 30,			
	2017		2016		2017		2016	
	(Dollars in millions)							
Issued during the period:								
Short-term:								
Amount	$162,311		$170,072		$313,695		$276,885	
Weighted-average interest rate	0.78	%	0.26	%	0.65	%	0.27	%
Long-term:(1)								
Amount	$5,914		$27,384		$19,022		$51,652	
Weighted-average interest rate	2.81	%	1.61	%	2.44	%	1.74	%
Total issued:								
Amount	$168,225		$197,456		$332,717		$328,537	
Weighted-average interest rate	0.85	%	0.45	%	0.75	%	0.50	%
Paid off during the period:(2)								
Short-term:								
Amount	$169,440		$169,891		$318,186		$287,320	
Weighted-average interest rate	0.68	%	0.28	%	0.58	%	0.26	%
Long-term:(1)								
Amount	$23,424		$36,195		$39,296		$65,447	
Weighted-average interest rate	4.52	%	1.98	%	3.59	%	2.09	%
Total paid off:								
Amount	$192,864		$206,086		$357,482		$352,767	
Weighted-average interest rate	1.14	%	0.58	%	0.91	%	0.60	%

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(1) Includes credit risk-sharing securities issued under our CAS series. For additional information on our credit risk transfer transactions, see "Business Segments—Single-Family Business—Single-Family Mortgage Credit Risk Management—Transfer of Mortgage Credit Risk: Single-Family Credit Risk Transfer Transactions."

(2) Consists of all payments on debt, including regularly scheduled principal payments, payments at maturity, payments resulting from calls and payments for any other repurchases. Repurchases of debt and early retirements of zero-coupon debt are reported at original face value, which does not equal the amount of actual cash payment.

Intraday Line of Credit

We use a secured intraday funding line of credit provided by a large financial institution. We post collateral which, in some circumstances, the secured party has the right to repledge to third parties. As this line of credit is an uncommitted intraday loan facility, we may be unable to draw on it if and when needed. The line of credit under this facility was $15.0 billion as of June 30, 2017 and 2016. We had no borrowings outstanding under this line of credit as of June 30, 2017.

Outstanding Debt

Total outstanding debt of Fannie Mae includes short-term and long-term debt, excluding debt of consolidated trusts. Short-term debt of Fannie Mae consists of borrowings with an original contractual maturity of one year or less and, therefore, does not include the current portion of long-term debt. Long-term debt of Fannie Mae consists of borrowings with an original contractual maturity of greater than one year.

Our outstanding short-term debt, based on its original contractual maturity, as a percentage of our total outstanding debt, was 10% as of June 30, 2017 and 11% as of December 31, 2016. The weighted-average interest rate on our long-term debt, based on its original contractual maturity, decreased to 2.20% as of June 30, 2017 from 2.31% as of December 31, 2016.

Our outstanding debt maturing within one year, including the current portion of our long-term debt and amounts we have announced for early redemption, as a percentage of our total outstanding debt, excluding debt of consolidated trusts, was 31% as of June 30, 2017 and 32% as of December 31, 2016. The weighted-average maturity of our outstanding debt that is maturing within one year was 129 days as of June 30, 2017, compared with 146 days as of December 31, 2016. The weighted-average maturity of our outstanding debt maturing in more than one year was approximately 57 months as of June 30, 2017, compared with approximately 56 months as of December 31, 2016.

We intend to repay our short-term and long-term debt obligations as they become due primarily through proceeds from the issuance of additional debt securities. We also may use proceeds from our mortgage assets to pay our debt obligations.

Pursuant to the terms of the senior preferred stock purchase agreement, we are prohibited from issuing debt without the prior consent of Treasury if it would result in our aggregate indebtedness exceeding our outstanding debt limit, which is 120% of the amount of mortgage assets we were allowed to own under the senior preferred stock purchase agreement on December 31 of the immediately preceding calendar year. Our debt limit under the senior preferred stock purchase agreement was reduced to $407.2 billion in 2017. As of June 30, 2017, our aggregate indebtedness totaled $304.1 billion, which was $103.1 billion below our debt limit. The calculation of our indebtedness for purposes of complying with our debt limit reflects the unpaid principal balance and excludes debt basis adjustments and debt of consolidated trusts. Because of our debt limit, we may be restricted in the amount of debt we issue to fund our operations.

Table 28 displays information on our outstanding short-term and long-term debt based on its original contractual terms.

Table 28: Outstanding Short-Term Borrowings and Long-Term Debt[1]

	As of June 30, 2017			December 31, 2016		
	Maturities	Outstanding	Weighted-Average Interest Rate	Maturities	Outstanding	Weighted-Average Interest Rate
	(Dollars in millions)					
Federal funds purchased and securities sold under agreements to repurchase[2]	—	$7	0.25 %	—	$—	— %
Short-term debt:						
Debt of Fannie Mae	—	$30,501	0.84 %	—	$34,995	0.49 %
Debt of consolidated trusts	—	511	0.91	—	584	0.48
Total short-term debt		$31,012	0.84 %		$35,579	0.49 %
Long-term debt:						
Senior fixed:						
Benchmark notes and bonds	2017 - 2030	$137,509	1.96 %	2017 - 2030	$153,983	2.16 %
Medium-term notes[3]	2017 - 2026	82,215	1.42	2017 - 2026	82,230	1.40
Other[4]	2017 - 2038	7,926	4.82	2017 - 2038	12,800	6.74
Total senior fixed		227,650	1.87		249,013	2.14
Senior floating:						
Medium-term notes[3]	2017 - 2020	19,051	1.11	2017 - 2019	21,476	0.71
Connecticut Avenue Securities[5]	2023 - 2029	20,589	5.03	2023 - 2029	16,511	4.77
Other[6]	2020 - 2037	365	7.20	2020 - 2037	346	6.75
Total senior floating		40,005	3.14		38,333	2.48
Subordinated debentures	2019	4,870	9.93	2019	4,645	9.93
Secured borrowings[7]	2021 - 2022	94	1.60	2021 - 2022	111	1.44
Total long-term debt of Fannie Mae		272,619	2.20		292,102	2.31
Debt of consolidated trusts	2017 - 2056	2,984,036	2.78	2017 - 2056	2,934,635	2.57
Total long-term debt		$3,256,655	2.73 %		$3,226,737	2.54 %
Outstanding callable debt of Fannie Mae[8]		$79,044	2.08 %		$77,257	1.89 %

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