FEDERAL AGRICULTURAL MORTGAGE CORP
Form 10-Q
May 10, 2017

As filed with the Securities and Exchange Commission on May 10, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended March 31, 2017
Commission File Number 001-14951

FEDERAL AGRICULTURAL MORTGAGE CORPORATION
(Exact name of registrant as specified in its charter)

Federally chartered instrumentality of the United States	52-1578738
(State or other jurisdiction of incorporation or organization)	(I.R.S. employer identification number)
1999 K Street, N.W., 4th Floor, Washington, D.C.	20006
(Address of principal executive offices)	(Zip code)

(202) 872-7700
(Registrant's telephone number, including area code)
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).
Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	o	Accelerated filer	x
Non-accelerated filer	o (Do not check if smaller reporting company)		
		Smaller reporting company	o
		Emerging growth company	o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
Yes o No x
As of May 1, 2017, the registrant had outstanding 1,030,780 shares of Class A Voting Common Stock, 500,301 shares of Class B Voting Common Stock, and 9,066,370 shares of Class C Non-Voting Common Stock.

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PART I

Item 1. Financial Statements

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(unaudited)

	As of March 31, 2017	December 31, 2016
	(in thousands)	
Assets:		
Cash and cash equivalents	$313,641	$265,229
Investment securities:		
Available-for-sale, at fair value	2,479,244	2,515,851
Farmer Mac Guaranteed Securities:		
Available-for-sale, at fair value	5,243,046	4,853,685
Held-to-maturity, at amortized cost	1,074,686	1,149,231
Total Farmer Mac Guaranteed Securities	6,317,732	6,002,916
USDA Securities:		
Trading, at fair value	18,602	20,388
Held-to-maturity, at amortized cost	2,025,822	2,009,225
Total USDA Securities	2,044,424	2,029,613
Loans:		
Loans held for investment, at amortized cost	3,432,091	3,379,884
Loans held for investment in consolidated trusts, at amortized cost	1,208,950	1,132,966
Allowance for loan losses	(5,811)	(5,415)
Total loans, net of allowance	4,635,230	4,507,435
Real estate owned, at lower of cost or fair value	5,456	1,528
Financial derivatives, at fair value	2,674	23,182
Interest receivable (includes $8,163 and $12,584, respectively, related to consolidated trusts)	85,522	122,782
Guarantee and commitment fees receivable	38,748	38,871
Deferred tax asset, net	5,085	12,291
Prepaid expenses and other assets	4,001	86,322
Total Assets	$15,931,757	$15,606,020
Liabilities and Equity:		
Liabilities:		
Notes payable:		
Due within one year	$7,616,431	$8,440,123
Due after one year	6,300,750	5,222,977
Total notes payable	13,917,181	13,663,100
Debt securities of consolidated trusts held by third parties	1,212,792	1,142,704
Financial derivatives, at fair value	32,054	58,152
Accrued interest payable (includes $6,771 and $10,881, respectively, related to consolidated trusts)	46,845	49,700
Guarantee and commitment obligation	36,802	37,282
Accounts payable and accrued expenses	18,234	9,415
Reserve for losses	1,827	2,020
Total Liabilities	15,265,735	14,962,373
Commitments and Contingencies (Note 6)		

Equity:		
Preferred stock:		
Series A, par value $25 per share, 2,400,000 shares authorized, issued and outstanding	58,333	58,333
Series B, par value $25 per share, 3,000,000 shares authorized, issued and outstanding	73,044	73,044
Series C, par value $25 per share, 3,000,000 shares authorized, issued and outstanding	73,382	73,382
Common stock:		
Class A Voting, $1 par value, no maximum authorization, 1,030,780 shares outstanding	1,031	1,031
Class B Voting, $1 par value, no maximum authorization, 500,301 shares outstanding	500	500
Class C Non-Voting, $1 par value, no maximum authorization, 9,065,194 shares and 9,007,481 shares outstanding, respectively	9,065	9,008
Additional paid-in capital	118,386	118,655
Accumulated other comprehensive income, net of tax	41,544	33,758
Retained earnings	290,530	275,714
Total Stockholders' Equity	665,815	643,425
Non-controlling interest	207	222
Total Equity	666,022	643,647
Total Liabilities and Equity	$15,931,757	$15,606,020

The accompanying notes are an integral part of these consolidated financial statements.

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands, except per share amounts)	
Interest income:		
Investments and cash equivalents	$7,243	$6,681
Farmer Mac Guaranteed Securities and USDA Securities	42,522	35,510
Loans	36,852	31,700
Total interest income	86,617	73,891
Total interest expense	49,546	40,251
Net interest income	37,071	33,640
Provision for loan losses	(637)	(49)
Net interest income after provision for loan losses	36,434	33,591
Non-interest income/(loss):		
Guarantee and commitment fees	3,844	3,626
Gains/(losses) on financial derivatives and hedging activities	2,486	(6,782)
(Losses)/gains on trading securities	(82)	358
Losses on sale of available-for-sale investment securities	—	(9)
Losses on sale of real estate owned	(5)	—
Other income	553	101
Non-interest income/(loss)	6,796	(2,706)
Non-interest expense:		
Compensation and employee benefits	6,317	5,774
General and administrative	3,800	3,526
Regulatory fees	625	613
Real estate owned operating costs, net	—	39
(Release of)/provision for reserve for losses	(193)	14
Non-interest expense	10,549	9,966
Income before income taxes	32,681	20,919
Income tax expense	10,786	7,335
Net income	21,895	13,584
Less: Net loss attributable to non-controlling interest	15	28
Net income attributable to Farmer Mac	21,910	13,612
Preferred stock dividends	(3,295)	(3,295)
Net income attributable to common stockholders	$18,615	$10,317
Earnings per common share and dividends:		
Basic earnings per common share	$1.76	$0.99
Diluted earnings per common share	$1.73	$0.94
Common stock dividends per common share	$0.36	$0.26

The accompanying notes are an integral part of these consolidated financial statements.

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FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(unaudited)

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Net income	$21,895	$13,584
Other comprehensive income/(loss) before taxes:		
Net unrealized gains/(losses) on available-for-sale securities	14,838	(6,377)
Net changes in held-to-maturity securities	(3,487)	(1,011)
Net unrealized gains/(losses) on cash flow hedges	629	(4,763)
Other comprehensive income/(loss) before tax	11,980	(12,151)
Income tax (expense)/benefit related to other comprehensive income	(4,194)	4,253
Other comprehensive income/(loss), net of tax	7,786	(7,898)
Comprehensive income	29,681	5,686
Less: comprehensive loss attributable to non-controlling interest	15	28
Comprehensive income attributable to Farmer Mac	$29,696	$5,714

The accompanying notes are an integral part of these consolidated financial statements.

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(unaudited)

	Preferred Stock Shares	Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Income/(Loss)	Retained Earnings	Non-controlling Interest	Total Equity
(in thousands)									
Balance as of December 31, 2015	8,400	$204,759	10,687	$10,687	$117,862	$(11,019)	$231,228	$ 203	$553,720
Net income/(loss):									
Attributable to Farmer Mac	—	—	—	—	—	—	13,612	—	13,612
Attributable to non-controlling interest	—	—	—	—	—	—	—	(28)	(28)
Other comprehensive loss, net of tax	—	—	—	—	—	(7,898)	—	—	(7,898)
Cash dividends:									
Preferred stock	—	—	—	—	—	—	(3,295)	—	(3,295)
Common stock	—	—	—	—	—	—	(2,702)	—	(2,702)
Issuance of Class C Common Stock	—	—	71	71	98	—	—	—	169
Repurchase of Class C Common Stock	—	—	(307)	(307)	—	—	(8,781)	—	(9,088)
Stock-based compensation cost	—	—	—	—	1,027	—	—	—	1,027
Other stock-based award activity	—	—	—	—	(1,553)	—	—	—	(1,553)
Investment in subsidiary - non-controlling interest	—	—	—	—	—	—	—	52	52
Balance as of March 31, 2016	8,400	$204,759	10,451	$10,451	$117,434	$(18,917)	$230,062	$ 227	$544,016
Balance as of December 31, 2016	8,400	$204,759	10,539	$10,539	$118,655	$33,758	$275,714	$ 222	$643,647
Net income/(loss):									
Attributable to Farmer Mac	—	—	—	—	—	—	21,910		21,910
Attributable to non-controlling interest	—	—	—	—	—	—	—	(15)	(15)
Other comprehensive income, net of tax	—	—	—	—	—	7,786	—	—	7,786
Cash dividends:									
Preferred stock	—	—	—	—	—	—	(3,295)	—	(3,295)
Common stock	—	—	—	—	—	—	(3,799)	—	(3,799)

Issuance of Class C Common Stock	—	—	57	57	144	—	—	—	201
Stock-based compensation cost	—	—	—	—	981	—	—	—	981
Other stock-based award activity	—	—	—	—	(1,394)	—	—	—	(1,394)
Investment in subsidiary - non-controlling interest	—	—	—	—	—	—	—	—	—
Balance as of March 31, 2017	8,400	$204,759	10,596	$10,596	$118,386	$41,544	$290,530	$ 207	$666,022

The accompanying notes are an integral part of these consolidated financial statements.

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FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Cash flows from operating activities:		
Net income	$21,895	$13,584
Adjustments to reconcile net income to net cash provided by operating activities:		
Net amortization of deferred gains, premiums, and discounts on loans, investments, Farmer Mac Guaranteed Securities, and USDA Securities	181	501
Amortization of debt premiums, discounts and issuance costs	5,656	7,643
Net change in fair value of trading securities, hedged assets, and financial derivatives	525	2,631
Losses on sale of available-for-sale investment securities	—	9
Losses on sale of real estate owned	5	—
Total provision for losses	444	63
Excess tax benefits related to stock-based awards	679	—
Deferred income taxes	1,419	(1,483)
Stock-based compensation expense	981	1,027
Proceeds from repayment of trading investment securities	—	205
Proceeds from repayment of loans purchased as held for sale	25,928	28,794
Net change in:		
Interest receivable	37,292	37,633
Guarantee and commitment fees receivable	(357)	800
Other assets	2,236	(31,021)
Accrued interest payable	(2,855)	(9,469)
Other liabilities	8,605	2,495
Net cash provided by operating activities	102,634	53,412
Cash flows from investing activities:		
Purchases of available-for-sale investment securities	(66,561)	(341,099)
Purchases of Farmer Mac Guaranteed Securities and USDA Securities	(692,245)	(1,026,187)
Purchases of loans held for investment	(341,702)	(208,215)
Purchases of defaulted loans	(311)	(1,415)
Proceeds from repayment of available-for-sale investment securities	183,749	455,315
Proceeds from repayment of Farmer Mac Guaranteed Securities and USDA Securities	338,063	676,858
Proceeds from repayment of loans purchased as held for investment	182,790	132,652
Proceeds from sale of available-for-sale investment securities	—	186,769
Proceeds from sale of Farmer Mac Guaranteed Securities	149,607	139,561
Payments from sale of real estate owned	697	—
Net cash (used)/provided by investing activities	(245,913)	14,239
Cash flows from financing activities:		
Proceeds from issuance of discount notes	13,618,574	23,089,113
Proceeds from issuance of medium-term notes	2,251,535	1,207,092
Payments to redeem discount notes	(14,766,905)	(22,873,972)
Payments to redeem medium-term notes	(856,300)	(921,000)
Excess tax benefits related to stock-based awards	—	234
Payments to third parties on debt securities of consolidated trusts	(46,926)	(33,010)

Proceeds from common stock issuance	148	101
Tax payments related to share-based awards	(1,341)	(1,499)
Common stock repurchased	—	(9,286)
Investment in subsidiary - non-controlling interest	—	52
Dividends paid on common and preferred stock	(7,094)	(5,997)
Net cash provided by financing activities	191,691	451,828
Net increase in cash and cash equivalents	48,412	519,479
Cash and cash equivalents at beginning of period	265,229	1,210,084
Cash and cash equivalents at end of period	$313,641	$1,729,563

The accompanying notes are an integral part of these consolidated financial statements.

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The interim unaudited consolidated financial statements of the Federal Agricultural Mortgage Corporation ("Farmer Mac") and subsidiaries have been prepared pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC"). These interim unaudited consolidated financial statements reflect all normal and recurring adjustments that are, in the opinion of management, necessary to present a fair statement of the financial position and the results of operations and cash flows of Farmer Mac and subsidiaries for the interim periods presented. Certain information and footnote disclosures normally included in the annual consolidated financial statements have been omitted as permitted by SEC rules and regulations. The December 31, 2016 consolidated balance sheet presented in this report has been derived from Farmer Mac's audited 2016 consolidated financial statements. Management believes that the disclosures are adequate to present fairly the consolidated financial statements as of the dates and for the periods presented. These interim unaudited consolidated financial statements should be read in conjunction with the 2016 consolidated financial statements of Farmer Mac and subsidiaries included in Farmer Mac's Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC on March 9, 2017. That Form 10-K describes Farmer Mac's significant accounting policies, which include its policies on Principles of Consolidation; Cash and Cash Equivalents and Statements of Cash Flows; Transfers of Financial Assets and Liabilities; Investment Securities, Farmer Mac Guaranteed Securities, and USDA Securities; Loans; Securitization of Loans; Real Estate Owned; Financial Derivatives; Notes Payable; Allowance for Loan Losses and Reserve for Losses; Earnings Per Common Share; Income Taxes; Stock-Based Compensation; Comprehensive Income; Long-Term Standby Purchase Commitments; Fair Value Measurement; and Consolidation of Variable Interest Entities ("VIEs"). Results for interim periods are not necessarily indicative of those that may be expected for the fiscal year. Presented below are Farmer Mac's significant accounting policies that contain updated information for the three months ended March 31, 2017.

Principles of Consolidation

The consolidated financial statements include the accounts of Farmer Mac and its three subsidiaries: (1) Farmer Mac Mortgage Securities Corporation ("FMMSC"), whose principal activities are to facilitate the purchase and issuance of Farmer Mac Guaranteed Securities; (2) Farmer Mac II LLC, whose principal activity is the operation of substantially all of the business related to the USDA Guarantees line of business – primarily the acquisition of USDA Securities; and (3) Contour Valuation Services, LLC (which began doing business as AgVisory during first quarter 2016), whose principal activity is to appraise agricultural real estate. As of May 1, 2017, Farmer Mac transferred its entire 65% ownership interest in AgVisory back to the limited liability company as a company redemption in exchange for $5,000. Farmer Mac recognized a loss of approximately $0.1 million after-tax upon the transfer, which will be reflected in Farmer Mac's financial results for second quarter 2017. The consolidated financial statements also include the accounts of VIEs in which Farmer Mac determined itself to be the primary beneficiary.

The following tables present, by line of business, details about the consolidation of VIEs:

Table 1.1

	Consolidation of Variable Interest Entities As of March 31, 2017					
	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Total
	(in thousands)					
On-Balance Sheet:						
Consolidated VIEs:						
Loans held for investment in consolidated trusts, at amortized cost	$1,208,950	$ —	$ —	$ —	$ —	$1,208,950
Debt securities of consolidated trusts held by third parties [(1)]	1,212,792	—	—	—	—	1,212,792
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Carrying value [(2)]	—	41,130	—	30,054	—	71,184
Maximum exposure to loss [(3)]	—	40,734	—	30,000	—	70,734
Investment securities:						
Carrying value [(4)]	—	—	—	—	809,988	809,988
Maximum exposure to loss [(3)] [(4)]	—	—	—	—	808,155	808,155
Off-Balance Sheet:						
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Maximum exposure to loss [(3)] [(5)]	387,272	135,334	—	970,000	—	1,492,606

(1) Includes borrower remittances of $3.8 million. The borrower remittances had not been passed through to third party investors as of March 31, 2017.

(2) Includes $0.4 million of unamortized premiums and discounts and fair value adjustments related to the USDA Guarantees line of business. Includes fair value adjustments related to the Institutional Credit line of business of $0.1 million.

(3) Farmer Mac uses unpaid principal balance and outstanding face amount of investment securities to represent maximum exposure to loss.

(4) Includes auction-rate certificates, asset-backed securities, and government-sponsored enterprise ("GSE")-guaranteed mortgage-backed securities.

(5) The amount under the Farm & Ranch line of business relates to unconsolidated trusts where Farmer Mac determined it was not the primary beneficiary due to shared power with an unrelated party.

	Consolidation of Variable Interest Entities As of December 31, 2016					
	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Total
	(in thousands)					
On-Balance Sheet:						
Consolidated VIEs:						
Loans held for investment in consolidated trusts, at amortized cost	$1,132,966	$ —	$ —	$ —	$ —	$1,132,966
Debt securities of consolidated trusts held by third parties [1]	1,142,704	—	—	—	—	1,142,704
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Carrying value [2]	—	36,042	—	30,347	—	66,389
Maximum exposure to loss [3]	—	35,599	—	30,000	—	65,599
Investment securities:						
Carrying value [4]	—	—	—	—	827,874	827,874
Maximum exposure to loss [3] [4]	—	—	—	—	825,909	825,909
Off-Balance Sheet:						
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Maximum exposure to loss [3] [5]	415,441	103,976	—	970,000	—	1,489,417

(1) Includes borrower remittances of $9.7 million, which have not been passed through to third party investors as of December 31, 2016.

(2) Includes $0.4 million of unamortized premiums and discounts and fair value adjustments related to the USDA Guarantees line of business. Includes fair value adjustments related to the Institutional Credit line of business of $0.3 million.

(3) Farmer Mac uses unpaid principal balance and the outstanding face amount of investment securities to represent maximum exposure to loss.

(4) Includes auction-rate certificates, asset-backed securities, and GSE-guaranteed mortgage-backed securities.

(5) The amount under the Farm & Ranch line of business relates to unconsolidated trusts where Farmer Mac determined it was not the primary beneficiary due to shared power with an unrelated party.

(a) Statements of Cash Flows

The following table sets forth information regarding certain cash and non-cash transactions for the three months ended March 31, 2017 and 2016:

Table 1.2

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Non-cash activity:		
Real estate owned acquired through loan liquidation	4,630	—

Loans acquired and securitized as Farmer Mac Guaranteed Securities	149,607	139,561
Consolidation of Farm & Ranch Guaranteed Securities from off-balance sheet to loans held for investment in consolidated trusts and to debt securities of consolidated trusts held by third parties	117,018	135,913

(b) Earnings Per Common Share

Basic earnings per common share ("EPS") is based on the weighted-average number of shares of common stock outstanding. Diluted earnings per common share is based on the weighted-average number of shares of common stock outstanding adjusted to include all potentially dilutive common stock options, stock appreciation rights ("SARs"), and non-vested restricted stock awards. The following schedule reconciles basic and diluted EPS for the three months ended March 31, 2017 and 2016:

Table 1.3

	For the Three Months Ended					
	March 31, 2017[1]			March 31, 2016		
	Net Income	Weighted-Average Shares	$ per Share	Net Income	Weighted-Average Shares	$ per Share
	(in thousands, except per share amounts)					
Basic EPS						
Net income attributable to common stockholders	$18,615	10,551	$1.76	$10,317	10,465	$0.99
Effect of dilutive securities[2]						
Stock options, SARs and restricted stock	—	231	(0.03)	—	538	(0.05)
Diluted EPS	$18,615	10,782	$1.73	$10,317	11,003	$0.94

(1) For the effect of the adoption of the new Accounting Standard Update 2016-09 "Improvements to Employee Share-Based Payment Accounting" on Basic and Diluted EPS, see Note 1(d) "New Accounting Standards."

(2) For the three months ended March 31, 2017 and 2016, stock options and SARs of 50,757 and 201,401, respectively, were outstanding but not included in the computation of diluted earnings per share of common stock because they were anti-dilutive. For the three months ended March 31, 2017 and 2016, contingent shares of non-vested restricted stock of 32,892, and 37,284, respectively, were outstanding but not included in the computation of diluted earnings per share of common stock because performance conditions had not yet been met.

(c) Comprehensive Income

Comprehensive income represents all changes in stockholders' equity except those resulting from investments by or distributions to stockholders, and is comprised of net income and unrealized gains and losses on available-for-sale securities, certain held-to-maturity securities transferred from the available-for-sale classification, and cash flow hedges, net of related taxes.

The following table presents the changes in accumulated other comprehensive income ("AOCI"), net of tax, by component for the three months ended March 31, 2017 and 2016:

Table 1.4

	For the Three Months Ended March 31, 2017				March 31, 2016			
	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total
	(in thousands)							
For the Three Months Ended:								
Beginning Balance	$(14,387)	$ 45,752	$2,393	$33,758	$(10,035)	$ (476)	$(508)	$(11,019)
Other Comprehensive Income Before Reclassifications	12,223	—	76	12,299	(1,769)	—	(3,395)	(5,164)
Amounts reclassified from AOCI	(2,578)	(2,267)	332	(4,513)	(2,376)	(657)	299	(2,734)
Net Comprehensive Income	9,645	(2,267)	408	7,786	(4,145)	(657)	(3,096)	(7,898)
Ending Balance	$(4,742)	$ 43,485	$2,801	$41,544	$(14,180)	$ (1,133)	$(3,604)	$(18,917)

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The following table presents other comprehensive income activity, the impact on net income of amounts reclassified from each component of AOCI, and the related tax impact for the three months ended March 31, 2017 and 2016:

Table 1.5

	For the Three Months Ended					
	March 31, 2017			March 31, 2016		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	(in thousands)					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding gains/(losses) on available-for-sale-securities	$18,804	$6,581	$12,223	$(2,722)	$(953)	$(1,769)
Less reclassification adjustments included in:						
Gains/(losses) on financial derivatives and hedging activities(1)	(3,959)	(1,386)	(2,573)	(3,923)	(1,373)	(2,550)
Losses on sale of available-for-sale investment securities(2)	—	—	—	9	3	6
Other income(3)	(7)	(2)	(5)	259	91	168
Total	$14,838	$5,193	$9,645	$(6,377)	$(2,232)	$(4,145)
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income(4)	$(3,487)	$(1,220)	$(2,267)	$(1,011)	$(354)	$(657)
Total	$(3,487)	$(1,220)	$(2,267)	$(1,011)	$(354)	$(657)
Cash flow hedges						
Unrealized gains/(losses) on cash flow hedges	$117	$41	$76	$(5,222)	$(1,827)	$(3,395)
Less reclassification adjustments included in:						
Net interest income(5)	512	180	332	459	160	299
Total	$629	$221	$408	$(4,763)	$(1,667)	$(3,096)
Other comprehensive income/(loss)	$11,980	$4,194	$7,786	$(12,151)	$(4,253)	$(7,898)

(1) Relates to the amortization of unrealized gains on hedged items prior to the application of fair value hedge accounting.

(2) Represents unrealized losses on sales of available-for-sale investment securities.

(3) Represents amortization of deferred gains related to certain available-for-sale USDA Securities and Farmer Mac Guaranteed USDA Securities.

(4) Relates to the amortization of unrealized gains or losses prior to the reclassification of these securities from available-for-sale to held-to-maturity. The amortization of unrealized gains or losses reported in AOCI for held-to-maturity securities will be offset by the amortization of the premium or discount created from the transfer into held-to-maturity securities, which occurred at fair value. These unrealized gains or losses will be recorded over the remaining life of the security with no impact on future net income.

(5) Relates to the recognition of unrealized gains and losses on cash flow hedges recorded in AOCI.

(d) New Accounting Standards

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-09, "Improvements to Employee Share-Based Payment Accounting," which provides new guidance intended to simplify several aspects of accounting and presentation for employee share-based payment transactions. The ASU became effective for Farmer Mac on January 1, 2017. The adoption of the new guidance had the following effect on Farmer Mac's financial position, results of operations, and cash flows:

- Consolidated Statements of Operations - The ASU requires the recognition of all net tax benefits related to share-based compensation awards in the income tax provision. Previously, these amounts were recognized in additional paid-in capital. Net tax benefits related to share-based compensation awards of $0.7 million were recognized as a reduction to income tax expense in the three months ended March 31, 2017 in the consolidated statement of operations. Net tax benefits result from the excess of the tax deduction over the compensation expense recognized under GAAP for share-based compensation awards. That excess arises because the tax deduction is based upon the value of share-based awards upon their exercise (or vesting, in the case of restricted stock units), whereas the compensation expense under GAAP is based upon the value of the share-based awards upon their grant date.

The ASU also changed the calculation of diluted earnings per share. GAAP requires the "treasury stock method" to determine the number of dilutive securities in calculating diluted earnings per share. The ASU changed the calculation of "assumed proceeds" under the treasury stock method to exclude the amount of net tax benefits that would have been recognized in additional paid-in capital under the previous accounting standard. This change in the calculation reduces the amount of shares assumed to have been repurchased under the treasury stock method, thus increasing the number of dilutive shares.

Both of these changes in the guidance were applied prospectively beginning January 1, 2017 and for the three months ended March 31, 2017. The change in the recognition of all net tax benefits related to share-based compensation awards in the income tax provision resulted in an increase of $0.06 in both basic earnings per share and diluted earnings per share for the three months ended March 31, 2017. The change in the guidance for the calculation of diluted earnings per share had an immaterial impact on diluted earnings per share.

Additionally, the ASU allows companies to choose to either include an estimate of forfeitures expected to occur in share-based compensation expense or account for them as they occur. Previously, GAAP required companies to include an estimate of forfeitures expected to occur in their share-based compensations expense. Farmer Mac has elected to account for forfeitures in compensation expense as they occur. The cumulative impact of the change in the treatment of forfeitures was not material for the three months ended March 31, 2017.

- Consolidated Statements of Cash Flows - The ASU requires excess tax benefits from share-based employee awards to be reported within operating activities. Previously, these cash flows were reported within financing activities. Farmer Mac has applied this guidance prospectively, resulting in an increase in net cash provided by operating activities and a corresponding decrease in net cash provided by financing activities of $0.7 million for the three months ended March 31, 2017.

The ASU requires employee taxes paid when an employer withholds shares for tax purposes to be reported within financing activities. Under the previous guidance, these cash flows were included in operating activities. These changes were required to be applied on a retrospective basis. As a result, the consolidated statement of cash flows for prior periods was revised, resulting in an increase in net cash provided by operating activities and a decrease in net cash provided by financing activities of $1.5 million for the three months ended March 31, 2016, compared to previously reported amounts. The amount of employee taxes paid for shares withheld was $1.3 million for the three months ended March 31, 2017.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments—Credit Losses," which will require entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. Entities will be required to use forward-looking information to form their credit loss estimates. The ASU will also require enhanced disclosures to help users of financial statements better understand significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an entity's portfolio. The new standard is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019. Early application will be permitted for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Farmer Mac is currently evaluating the impact that the new guidance will have on its consolidated financial statements. That impact will primarily be from the new requirement to recognize all expected losses rather than just incurred losses as of the reporting date.

In March 2017, the FASB issued ASU 2017-08, "Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities," which shortens the amortization period for certain callable debt securities held at a premium by requiring the premium to be amortized to the earliest call date. The ASU does not require an accounting change for securities held at a discount. The new standard is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019. Farmer Mac does not expect that adoption of the new guidance will have a material effect on Farmer Mac's financial position, results of operations, or cash flows.

(e) Reclassifications

Certain reclassifications of prior period information were made to conform to the current period presentation.

2. INVESTMENT SECURITIES

The following tables set forth information about Farmer Mac's investment securities as of March 31, 2017 and December 31, 2016:

Table 2.1

	As of March 31, 2017					
	Amount Outstanding	Unamortized Premium/(Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)					
Available-for-sale:						
Floating rate auction-rate certificates backed by Government guaranteed student loans	$19,700	$ —	$19,700	$ —	$(1,576)	$18,124
Floating rate asset-backed securities	40,825	(189)	40,636	—	(266)	40,370
Floating rate corporate debt securities	10,000	—	10,000	60	—	10,060
Floating rate Government/GSE guaranteed mortgage-backed securities	1,342,378	2,637	1,345,015	2,494	(2,819)	1,344,690
Fixed rate GSE guaranteed mortgage-backed securities(1)	514	2,469	2,983	2,394	—	5,377
Floating rate GSE subordinated debt	70,000	—	70,000	—	(2,424)	67,576
Fixed rate senior agency debt	187,295	53	187,348	—	(283)	187,065
Fixed rate U.S. Treasuries	806,493	233	806,726	7	(751)	805,982
Total available-for-sale	2,477,205	5,203	2,482,408	4,955	(8,119)	2,479,244
Total investment securities	$2,477,205	$ 5,203	$2,482,408	$ 4,955	$(8,119)	$2,479,244

(1) Fair value includes $4.8 million of an interest-only security with a notional amount of $145.5 million.

	As of December 31, 2016					
	Amount Outstanding	Unamortized Premium/(Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)					
Available-for-sale:						
Floating rate auction-rate certificates backed by Government guaranteed student loans	$19,700	$ —	$19,700	$ —	$(1,970)	$17,730
Floating rate asset-backed securities	44,442	(202)	44,240	1	(390)	43,851
Floating rate corporate debt securities	10,000	—	10,000	41	—	10,041
Floating rate Government/GSE guaranteed mortgage-backed securities	1,359,700	2,827	1,362,527	1,768	(3,266)	1,361,029
Fixed rate GSE guaranteed mortgage-backed securities(1)	538	2,582	3,120	4,505	—	7,625
Floating rate GSE subordinated debt	70,000	—	70,000	—	(3,047)	66,953
Fixed rate senior agency debt	187,295	106	187,401	—	(268)	187,133
Fixed rate U.S. Treasuries	821,619	359	821,978	47	(536)	821,489
Total available-for-sale	2,513,294	5,672	2,518,966	6,362	(9,477)	2,515,851
Total investment securities	$2,513,294	$ 5,672	$2,518,966	$ 6,362	$(9,477)	$2,515,851

(1) Fair value includes $7.0 million of an interest-only security with a notional amount of $146.1 million.

Farmer Mac did not sell any securities from its available-for-sale investment portfolio during the three months ended March 31, 2017. During the three months ended March 31, 2016, Farmer Mac received proceeds of $186.8 million from the sale of securities from its available-for-sale investment portfolio, resulting in gross realized gains of $0.1 million and gross realized losses of $0.1 million.

As of March 31, 2017 and December 31, 2016, unrealized losses on available-for-sale investment securities were as follows:

Table 2.2

	As of March 31, 2017			
	Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(in thousands)			
Floating rate auction-rate certificates backed by Government guaranteed student loans	$—	$—	$ 18,124	$ (1,576)
Floating rate asset-backed securities	—	—	35,514	(266)
Floating rate Government/GSE guaranteed mortgage-backed securities	241,188	(608)	409,002	(2,211)
Floating rate GSE subordinated debt	—	—	67,576	(2,424)
Fixed rate U.S. Treasuries	776,996	(751)	—	—
Fixed rate senior agency debt	187,066	(283)	—	—
Total	$ 1,205,250	$ (1,642)	$ 530,216	$ (6,477)

	As of December 31, 2016			
	Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(in thousands)			
Floating rate auction-rate certificates backed by Government guaranteed student loans	$—	$—	$ 17,730	$ (1,970)
Floating rate asset-backed securities	4,654	(10)	38,077	(380)
Floating rate Government/GSE guaranteed mortgage-backed securities	384,586	(1,030)	442,041	(2,236)
Floating rate GSE subordinated debt	—	—	66,953	(3,047)
Fixed rate U.S. Treasuries	732,371	(536)	—	—
Fixed rate senior agency debt	187,133	(268)	—	—
Total	$ 1,308,744	$ (1,844)	$ 564,801	$ (7,633)

The unrealized losses presented above are principally due to a general widening of market spreads and an increase in the levels of interest rates from the dates of acquisition to March 31, 2017 and December 31, 2016, as applicable. The resulting decrease in fair values reflects an increase in the perceived risk by the financial markets related to those securities. As of March 31, 2017, all of the investment securities in an unrealized loss position either were backed by the full faith and credit of the U.S. government or had credit ratings of at least "AA+," except one that was rated "A-." As of December 31, 2016, all of the investment securities in an unrealized loss position either were backed by the full faith and credit of the U.S. government or had credit ratings of at least "AA+," except one that was rated "A-." The unrealized losses were on 96 and 97 individual investment securities as of March 31, 2017 and December 31, 2016, respectively.

As of March 31, 2017, 40 of the securities in loss positions had been in loss positions for more than 12 months and had a total unrealized loss of $6.5 million. As of December 31, 2016, 36 of the securities in loss positions had been in loss positions for more than 12 months and had a total unrealized loss of $7.6 million. Securities in unrealized loss positions for 12 months or longer have a fair value as of March 31, 2017 that is, on average, approximately 99 percent of their amortized cost basis. Farmer Mac believes that all of these unrealized losses are recoverable within a reasonable period of time by way of maturity or changes in credit spreads. Accordingly, Farmer Mac has concluded that none of the unrealized losses on these available-for-sale investment securities are other-than-temporary impairment as of March 31, 2017 and December 31, 2016.

Farmer Mac did not own any held-to-maturity or trading investment securities as of March 31, 2017 and December 31, 2016.

The amortized cost, fair value, and weighted-average yield of available-for-sale investment securities by remaining contractual maturity as of March 31, 2017 are set forth below. Asset-backed and mortgage-backed securities are included based on their final maturities, although the actual maturities may differ due to prepayments of the underlying assets.

Table 2.3

	As of March 31, 2017 Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$988,363	$987,343	0.77%
Due after one year through five years	227,113	227,471	1.42%
Due after five years through ten years	437,367	438,280	1.54%
Due after ten years	829,565	826,150	1.42%
Total	$2,482,408	$2,479,244	1.18%

3. FARMER MAC GUARANTEED SECURITIES AND USDA SECURITIES

The following tables set forth information about on-balance sheet Farmer Mac Guaranteed Securities and USDA Securities as of March 31, 2017 and December 31, 2016:

Table 3.1

	As of March 31, 2017					
	Unpaid Principal Balance	Unamortized Premium/(Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)					
Held-to-maturity:						
AgVantage	$1,035,587	$ (2,031)	$1,033,556	$ 6,290	$(3,115)	$1,036,731
Farmer Mac Guaranteed USDA Securities	40,734	396	41,130	293	(5)	41,418
Total Farmer Mac Guaranteed Securities	1,076,321	(1,635)	1,074,686	6,583	(3,120)	1,078,149
USDA Securities	1,955,868	69,954	2,025,822	1	(66,210)	1,959,613
Total held-to-maturity	$3,032,189	$ 68,319	$3,100,508	$ 6,584	$(69,330)	$3,037,762
Available-for-sale:						
AgVantage	$5,266,782	$ (258)	$5,266,524	$ 33,450	$(56,928)	$5,243,046
Trading:						
USDA Securities	$17,760	$ 1,274	$19,034	$ 56	$(488)	$18,602

	As of December 31, 2016					
	Unpaid Principal Balance	Unamortized Premium/(Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)					
Held-to-maturity:						
AgVantage	$1,115,465	$ (2,276)	$1,113,189	$ 7,187	$(3,175)	$1,117,201
Farmer Mac Guaranteed USDA Securities	35,599	443	36,042	5	(239)	35,808
Total Farmer Mac Guaranteed Securities	1,151,064	(1,833)	1,149,231	7,192	(3,414)	1,153,009
USDA Securities	1,935,440	73,785	2,009,225	—	(95,590)	1,913,635
Total held-to-maturity	$3,086,504	$ 71,952	$3,158,456	$ 7,192	$(99,004)	$3,066,644
Available-for-sale:						
AgVantage	$4,889,007	$ (103)	$4,888,904	$ 28,715	$(63,934)	$4,853,685
Trading:						
USDA Securities	$19,360	$ 1,377	$20,737	$ 41	$(390)	$20,388

On October 1, 2016, Farmer Mac transferred $2.0 billion of USDA Securities and $32.8 million of Farmer Mac Guaranteed USDA Securities from available-for-sale to held-to-maturity to reflect Farmer Mac's positive intent and ability to hold these securities until maturity or payoff. Farmer Mac transferred these securities at fair value as of the date of the transfer, which included a cost basis adjustment of unrealized appreciation in the amount of $73.1 million for the USDA Securities and $0.7 million for the Farmer Mac Guaranteed USDA Securities. The accumulated unrealized appreciation was retained in accumulated other comprehensive income in the amount of $73.8 million, pre-tax. Farmer Mac accounts for held-to-maturity securities at amortized cost. Both the cost basis adjustment and accumulated unrealized appreciation will be amortized as an adjustment to the yield on the held-to-maturity USDA Securities over the remaining term of the transferred securities.

As of March 31, 2017 and December 31, 2016, unrealized losses on held-to-maturity and available-for-sale on-balance sheet Farmer Mac Guaranteed Securities and USDA Securities were as follows:

Table 3.2

	As of March 31, 2017 Held-to-Maturity and Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(in thousands)			
Held-to-maturity:				
AgVantage	$358,636	$(3,115)	$—	$—
Farmer Mac Guaranteed USDA Securities	279	(5)	—	—
USDA Securities	1,865,182	(66,194)	93,978	(16)
Total held-to-maturity	$2,224,097	$(69,314)	$93,978	$(16)
Available-for-sale:				
AgVantage	$1,149,984	$(26,036)	$1,020,572	$(30,892)

	As of December 31, 2016 Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(in thousands)			
Held-to-maturity:				
AgVantage	$358,575	$(3,175)	$—	$—
Farmer Mac Guaranteed USDA Securities	30,575	(239)	—	—
USDA Securities	1,816,366	(95,582)	97,270	(8)
Total held-to-maturity	$2,205,516	$(98,996)	$97,270	$(8)
Available-for-sale:				
AgVantage	$982,538	$(18,482)	$1,131,930	$(45,452)

The unrealized losses presented above are principally due to higher interest rates from the date of acquisition to March 31, 2017 and December 31, 2016, as applicable. In addition, the unrealized losses on the held-to-maturity USDA Securities as of December 31, 2016 reflect their increased cost basis resulting from their transfer to held-to-maturity as of October 1, 2016, as described above. The credit exposure related to Farmer Mac's USDA Guarantees line of business is covered by the full faith and credit guarantee of the United States. The unrealized losses from AgVantage securities were on 21 available-for-sale securities as of March 31, 2017. There were 7 held-to-maturity AgVantage securities with an unrealized loss as of March 31, 2017. The unrealized losses from AgVantage securities were on 22 available-for-sale securities as of December 31, 2016. There were 7 unrealized losses from held-to-maturity securities as of December 31, 2016. As of March 31, 2017, 8 available-for-sale

AgVantage securities had been in a loss position for more than 12 months with a total unrealized loss of $30.9 million. As of December 31, 2016, 10 available-for-sale AgVantage securities had been in a loss position for more than 12 months with a total unrealized loss of $45.5 million. Farmer Mac has concluded that none of the unrealized losses on its held-to-maturity Farmer Mac Guaranteed Securities and USDA Securities and available-for-sale Farmer Mac Guaranteed Securities are other-than-temporary impairment as of either March 31, 2017 or December 31, 2016. Farmer Mac does not intend to sell these securities, and it is not more likely than not that Farmer Mac will be required to sell the securities before recovery of the amortized cost basis.

During the three months ended March 31, 2017 and 2016, Farmer Mac realized no gains or losses from the sale of Farmer Mac Guaranteed Securities and USDA Securities.

The amortized cost, fair value, and weighted-average yield of available-for-sale and held-to-maturity Farmer Mac Guaranteed Securities and USDA Securities by remaining contractual maturity as of March 31, 2017 are set forth below. The balances presented are based on their final maturities, although the actual maturities may differ due to prepayments of the underlying assets.

Table 3.3

	As of March 31, 2017			
	Available-for-Sale Securities			
	Amortized Cost	Fair Value	Weighted-Average Yield	
	(dollars in thousands)			
Due within one year	$541,181	$542,582	1.65	%
Due after one year through five years	2,852,298	2,866,585	1.95	%
Due after five years through ten years	838,374	839,129	2.61	%
Due after ten years	1,034,671	994,750	1.66	%
Total	$5,266,524	$5,243,046	1.97	%
	As of March 31, 2017			
	Held-to-Maturity Securities			
	Amortized Cost	Fair Value	Weighted-Average Yield	
	(dollars in thousands)			
Due within one year	$275,696	$276,572	2.21	%
Due after one year through five years	829,335	829,694	2.16	%
Due after five years through ten years	179,240	174,029	2.97	%
Due after ten years	1,816,237	1,757,467	3.29	%
Total	$3,100,508	$3,037,762	2.86	%

As of March 31, 2017, Farmer Mac owned trading USDA Securities with an amortized cost of $19.0 million, a fair value of $18.6 million, and a weighted-average yield of 5.40 percent. As of December 31, 2016, Farmer Mac owned trading USDA Securities with an amortized cost of $20.7 million, a fair value of $20.4 million, and a weighted-average yield of 5.44 percent.

In April 2017, Farmer Mac purchased and retained $1.0 billion of AgVantage securities that refinanced an AgVantage security of the same amount that matured in April 2017. Previously, Farmer Mac held $30.0 million of the $1.0 billion AgVantage security that matured in April 2017 in its on-balance sheet portfolio. The remaining $970.0 million of the $1.0 billion AgVantage security that matured in April 2017 had

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previously been sold to third parties and accounted for as off-balance sheet commitment. Farmer Mac holds the newly purchased $1.0 billion in AgVantage securities entirely within its on-balance sheet portfolio.

4. FINANCIAL DERIVATIVES

Farmer Mac enters into financial derivative transactions principally to protect against risk from the effects of market price or interest rate movements on the value of certain assets, future cash flows, or debt issuance, and not for trading or speculative purposes. Certain financial derivatives are designated as fair value hedges of fixed rate assets, primarily classified as available-for-sale, to protect against fair value changes in the assets related to a benchmark interest rate (i.e., LIBOR). Other financial derivatives are designated as cash flow hedges to mitigate the volatility of future interest rate payments on floating rate debt.

All financial derivatives are recorded on the balance sheet at fair value as a freestanding asset or liability. Changes in the fair values of financial derivatives not designated as cash flow hedges are reported in "Gains/(losses) on financial derivatives and hedging activities" in the consolidated statements of operations. For financial derivatives designated in fair value hedge accounting relationships, changes in the fair values of the hedged items, which are primarily fixed rate AgVantage securities and fixed rate medium-term notes, related to the risk being hedged are also reported in "Gains/(losses) on financial derivatives and hedging activities" in the consolidated statements of operations. Interest accruals on derivatives designated in fair value hedge accounting relationships are recorded in "Net interest income" in the consolidated statements of operations. For the three months ended March 31, 2017 and 2016, the amount of interest expense recognized on those derivatives was $3.2 million and $4.5 million, respectively. For financial derivatives designated in cash flow hedge accounting relationships, the effective portion of the derivative gain/loss is recorded in other comprehensive income and any ineffective portion is recognized immediately in "Gains/(losses) on financial derivatives and hedging activities" in the consolidated statements of operations. Because the hedging instrument is an interest rate swap and the hedged forecasted transactions are future interest payments on variable-rate debt, amounts recorded in accumulated other comprehensive income are reclassified to "Total interest expense" in conjunction with the recognition of interest expense on the debt. For both the three months ended March 31, 2017 and 2016, $0.5 million was reclassified out of accumulated other comprehensive income into interest expense. As of March 31, 2017, Farmer Mac expects to reclassify $1.2 million pretax, or $0.8 million after-tax, from accumulated other comprehensive income, net of tax, to earnings over the next twelve months. This amount could differ from amounts actually recognized due to changes in interest rates, hedge de-designations, and the addition of other hedges subsequent to March 31, 2017. During the three months ended March 31, 2017 and 2016, there were no gains or losses from interest rate swaps designated as cash flow hedges reclassified to earnings because it became probable the original forecasted transaction would not occur.

The following tables summarize information related to Farmer Mac's financial derivatives on a gross basis without giving consideration to master netting arrangements as of March 31, 2017 and and December 31, 2016 and the effects of financial derivatives on the consolidated statements of operations for the three months ended March 31, 2017 and 2016:

Table 4.1

	As of March 31, 2017						
		Fair Value					
	Notional Amount	Asset	(Liability)	Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Life (in years)
	(dollars in thousands)						
Fair value hedges:							
Interest rate swaps:							
Pay fixed non-callable	$1,808,581	$1,292	$(9,133)	1.77%	1.04%		4.75
Receive fixed non-callable	860,200	11	(1,815)	0.98%	1.39%		3.27
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	221,000	843	(290)	2.28%	1.34%		7.13
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	433,406	400	(20,912)	4.06%	1.04%		5.69
Receive fixed non-callable	4,262,401	69	—	0.82%	0.87%		0.79
Receive fixed callable	30,000	—	(10)	0.97%	0.58%		0.08
Basis swaps	865,000	51	(15)	0.93%	0.99%		0.93
Treasury futures	12,800	8	—			124.62	
Credit valuation adjustment		—	121				
Total financial derivatives	$8,493,388	$2,674	$(32,054)				
Collateral pledged		—	25,075				
Net amount		$2,674	$(6,979)				

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	As of December 31, 2016						
		Fair Value					
	Notional Amount	Asset	(Liability)	Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Life (in years)
	(dollars in thousands)						
Fair value hedges:							
Interest rate swaps:							
Pay fixed non-callable	$1,642,609	$18,508	$(18,909)	1.73%	0.90%		4.70
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	207,000	3,706	(955)	2.18%	1.11%		7.28
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	435,827	339	(32,951)	4.06%	0.89%		5.90
Receive fixed non-callable	4,991,821	607	(5,064)	0.74%	0.75%		0.60
Receive fixed callable	30,000	—	(33)	0.82%	0.58%		0.33
Basis swaps	765,000	36	(243)	0.78%	0.78%		0.87
Treasury futures	28,000	—	(155)			123.73	
Credit valuation adjustment		(14)	158				
Total financial derivatives	$8,100,257	$23,182	$(58,152)				
Collateral pledged		—	25,643				
Net amount		$23,182	$(32,509)				

Table 4.2

	Gains/(losses) on financial derivatives and hedging activities For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Fair value hedges:		
Interest rate swaps[(1)]	$1,526	$(26,898)
Hedged items	(5,404)	29,787
Gains on fair value hedges	(3,878)	2,889
Cash flow hedges:		
Loss recognized (ineffective portion)	(29)	(149)
Losses on cash flow hedges	(29)	(149)
No hedge designation:		
Interest rate swaps	6,684	(8,142)

Agency forwards	(399)	(877)
Treasury futures	108	(503)
Gains/(losses) on financial derivatives not designated in hedging relationships	6,393	(9,522)
Gains/(losses) on financial derivatives and hedging activities	$2,486	$(6,782)

(1) Included in the assessment of hedge effectiveness as of March 31, 2017, but excluded from the amounts in the table, were gains of $3.6 million for the three months ended March 31, 2017, attributable to the fair value of the swaps at the inception of the hedging relationship. Accordingly, the amounts recognized as hedge ineffectiveness for three months ended March 31, 2017 were losses of $0.3 million. The comparable amounts as of March 31, 2016 were losses of $1.5 million for the three months ended March 31, 2016, attributable to the fair value of the swaps at the inception of the hedging relationship and, accordingly, gains of $1.4 million for the three months ended March 31, 2016, attributable to hedge ineffectiveness.

As of March 31, 2017 and December 31, 2016, Farmer Mac's credit exposure to interest rate swap counterparties, excluding netting arrangements and any adjustment for nonperformance risk, but including accrued interest, was $27.2 million and $24.5 million, respectively; however, including netting arrangements and accrued interest, Farmer Mac's credit exposure was $0.3 million and $0.2 million as of March 31, 2017 and December 31, 2016, respectively. As of March 31, 2017, Farmer Mac held no cash as collateral for its derivatives in net asset positions resulting in uncollateralized net asset positions of $0.3 million. As of December 31, 2016, Farmer Mac held no cash collateral for its derivatives in net asset positions, resulting in uncollateralized net asset positions of $0.2 million.

As of March 31, 2017 and December 31, 2016, the fair value of Farmer Mac's derivatives in a net liability position including accrued interest but excluding netting arrangements and any adjustment for nonperformance risk, was $58.2 million and $65.7 million, respectively; however, including netting arrangements and accrued interest, the fair value of Farmer Mac's derivatives in a net liability position at the counterparty level was $34.2 million and $41.4 million as of March 31, 2017 and December 31, 2016, respectively. Farmer Mac posted cash of $0.1 million and $25.0 million of investment securities as of March 31, 2017 and posted cash of $1.0 million and $24.6 million investment securities as of December 31, 2016. Farmer Mac records posted cash as a reduction in the outstanding balance of cash and cash equivalents and an increase in the balance of prepaid expenses and other assets. Any investment securities posted as collateral are included in the investment securities balances on the consolidated balance sheets. If Farmer Mac had breached certain provisions of the derivative contracts as of March 31, 2017 and December 31, 2016, it could have been required to settle its obligations under the agreements or post additional collateral of $9.1 million and $15.8 million, respectively. As of March 31, 2017 and December 31, 2016, there were no financial derivatives in a net payable position where Farmer Mac was required to pledge collateral which the counterparty had the right to sell or repledge.

For certain derivatives, Farmer Mac clears interest rate swaps through a clearinghouse, the Chicago Mercantile Exchange ("CME"). Farmer Mac posts initial and variation margin to this clearinghouse through which centrally-cleared derivatives and futures contracts are traded. These collateral postings expose Farmer Mac to institutional credit risk in the event that either the clearinghouse or the futures commission merchant that Farmer Mac uses to post collateral to the clearinghouse fails to meet its obligations. Conversely, the use of centrally-cleared derivatives mitigates Farmer Mac's credit risk to individual counterparties because clearinghouses assume the credit risk among counterparties in centrally-cleared derivatives transactions. Of Farmer Mac's $8.5 billion notional amount of interest rate swaps outstanding as of March 31, 2017, $7.3 billion were cleared through swap clearinghouses. Of Farmer Mac's $8.1 billion notional amount of interest rate swaps outstanding as of December 31, 2016, $6.9 billion were cleared through swap clearinghouses.

Effective January 3, 2017, the CME implemented a change in its rules related to the exchange of variation margin. Specifically, the exchange of variation margin between derivatives counterparties is now deemed by CME to be a partial settlement of each respective derivative contract rather than as collateral pledged by a counterparty. Accordingly, beginning in first quarter 2017, Farmer Mac presented its cleared derivatives portfolio net of variation margin payments on its consolidated balance sheets and recognized realized gains or losses as a result of these payments within "Gains/(losses) on financial derivatives and hedging activities" on its consolidated statements of operations. Prior to first quarter 2017, Farmer Mac accounted for variation margin as collateral and associated unrealized gains or losses on those centrally cleared derivative contracts. Farmer Mac included those unrealized gains or losses within "Gains/(losses) on financial derivatives and hedging activities" in its consolidated statements of operations prior to first quarter 2017. See Note 9 for information about the effect of this rule change on the calculation of core earnings beginning in 2017.

5.LOANS AND ALLOWANCE FOR LOSSES

Loans

Farmer Mac classifies loans as either held for investment or held for sale. Loans held for investment are recorded at the unpaid principal balance, net of unamortized premium or discount and other cost adjustments. Loans held for sale are reported at the lower of cost or fair value determined on a pooled basis. As of March 31, 2017 and December 31, 2016, Farmer Mac had no loans held for sale. The following table displays the composition of the loan balances as of March 31, 2017 and December 31, 2016:

Table 5.1

	As of March 31, 2017			As of December 31, 2016		
	Unsecuritized	In Consolidated Trusts	Total	Unsecuritized	In Consolidated Trusts	Total
	(in thousands)					
Farm & Ranch	$2,434,436	$1,208,950	$3,643,386	$2,381,488	$1,132,966	$3,514,454
Rural Utilities	999,130	—	999,130	999,512	—	999,512
Total unpaid principal balance[1]	3,433,566	1,208,950	4,642,516	3,381,000	1,132,966	4,513,966
Unamortized premiums, discounts and other cost basis adjustments	(1,475)	—	(1,475)	(1,116)	—	(1,116)
Total loans	3,432,091	1,208,950	4,641,041	3,379,884	1,132,966	4,512,850
Allowance for loan losses	(4,710)	(1,101)	(5,811)	(4,437)	(978)	(5,415)
Total loans, net of allowance	$3,427,381	$1,207,849	$4,635,230	$3,375,447	$1,131,988	$4,507,435

(1) Unpaid principal balance is the basis of presentation in disclosures of outstanding balances for Farmer Mac's lines of business.

Allowance for Losses

Farmer Mac maintains an allowance for losses presented in two components on its consolidated balance sheets: (1) an allowance for loan losses to account for estimated probable losses on loans held, and (2) a reserve for losses to account for estimated probable losses on loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities (excluding AgVantage securities). Farmer Mac's total allowance for losses was $7.6 million as of March 31, 2017 and $7.4 million as of December 31, 2016. See Note 6 for more information about off-balance sheet Farmer Mac Guaranteed Securities and LTSPCs.

The following is a summary of the changes in the total allowance for losses for the three months ended March 31, 2017 and 2016:

Table 5.2

	For the Three Months Ended					
	March 31, 2017			March 31, 2016		
	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses
	(in thousands)					
Beginning Balance	$5,415	$ 2,020	$ 7,435	$4,480	$ 2,083	$ 6,563
Provision for/(release of) losses	637	(193)	444	49	14	63
Charge-offs	(241)	—	(241)	—	—	—
Ending Balance	$5,811	$ 1,827	$ 7,638	$4,529	$ 2,097	$ 6,626

During first quarter 2017, Farmer Mac recorded provisions to its allowance for loan losses of $0.6 million and releases to its reserve for losses of $0.2 million. The provisions to the allowance for loan losses recorded during first quarter 2017 were primarily attributable to an increase in the specific allowance for certain impaired on-balance sheet crop and permanent planting loans resulting from both an increase in the volume of such loans and downgrades in risk ratings on certain loans. The releases to the reserve for losses recorded during the three months ended March 31, 2017 were primarily attributable to (1) a decrease in the general reserve due to improvement in credit quality of certain Agricultural Storage and Processing loans and (2) a net decrease in the balance of loans underlying off-balance sheet Farmer Mac Guaranteed Securities. Farmer Mac recorded $0.2 million of charge-offs to its allowance for loan losses during first quarter 2017. The charge-offs recorded during the first quarter 2017 were primarily related to two impaired crop loans, with one borrower, that were foreclosed and transitioned to REO during first quarter 2017. Farmer Mac had previously recorded a specific allowance of $0.2 million on these impaired crop loans as of December 31, 2016. Subsequent to March 31, 2017, Farmer Mac sold the related properties for $5.7 million and recognized $0.5 million gain on sale of REO.

During first quarter 2016, Farmer Mac recorded provisions to its allowance for loan losses of $49,000 and releases to its reserve for losses of $14,000. The provisions to the allowance for loan losses recorded during first quarter 2016 were attributable to an increase in the specific allowance for on-balance sheet impaired loans due to a modest increase in the balance of such loans. The provisions were partially offset by releases from the general allowance due to repayments of on-balance sheet Agricultural Storage and Processing loans. Farmer Mac recorded no charge-offs to its allowance for loan losses during first quarter 2016.

The following tables present the changes in the total allowance for losses for the three months ended March 31, 2017 and 2016 by commodity type:

Table 5.3

	March 31, 2017						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
For the Three Months Ended:							
Beginning Balance	$3,365	$ 1,723	$ 1,375	$ 405	$ 533	$ 34	$7,435
Provision for/(release of) losses	425	147	17	(81)	(61)	(3)	444
Charge-offs	(228)	—	(13)	—	—	—	(241)
Ending Balance	$3,562	$ 1,870	$ 1,379	$ 324	$ 472	$ 31	$7,638

	March 31, 2016						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
For the Three Months Ended:							
Beginning Balance	$2,791	$ 931	$ 1,781	$ 408	$ 649	$ 3	$6,563
Provision for/(release of) losses	101	6	(18)	36	(62)	—	63
Ending Balance	$2,892	$ 937	$ 1,763	$ 444	$ 587	$ 3	$6,626

The following tables present the unpaid principal balances of loans held and loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities (excluding AgVantage securities) and the related total allowance for losses by impairment method and commodity type as of March 31, 2017 and December 31, 2016:

Table 5.4

	As of March 31, 2017						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Ending Balance:							
Collectively evaluated for impairment:							
On-balance sheet	$2,144,328	$594,950	$573,922	$208,401	$ 13,640	$8,901	$3,544,142
Off-balance sheet	1,253,209	428,436	712,498	142,997	37,841	4,381	2,579,362
Total	$3,397,537	$1,023,386	$1,286,420	$351,398	$ 51,481	$13,282	$6,123,504
Individually evaluated for impairment:							
On-balance sheet	$53,568	$30,980	$7,396	$7,300	$ —	$—	$99,244
Off-balance sheet	10,078	2,268	4,666	707	—	—	17,719
Total	$63,646	$33,248	$12,062	$8,007	$ —	$—	$116,963
Total Farm & Ranch loans:							
On-balance sheet	$2,197,896	$625,930	$581,318	$215,701	$ 13,640	$8,901	$3,643,386
Off-balance sheet	1,263,287	430,704	717,164	143,704	37,841	4,381	2,597,081
Total	$3,461,183	$1,056,634	$1,298,482	$359,405	$ 51,481	$13,282	$6,240,467
Allowance for Losses:							
Collectively evaluated for impairment:							
On-balance sheet	$1,876	$667	$765	$155	$ 21	$26	$3,510
Off-balance sheet	446	260	217	33	451	5	1,412
Total	$2,322	$927	$982	$188	$ 472	$31	$4,922
Individually evaluated for impairment:							
On-balance sheet	$962	$936	$275	$128	$ —	$—	$2,301
Off-balance sheet	278	7	122	8	—	—	415
Total	$1,240	$943	$397	$136	$ —	$—	$2,716
Total Farm & Ranch loans:							
On-balance sheet	$2,838	$1,603	$1,040	$283	$ 21	$26	$5,811
Off-balance sheet	724	267	339	41	451	5	1,827
Total	$3,562	$1,870	$1,379	$324	$ 472	$31	$7,638

	As of December 31, 2016						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Ending Balance:							
Collectively evaluated for impairment:							
On-balance sheet	$2,115,450	$569,360	$537,859	$183,660	$ 11,545	$8,894	$3,426,768
Off-balance sheet	1,241,851	437,575	752,473	131,889	36,506	4,503	2,604,797
Total	$3,357,301	$1,006,935	$1,290,332	$315,549	$ 48,051	$13,397	$6,031,565
Individually evaluated for impairment:							
On-balance sheet	$41,648	$27,770	$10,658	$7,610	$ —	$—	$87,686
Off-balance sheet	11,549	2,735	4,854	915	—	—	20,053
Total	$53,197	$30,505	$15,512	$8,525	$ —	$—	$107,739
Total Farm & Ranch loans:							
On-balance sheet	$2,157,098	$597,130	$548,517	$191,270	$ 11,545	$8,894	$3,514,454
Off-balance sheet	1,253,400	440,310	757,327	132,804	36,506	4,503	2,624,850
Total	$3,410,498	$1,037,440	$1,305,844	$324,074	$ 48,051	$13,397	$6,139,304
Allowance for Losses:							
Collectively evaluated for impairment:							
On-balance sheet	$2,000	$652	$735	$193	$ 22	$28	$3,630
Off-balance sheet	420	281	241	54	511	6	1,513
Total	$2,420	$933	$976	$247	$ 533	$34	$5,143
Individually evaluated for impairment:							
On-balance sheet	$613	$770	$270	$132	$ —	$—	$1,785
Off-balance sheet	332	20	129	26	—	—	507
Total	$945	$790	$399	$158	$ —	$—	$2,292
Total Farm & Ranch loans:							
On-balance sheet	$2,613	$1,422	$1,005	$325	$ 22	$28	$5,415
Off-balance sheet	752	301	370	80	511	6	2,020
Total	$3,365	$1,723	$1,375	$405	$ 533	$34	$7,435

The following tables present by commodity type the unpaid principal balances, recorded investment, and specific allowance for losses related to impaired loans and the recorded investment in loans on nonaccrual status as of March 31, 2017 and December 31, 2016:

Table 5.5

	As of March 31, 2017						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Impaired Loans:							
With no specific allowance:							
Recorded investment	$7,603	$ 3,665	$ 791	$ 1,965	$ —	$ —	$14,024
Unpaid principal balance	7,619	3,669	791	1,970	—	—	14,049
With a specific allowance:							
Recorded investment(1)	55,927	29,515	11,149	6,026	—	—	102,617
Unpaid principal balance	56,027	29,579	11,271	6,037	—	—	102,914
Associated allowance	1,240	943	397	136	—	—	2,716
Total:							
Recorded investment	63,530	33,180	11,940	7,991	—	—	116,641
Unpaid principal balance	63,646	33,248	12,062	8,007	—	—	116,963
Associated allowance	1,240	943	397	136	—	—	2,716
Recorded investment of loans on nonaccrual status(2)	$17,801	$ 25,974	$ 1,941	$ 4,797	$ —	$ —	$50,513

(1) Impairment analysis was performed in the aggregate in consideration of similar risk characteristics of the assets and historical statistics on $101.0 million (87 percent) of impaired loans as of March 31, 2017, which resulted in a specific allowance of $2.3 million.

(2) Includes $1.0 million of loans that are less than 90 days delinquent but which have not met Farmer Mac's performance criteria for returning to accrual status.

	As of December 31, 2016						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Impaired Loans:							
With no specific allowance:							
Recorded investment	$20,761	$ 3,683	$ 1,054	$ 1,970	$ —	$ —	$27,468
Unpaid principal balance	20,816	3,688	1,055	1,975	—	—	27,534
With a specific allowance:							
Recorded investment(1)	32,326	26,748	14,322	6,535	—	—	79,931
Unpaid principal balance	32,381	26,817	14,457	6,550	—	—	80,205
Associated allowance	945	790	399	158	—	—	2,292
Total:							
Recorded investment	53,087	30,431	15,376	8,505	—	—	107,399
Unpaid principal balance	53,197	30,505	15,512	8,525	—	—	107,739
Associated allowance	945	790	399	158	—	—	2,292
	$13,405	$ 10,785	$ 2,696	$ 5,256	$ —	$ —	$32,142

Recorded investment of loans on nonaccrual status[(2)]

(1) Impairment analysis was performed in the aggregate in consideration of similar risk characteristics of the assets and historical statistics on $76.5 million (71 percent) of impaired loans as of December 31, 2016, which resulted in a specific allowance of $1.6 million.

(2) Includes $12.4 million of loans that are less than 90 days delinquent but which have not met Farmer Mac's performance criteria for returning to accrual status.

The following table presents by commodity type the average recorded investment and interest income recognized on impaired loans for the three months ended March 31, 2017 and 2016:

Table 5.6

	March 31, 2017						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
For the Three Months Ended:							
Average recorded investment in impaired loans	$58,309	$ 31,806	$ 13,658	$ 8,248	$ —	$ —	$112,021
Income recognized on impaired loans	302	152	177	103	—	—	734

	March 31, 2016						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
For the Three Months Ended:							
Average recorded investment in impaired loans	$23,555	$ 23,648	$ 16,318	$ 8,567	$ 4,919	$ —	$77,007
Income recognized on impaired loans	2	44	15	72	—	—	133

For the three months ended March 31, 2017 and 2016, there were no troubled debt restructurings ("TDRs"). As of March 31, 2017 and 2016, there were no TDRs identified during the previous 12 months that were in default under the modified terms. The impact of TDRs on Farmer Mac's allowance for loan losses was immaterial for the three months ended March 31, 2017 and 2016.

When particular criteria are met, such as the default of the borrower, Farmer Mac becomes entitled to purchase the defaulted loans underlying Farmer Mac Guaranteed Securities (commonly referred to as "removal-of-account" provisions). Farmer Mac records all such defaulted loans at their unpaid principal balance during the period in which Farmer Mac becomes entitled to purchase the loans and therefore regains effective control over the transferred loans. In accordance with the terms of all LTSPCs, Farmer Mac acquires loans that are either 90 days or 120 days delinquent (depending on the provisions of the applicable agreement) upon the request of the counterparty. Subsequent to the purchase, these defaulted loans are treated as nonaccrual loans and, therefore, interest is accounted for on the cash basis. Any decreases in expected cash flows are recognized as impairment.

During first quarter 2017, Farmer Mac purchased three defaulted loans having an aggregate unpaid principal balance of $0.3 million from pools underlying LTSPCs. During first quarter 2016, Farmer Mac purchased five defaulted loans having an aggregate unpaid principal balance of $1.4 million from pools underlying Farm & Ranch Guaranteed Securities and LTSPCs.

The following tables present information related to Farmer Mac's acquisition of defaulted loans for the three months ended March 31, 2017 and 2016 and the outstanding balances and carrying amounts of all such loans as of March 31, 2017 and December 31, 2016:

Table 5.7

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Unpaid principal balance at acquisition date:		
Loans underlying LTSPCs	$ 311	$ 1,267
Loans underlying off-balance sheet Farmer Mac Guaranteed Securities (excluding AgVantage securities)	—	148
Total unpaid principal balance at acquisition date	311	1,415
Contractually required payments receivable	311	1,435
Impairment recognized subsequent to acquisition	—	—
Recovery/release of allowance for all outstanding acquired defaulted loans	14	4

	As of	
	March 31, 2017	December 31, 2016
	(in thousands)	
Outstanding balance	$ 14,083	$ 14,669
Carrying amount	12,765	13,069

Net credit losses and 90-day delinquencies as of and for the periods indicated for loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs are presented in the table below. As of March 31, 2017, there were no delinquencies and no probable losses inherent in Farmer Mac's Rural Utilities loan portfolio and Farmer Mac had not experienced credit losses on any Rural Utilities loans.

Table 5.8

	90-Day Delinquencies[1]		Net Credit Losses	
	As of		For the Three Months Ended	
	March 31, 2017	December 31, 2016	March 31, 2017	March 31, 2016
	(in thousands)			
On-balance sheet assets:				
Farm & Ranch:				
Loans	$49,534	$ 19,757	$246	$ 39
Total on-balance sheet	$49,534	$ 19,757	$246	$ 39
Off-balance sheet assets:				
Farm & Ranch:				
LTSPCs	$1,273	$ 1,281	$—	$ —
Total off-balance sheet	$1,273	$ 1,281	$—	$ —
Total	$50,807	$ 21,038	$246	$ 39

(1) Includes loans and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs that are 90 days or more past due, in foreclosure, or in bankruptcy with at least one missed payment, excluding loans performing under either their original loan terms or a court-approved bankruptcy plan.

Of the $49.5 million of on-balance sheet loans reported as 90-day delinquencies as of March 31, 2017, $0.2 million were loans subject to "removal-of-account" provisions. Of the $19.8 million of on-balance sheet loans reported as 90-day delinquencies as of December 31, 2016, $0.1 million were loans subject to "removal-of-account" provisions.

Credit Quality Indicators

The following tables present credit quality indicators related to Farm & Ranch loans held and loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities as of March 31, 2017 and December 31, 2016:

Table 5.9

	As of March 31, 2017						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Credit risk profile by internally assigned grade[1]							
On-balance sheet:							
Acceptable	$2,104,716	$593,926	$542,790	$206,233	$ 13,640	$8,901	$3,470,206
Special mention[2]	39,725	1,024	31,132	2,168	—	—	74,049
Substandard[3]	53,455	30,980	7,396	7,300	—	—	99,131
Total on-balance sheet	$2,197,896	$625,930	$581,318	$215,701	$ 13,640	$8,901	$3,643,386
Off-Balance Sheet:							
Acceptable	$1,204,807	$395,331	$687,070	$138,332	$ 35,950	$3,805	$2,465,295
Special mention[2]	26,201	16,475	12,702	4,000	—	14	59,392
Substandard[3]	32,279	18,898	17,392	1,372	1,891	562	72,394
Total off-balance sheet	$1,263,287	$430,704	$717,164	$143,704	$ 37,841	$4,381	$2,597,081
Total Ending Balance:							
Acceptable	$3,309,523	$989,257	$1,229,860	$344,565	$ 49,590	$12,706	$5,935,501
Special mention[2]	65,926	17,499	43,834	6,168	—	14	133,441
Substandard[3]	85,734	49,878	24,788	8,672	1,891	562	171,525
Total	$3,461,183	$1,056,634	$1,298,482	$359,405	$ 51,481	$13,282	$6,240,467
Commodity analysis of past due loans[1]							
On-balance sheet	$23,484	$20,690	$2,612	$2,748	$ —	$—	$49,534
Off-balance sheet	880	—	—	393	—	—	1,273
90 days or more past due	$24,364	$20,690	$2,612	$3,141	$ —	$—	$50,807

(1) Amounts represent unpaid principal balance of risk-rated loans, which is the basis Farmer Mac uses to analyze its portfolio, and recorded investment of past due loans.

(2) Assets in the "Special mention" category generally have potential weaknesses due to performance issues but are currently considered to be adequately secured.

(3) Substandard assets have a well-defined weakness or weaknesses and there is a distinct possibility that some loss will be sustained if deficiencies are not corrected.

	As of December 31, 2016						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Credit risk profile by internally assigned grade[1]							
On-balance sheet:							
Acceptable	$2,080,227	$568,221	$504,784	$179,288	$ 11,545	$8,894	$3,352,959
Special mention[2]	35,223	1,139	33,075	4,372	—	—	73,809
Substandard[3]	41,648	27,770	10,658	7,610	—	—	87,686
Total on-balance sheet	$2,157,098	$597,130	$548,517	$191,270	$ 11,545	$8,894	$3,514,454
Off-Balance Sheet							
Acceptable	$1,201,144	$403,256	$724,056	$125,440	$ 34,537	$3,916	$2,492,349
Special mention[2]	20,422	16,881	15,341	2,344	—	6	54,994
Substandard[3]	31,834	20,173	17,930	5,020	1,969	581	77,507
Total off-balance sheet	$1,253,400	$440,310	$757,327	$132,804	$ 36,506	$4,503	$2,624,850
Total Ending Balance:							
Acceptable	$3,281,371	$971,477	$1,228,840	$304,728	$ 46,082	$12,810	$5,845,308
Special mention[2]	55,645	18,020	48,416	6,716	—	6	128,803
Substandard[3]	73,482	47,943	28,588	12,630	1,969	581	165,193
Total	$3,410,498	$1,037,440	$1,305,844	$324,074	$ 48,051	$13,397	$6,139,304
Commodity analysis of past due loans[1]							
On-balance sheet	$13,449	$3,245	$669	$2,394	$ —	$—	$19,757
Off-balance sheet	373	407	38	463	—	—	1,281
90 days or more past due	$13,822	$3,652	$707	$2,857	$ —	$—	$21,038

(1) Amounts represent unpaid principal balance of risk-rated loans, which is the basis Farmer Mac uses to analyze its portfolio, and recorded investment of past due loans.

(2) Assets in the "Special mention" category generally have potential weaknesses due to performance issues but are currently considered to be adequately secured.

(3) Substandard assets have a well-defined weakness or weaknesses and there is a distinct possibility that some loss will be sustained if deficiencies are not corrected.

Concentrations of Credit Risk

The following table sets forth the geographic and commodity/collateral diversification, as well as the range of original loan-to-value ratios, for all Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs as of March 31, 2017 and December 31 2016:

Table 5.10

	As of March 31, 2017	December 31, 2016
	(in thousands)	
By commodity/collateral type:		
Crops	$3,461,183	$3,410,498
Permanent plantings	1,056,634	1,037,440
Livestock	1,298,482	1,305,844
Part-time farm	359,405	324,074
Ag. Storage and Processing	51,481	48,051
Other	13,282	13,397
Total	$6,240,467	$6,139,304
By geographic region[1]:		
Northwest	$688,304	$657,403
Southwest	1,796,177	1,791,745
Mid-North	2,151,503	2,104,867
Mid-South	858,319	837,121
Northeast	237,968	229,679
Southeast	508,196	518,489
Total	$6,240,467	$6,139,304
By original loan-to-value ratio:		
0.00% to 40.00%	$1,783,420	$1,740,792
40.01% to 50.00%	1,431,980	1,401,630
50.01% to 60.00%	1,719,971	1,706,099
60.01% to 70.00%	1,064,391	1,086,295
70.01% to 80.00%	204,639	180,142
80.01% to 90.00%	36,066	24,346
Total	$6,240,467	$6,139,304

(1) Geographic regions: Northwest (AK, ID, MT, OR, WA, WY); Southwest (AZ, CA, CO, HI, NM, NV, UT); Mid-North (IA, IL, IN, MI, MN, NE, ND, SD, WI); Mid-South (AR, KS, LA, MO, OK, TX); Northeast (CT, DE, KY, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VA, VT, WV); Southeast (AL, FL, GA, MS, NC, SC, TN).

The original loan-to-value ratio is calculated by dividing the loan principal balance at the time of guarantee, purchase, or commitment by the appraised value at the date of loan origination or, when available, the updated appraised value at the time of guarantee, purchase, or commitment. Current loan-to-value ratios may be higher or lower than the original loan-to-value ratios.

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6. GUARANTEES AND LONG-TERM STANDBY PURCHASE COMMITMENTS

Farmer Mac offers two credit enhancement alternatives to direct loan purchases that allow approved lenders the ability to retain the cash flow benefits of their loans and increase their liquidity and lending capacity: (1) Farmer Mac Guaranteed Securities, which are available through each of the Farm & Ranch, USDA Guarantees, Rural Utilities, and Institutional Credit lines of business, and (2) LTSPCs, which are available through the Farm & Ranch or the Rural Utilities lines of business.

The following table presents the maximum principal amount of potential undiscounted future payments that Farmer Mac could be required to make under all off-balance sheet Farmer Mac Guaranteed Securities as of March 31, 2017 and December 31, 2016, not including offsets provided by any recourse provisions, recoveries from third parties, or collateral for the underlying loans:

Table 6.1
Outstanding Balance of Off-Balance Sheet Farmer Mac Guaranteed Securities

	As of March 31, 2017	As of December 31, 2016
	(in thousands)	
Farm & Ranch:		
Guaranteed Securities	$387,272	$415,441
USDA Guarantees:		
Farmer Mac Guaranteed USDA Securities	135,334	103,976
Institutional Credit:		
AgVantage Securities	983,214	983,214
Revolving floating rate AgVantage facility(1)	300,000	300,000
Total off-balance sheet Farmer Mac Guaranteed Securities	$1,805,820	$1,802,631

(1) Relates to a revolving floating rate AgVantage facility subject to specified contractual terms. Farmer Mac receives a fixed fee based on the full dollar amount of the facility.

Eligible loans and other eligible assets may be placed into trusts that are used as vehicles for the securitization of the transferred assets and the Farmer Mac-guaranteed beneficial interests in the trusts are sold to investors. The following table summarizes the significant cash flows received from and paid to trusts used for Farmer Mac securitizations:

Table 6.2

	For the Three Months Ended March 31, 2017	March 31, 2016
	(in thousands)	
Proceeds from new securitizations	$149,607	$139,561
Guarantee fees received	488	561
Purchases of assets from the trusts	—	(1,267)

Farmer Mac has recorded a liability for its obligation to stand ready under the guarantee in the guarantee and commitment obligation on the consolidated balance sheets. This liability approximated $4.7 million as of March 31, 2017 and $5.5 million as of December 31, 2016. As of March 31, 2017 and December 31, 2016, the weighted-average remaining maturity of all loans underlying off-balance sheet Farmer Mac Guaranteed Securities, excluding AgVantage securities, was 10.6 years and 10.7 years, respectively. As of March 31, 2017 and December 31, 2016, the weighted-average remaining maturity of the off-balance sheet AgVantage securities was 0.4 years and 0.7 years, respectively.

Long-Term Standby Purchase Commitments

An LTSPC is a commitment by Farmer Mac to purchase eligible loans from an identified pool of loans under specified circumstances set forth in the applicable agreement, either for cash or in exchange for Farmer Mac Guaranteed Securities, on one or more undetermined future dates. As consideration for its assumption of the credit risk on loans underlying an LTSPC, Farmer Mac receives a commitment fee payable monthly in arrears in an amount approximating what would have been the guarantee fee if the transaction were structured as a swap for Farmer Mac Guaranteed Securities.

The maximum principal amount of potential undiscounted future payments that Farmer Mac could be requested to make under all LTSPCs, not including offsets provided by any recourse provisions, recoveries from third parties, or collateral for the underlying loans, was $3.1 billion as of both March 31, 2017 and December 31, 2016.

As of March 31, 2017 and December 31, 2016, the weighted-average remaining maturity of all loans underlying LTSPCs was 15.2 years and 15.1 years, respectively. For those LTSPCs issued or modified on or after January 1, 2003, Farmer Mac has recorded a liability for its obligation to stand ready under the commitment in the guarantee and commitment obligation on the consolidated balance sheets. This liability approximated $32.1 million as of March 31, 2017 and $31.8 million as of December 31, 2016.

7. EQUITY

Common Stock

On September 8, 2015, Farmer Mac's board of directors approved a share repurchase program authorizing Farmer Mac to repurchase up to $25 million of its outstanding Class C non-voting common stock through September 8, 2017. As of March 31, 2017, Farmer Mac had repurchased approximately 668,000 shares of Class C non-voting common stock at a cost of approximately $19.6 million pursuant to the share repurchase program.

Capital Requirements

Farmer Mac is subject to the following capital requirements:

- Statutory minimum capital requirement – Farmer Mac's statutory minimum capital level is an amount of core capital (stockholders' equity less accumulated other comprehensive income) equal to the sum of 2.75 percent of Farmer Mac's aggregate on-balance sheet assets, as calculated for regulatory purposes, plus 0.75 percent of the aggregate off-balance sheet obligations of Farmer Mac, specifically including:
  - the unpaid principal balance of outstanding Farmer Mac Guaranteed Securities;
  - instruments issued or guaranteed by Farmer Mac that are substantially equivalent to Farmer Mac Guaranteed Securities, including LTSPCs; and
  - other off-balance sheet obligations of Farmer Mac.
- Statutory critical capital requirement – Farmer Mac's critical capital level is an amount of core capital equal to 50 percent of the total minimum capital requirement at that time.

- Risk-based capital requirement – Farmer Mac's charter directs FCA to establish a risk-based capital stress test for Farmer Mac, using specified stress-test parameters.

Farmer Mac is required to comply with the higher of the minimum capital requirement and the risk-based capital requirement. As of both March 31, 2017 and December 31, 2016, the minimum capital requirement was greater than the risk-based capital requirement. Farmer Mac's ability to declare and pay dividends could be restricted if it fails to comply with applicable capital requirements.

As of March 31, 2017, Farmer Mac's minimum capital requirement was $475.6 million and its core capital level was $624.3 million, which was $148.7 million above the minimum capital requirement as of that date. As of December 31, 2016, Farmer Mac's minimum capital requirement was $466.5 million and its core capital level was $609.7 million, which was $143.2 million above the minimum capital requirement as of that date.

In accordance with FCA's rule on Farmer Mac's capital planning, and as part of Farmer Mac's capital plan, Farmer Mac has adopted a policy for maintaining a sufficient level of Tier 1 capital (consisting of retained earnings, paid-in-capital, common stock, and qualifying preferred stock) and imposing restrictions on Tier 1-eligible dividends and any discretionary bonus payments in the event that this capital falls below specified thresholds.

8. FAIR VALUE DISCLOSURES

As of March 31, 2017, Farmer Mac's assets and liabilities recorded at fair value included financial instruments valued at $5.3 billion whose fair values were estimated by management in the absence of readily determinable fair values (i.e., level 3). These financial instruments measured as level 3 represented 33 percent of total assets and 68 percent of financial instruments measured at fair value as of March 31, 2017. As of December 31, 2016, Farmer Mac's assets and liabilities recorded at fair value included financial instruments valued at $4.9 billion whose fair values were estimated by management in the absence of readily determinable fair values. These financial instruments measured as level 3 represented 31 percent of total assets and 65 percent of financial instruments measured at fair value as of December 31, 2016.

Net transfers in and/or out of the different levels within the fair value hierarchy are based on the fair values of the assets and liabilities as of the beginning of the reporting period. During the first three months of 2017 there was one transfer within fair value hierarchy from Level 2 to Level 3 for the fair value measurement of a fixed-rate GSE guaranteed mortgage-backed security (interest only strip). The transfer to Level 3 was because unobservable inputs became significant to the overall estimate of the fair value of the security as of March 31, 2017. There were no transfers within the fair value hierarchy for fair value measurements of Farmer Mac's investment securities, Farmer Mac Guaranteed Securities, USDA Securities, and financial derivatives during the first three months of 2016. See Note 3 for information about the transfer of available-for-sale USDA and Farmer Mac Guaranteed USDA securities to held-to-maturity as of October 1, 2016.

The following tables present information about Farmer Mac's assets and liabilities measured at fair value on a recurring and non-recurring basis as of March 31, 2017 and December 31, 2016, respectively, and indicate the fair value hierarchy of the valuation techniques used by Farmer Mac to determine such fair value:

Table 8.1
Assets and Liabilities Measured at Fair Value as of March 31, 2017

	Level 1	Level 2	Level 3	Total
	(in thousands)			
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$—	$—	$18,124	$18,124
Floating rate asset-backed securities	—	40,370	—	40,370
Floating rate corporate debt securities	—	10,060	—	10,060
Floating rate Government/GSE guaranteed mortgage-backed securities	—	1,344,690	—	1,344,690
Fixed rate GSE guaranteed mortgage-backed securities	—	558	4,819	5,377
Floating rate GSE subordinated debt	—	67,576	—	67,576
Fixed rate senior agency debt	—	187,065	—	187,065
Fixed rate U.S. Treasuries	805,982	—	—	805,982
Total Investment Securities	805,982	1,650,319	22,943	2,479,244
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	5,243,046	5,243,046
Total Farmer Mac Guaranteed Securities	—	—	5,243,046	5,243,046
USDA Securities:				
Trading	—	—	18,602	18,602
Total USDA Securities	—	—	18,602	18,602
Financial derivatives	8	2,666	—	2,674
Total Assets at fair value	$805,990	$1,652,985	$5,284,591	$7,743,566
Liabilities:				
Financial derivatives	$—	$32,054	$—	$32,054
Total Liabilities at fair value	$—	$32,054	$—	$32,054
Non-recurring:				
Assets:				
Loans held for investment	$—	$—	$1,260	$1,260
REO	—	—	4,978	4,978
Total Non-recurring Assets at fair value	$—	$—	$6,238	$6,238

Assets and Liabilities Measured at Fair Value as of December 31, 2016

	Level 1	Level 2	Level 3	Total
	(in thousands)			
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$—	$—	$17,730	$17,730
Floating rate asset-backed securities	—	43,851	—	43,851
Floating rate corporate debt securities	—	10,041	—	10,041
Floating rate Government/GSE guaranteed mortgage-backed securities	—	1,361,029	—	1,361,029
Fixed rate GSE guaranteed mortgage-backed securities	—	7,625	—	7,625
Floating rate GSE subordinated debt	—	66,953	—	66,953
Fixed rate senior agency debt	—	187,133	—	187,133
Fixed rate U.S. Treasuries	821,489	—	—	821,489
Total Investment Securities	821,489	1,676,632	17,730	2,515,851
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	4,853,685	4,853,685
Total Farmer Mac Guaranteed Securities	—	—	4,853,685	4,853,685
USDA Securities:				
Trading	—	—	20,388	20,388
Total USDA Securities	—	—	20,388	20,388
Financial derivatives	—	23,182	—	23,182
Total Assets at fair value	$821,489	$1,699,814	$4,891,803	$7,413,106
Liabilities:				
Financial derivatives	$155	$57,997	$—	$58,152
Total Liabilities at fair value	$155	$57,997	$—	$58,152
Non-recurring:				
Assets:				
Loans held for investment	$—	$—	$2,799	$2,799
REO	$—	$—	$349	$349
Total Non-recurring Assets at fair value	$—	$—	$3,148	$3,148

The following tables present additional information about assets and liabilities measured at fair value on a recurring basis for which Farmer Mac has used significant unobservable inputs to determine fair value. Net transfers in and/or out of level 3 are based on the fair values of the assets and liabilities as of the beginning of the reporting period. There were no liabilities measured at fair value using significant unobservable inputs during the three months ended March 31, 2017 and 2016.

Table 8.2

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended March 31, 2017

	Beginning Balance	Transfers in	Purchases	Sales	Settlements	Realized and Unrealized Gains/(Losses) included in Income	Unrealized Gains/(Losses) included in Other Comprehe-nsive Income	Ending Balance
	(in thousands)							
Recurring:								
Assets:								
Investment Securities:								
Available-for-sale:								
Floating rate auction-rate certificates backed by Government guaranteed student loans	$17,730	—	$—	$—	$—	$ —	$ 394	$18,124
Fixed rate GSE guaranteed mortgage-backed securities	—	7,041	—	—	(112)	—	(2,110)	4,819
Total available-for-sale	17,730	7,041	—	—	(112)	—	(1,716)	22,943
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	4,853,685	—	539,527	—	(161,907)	(3,215)	14,956	5,243,046
Total available-for-sale	4,853,685	—	539,527	—	(161,907)	(3,215)	14,956	5,243,046
USDA Securities:								
Available-for-sale	—	—	32,589	(32,589)	—	—	—	—
Trading(1)	20,388	—	—	—	(1,704)	(82)	—	18,602
Total USDA Securities	20,388	—	32,589	(32,589)	(1,704)	(82)	—	18,602
Total Assets at fair value	$4,891,803	$7,041	$572,116	$(32,589)	$(163,723)	$ (3,297)	$ 13,240	$5,284,591

(1) Includes unrealized losses of $44,000 attributable to assets still held as of March 31, 2017 that are recorded in "(Losses)/gains on trading securities."

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Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended March 31, 2016

	Beginning Balance	Purchases	Sales	Settlements	Realized and Unrealized (Losses)/Gains included in Income	Unrealized Gains/(Losses) included in Other Comprehen-sive Income	Ending Balance
	(in thousands)						
Recurring:							
Assets:							
Investment Securities:							
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	$44,924	$—	$(26,806)	$—	$ 6	$ (394)	$17,730
Total available-for-sale	44,924	—	(26,806)	—	6	(394)	17,730
Trading:							
Floating rate asset-backed securities[1]	491	—	—	(206)	98	—	383
Total trading	491	—	—	(206)	98	—	383
Total Investment Securities	45,415	—	(26,806)	(206)	104	(394)	18,113
Farmer Mac Guaranteed Securities:							
Available-for-sale:							
AgVantage	4,121,244	915,531	—	(512,530)	24,298	(13,733)	4,534,810
Farmer Mac Guaranteed USDA Securities	31,361	—	—	(498)	—	(169)	30,694
Total Farmer Mac Guaranteed Securities	4,152,605	915,531	—	(513,028)	24,298	(13,902)	4,565,504
USDA Securities:							
Available-for-sale	1,888,344	98,974	(3,648)	(84,193)	—	8,537	1,908,014
Trading[2]	28,975	—	—	(2,365)	259	—	26,869
Total USDA Securities	1,917,319	98,974	(3,648)	(86,558)	259	8,537	1,934,883
Total Assets at fair value	$6,115,339	$1,014,505	$(30,454)	$(599,792)	$ 24,661	$ (5,759)	$6,518,500

(1) Unrealized gains are attributable to assets still held as of March 31, 2016 and are recorded in "(Losses)/gains on trading securities."

(2) Includes unrealized gains of $0.2 million attributable to assets still held as of March 31, 2016 that are recorded in "(Losses)/gains on trading securities."

The following tables present additional information about the significant unobservable inputs, such as discount rates and constant prepayment rates ("CPR"), used in the fair value measurements categorized in level 3 of the fair value hierarchy as of March 31, 2017 and December 31, 2016.

Table 8.3

	As of March 31, 2017			
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
	(in thousands)			
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$18,124	Indicative bids	Range of broker quotes	92.0% - 92.0% (92.0%)
Fixed rate GSE guaranteed mortgage-backed securities	$4,819	Discounted cash flow	Discount rate	3.4%
			CPR	0 %
Farmer Mac Guaranteed Securities:				
AgVantage	$5,243,046	Discounted cash flow	Discount rate	1.7% - 3.3% (2.0%)
USDA Securities	$18,602	Discounted cash flow	Discount rate	3.7% - 5.3% (5.0%)
			CPR	9% - 19% (17%)

	As of December 31, 2016			
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
	(in thousands)			
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$17,730	Indicative bids	Range of broker quotes	90.0% - 90.0% (90.0%)
Farmer Mac Guaranteed Securities:				
AgVantage	$4,853,685	Discounted cash flow	Discount rate	1.5% - 3.3% (1.9%)
USDA Securities	$20,388	Discounted cash flow	Discount rate	4.0% - 5.3% (5.0%)
			CPR	13% - 18% (17%)

The significant unobservable inputs used in the fair value measurements of Farmer Mac Guaranteed Securities and USDA Securities are prepayment rates and discount rates commensurate with the risks involved. Typically, significant increases (decreases) in any of these inputs in isolation may result in materially lower (higher) fair value measurements. Generally, in a rising interest rate environment, Farmer Mac would expect average discount rates to increase and would likely expect a corresponding decrease in forecasted prepayment rates. Conversely, in a declining interest rate environment, Farmer Mac would expect average discount rates to decrease and would likely expect a corresponding increase in forecasted prepayment rates. Prepayment rates are not presented in the table above for AgVantage securities because they generally do not pay down principal based on amortization schedules but instead typically have fixed maturity dates when the secured general obligations are due.

Disclosures on Fair Value of Financial Instruments

The following table sets forth the estimated fair values and carrying values for financial assets, liabilities, and guarantees and commitments as of March 31, 2017 and December 31, 2016:

Table 8.4

	As of March 31, 2017		As of December 31, 2016	
	Fair Value	Carrying Amount	Fair Value	Carrying Amount
	(in thousands)			
Financial assets:				
Cash and cash equivalents	$313,641	$313,641	$265,229	$265,229
Investment securities	2,479,244	2,479,244	2,515,851	2,515,851
Farmer Mac Guaranteed Securities	6,321,194	6,317,732	6,006,694	6,002,916
USDA Securities	1,978,216	2,044,424	1,934,023	2,029,613
Loans	4,663,885	4,635,230	4,481,019	4,507,435
Financial derivatives	2,674	2,674	23,182	23,182
Guarantee and commitment fees receivable:				
LTSPCs	34,137	32,926	34,720	32,656
Farmer Mac Guaranteed Securities	5,791	5,822	6,197	6,215
Financial liabilities:				
Notes payable:				
Due within one year	7,613,484	7,616,431	8,439,515	8,440,123
Due after one year	6,345,661	6,300,750	5,260,497	5,222,977
Debt securities of consolidated trusts held by third parties	1,199,226	1,212,792	1,107,513	1,142,704
Financial derivatives	32,054	32,054	58,152	58,152
Guarantee and commitment obligations:				
LTSPCs	33,300	32,089	33,860	31,796
Farmer Mac Guaranteed Securities	4,682	4,713	5,467	5,486

The carrying value of cash and cash equivalents is a reasonable estimate of their approximate fair value and is classified as level 1 within the fair value hierarchy. Investment securities primarily are valued based on unadjusted quoted prices in active markets and are classified as level 2 within the fair value hierarchy. Farmer Mac internally models the fair value of its loan portfolio, including loans held for investment and loans held for investment in consolidated trusts, Farmer Mac Guaranteed Securities, and USDA Securities by discounting the projected cash flows of these instruments at projected interest rates. The fair values are based on the present value of expected cash flows using management's best estimate of certain key assumptions, which include prepayment speeds, forward yield curves and discount rates commensurate with the risks involved. These fair value measurements do not take into consideration the fair value of the underlying property and are classified as level 3 within the fair value hierarchy. Financial derivatives primarily are valued using unadjusted counterparty valuations and are classified as level 2 within the fair value hierarchy. The fair value of the guarantee fees receivable/obligation and debt securities of consolidated trusts are estimated based on the present value of expected future cash flows of the underlying mortgage assets using management's best estimate of certain key assumptions, which include prepayments speeds, forward yield curves, and discount rates commensurate with the risks involved and are classified as level 3 within the fair value hierarchy. Notes payable are valued by discounting the expected cash flows of these instruments using a yield curve derived from market prices observed for similar agency securities and are also classified as level 3 within the fair value hierarchy. Because the cash flows of Farmer Mac's financial

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instruments may be interest rate path dependent, estimated fair values and projected discount rates for level 3 financial instruments are derived using a Monte Carlo simulation model. Different market assumptions and estimation methodologies could significantly affect estimated fair value amounts.

9. BUSINESS SEGMENT REPORTING

The following tables present core earnings for Farmer Mac's operating segments and a reconciliation to consolidated net income for the three months ended March 31, 2017 and 2016:

Table 9.1

Core Earnings by Business Segment
For the Three Months Ended March 31, 2017

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	(in thousands)						
Net interest income	$12,754	$5,283	$2,948	$13,502	$2,584	$—	$37,071
Less: reconciling adjustments[1][2][3]	(2,070)	(580)	(309)	(921)	(325)	4,205	—
Net effective spread	10,684	4,703	2,639	12,581	2,259	4,205	—
Guarantee and commitment fees[2]	4,295	74	492	455	—	(1,472)	3,844
Other income/(expense)[3][4]	194	14	5	—	843	1,896	2,952
Non-interest income/(loss)	4,489	88	497	455	843	424	6,796
Provision for loan losses	(637)	—	—	—	—	—	(637)
Release of reserve for losses	193	—	—	—	—	—	193
Other non-interest expense	(4,065)	(1,087)	(587)	(1,521)	(3,482)	—	(10,742)
Non-interest expense[5]	(3,872)	(1,087)	(587)	(1,521)	(3,482)	—	(10,549)
Core earnings before income taxes	10,664	3,704	2,549	11,515	(380)	4,629 [6]	32,681
Income tax (expense)/benefit	(3,732)	(1,296)	(892)	(4,030)	785	(1,621)	(10,786)
Core earnings before preferred stock dividends and attribution of income to non-controlling interest	6,932	2,408	1,657	7,485	405	3,008 [6]	21,895
Preferred stock dividends	—	—	—	—	(3,295)	—	(3,295)
Non-controlling interest	—	—	—	—	15	—	15
Segment core earnings/(losses)	$6,932	$2,408	$1,657	$7,485	$(2,875)	$3,008 [6]	$18,615
Total assets at carrying value	$3,693,360	$2,109,264	$1,005,187	$6,315,591	$2,808,355	$—	$15,931,757

Total on- and off-balance sheet program assets at principal balance	$6,240,467	$2,149,697	$1,868,794	$7,585,583	—	$17,844,541

(1) Excludes the amortization of premiums and discounts on assets consolidated at fair value, originally included in interest income, to reflect core earnings amounts.

(2) Includes the reclassification of interest income and interest expense from consolidated trusts owned by third parties to guarantee and commitment fees, to reflect management's view that the net interest income Farmer Mac earns is effectively a guarantee fee.

(3) Includes the reclassification of interest expense related to interest rate swaps not designated as hedges, which are included in "Gains/(losses) on financial derivatives and hedging activities" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) Includes reconciling adjustments for fair value adjustments on financial derivatives and trading assets. Also includes a reconciling adjustment related to the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities. In 2016 and prior periods, fair value adjustments on financial derivatives included variation margin payment amounts because those amounts were considered to be collateral of the related exposure and were accounted for as unrealized gains or losses. However, effective first quarter 2017, CME implemented a change in its rules related to the exchange of variation margin, whereby variation margin payments are considered to be a partial settlement of the respective derivatives contracts rather than as pledged collateral, and accounted for as realized gains and losses. See Note 4 for more information about this rule change. Farmer Mac believes that even though these variation margin amounts are now accounted for as realized gains or losses on financial derivatives and hedging activities as a result of the CME rule change, their economic character will remain the same as they were before the change. The exchange of variation margin, whether considered a partial settlement of or the pledge of collateral under a derivatives contract, is not expected to have a cumulative net impact on Farmer Mac's financial condition or results of operations reported in accordance with GAAP because the related financial instruments are expected to be held to maturity. Therefore, beginning in 2017, this reconciling adjustment includes realized gains and losses on financial derivatives centrally cleared through CME resulting from the exchange of variation margin. As a result, core earnings subsequent to 2016 will be presented on a consistent basis with core earnings in 2016 and prior periods.

(5) Includes directly attributable costs and an allocation of indirectly attributable costs based on staffing.

(6) Net adjustments to reconcile to the corresponding income measures: core earnings before income taxes reconciled to income before income taxes; core earnings before preferred stock dividends and attribution of income to non-controlling interest reconciled to net income; and segment core earnings reconciled to net income attributable to common stockholders.

Core Earnings by Business Segment
For the Three Months Ended March 31, 2016

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	(in thousands)						
Net interest income	$11,127	$5,052	$2,864	$11,749	$2,848	$—	$33,640
Less: reconciling adjustments[1][2][3]	(1,666)	(744)	(326)	(659)	(296)	3,691	—
Net effective spread	9,461	4,308	2,538	11,090	2,552	3,691	—
Guarantee and commitment fees[2]	3,909	7	295	458	—	(1,043)	3,626
Other income/(expense)[3][4]	97	58	—	—	(672)	(5,815)	(6,332)
Non-interest income/(loss)	4,006	65	295	458	(672)	(6,858)	(2,706)
Provision for loan losses	(49)	—	—	—	—	—	(49)
Release of reserve for losses	(14)	—	—	—	—	—	(14)
Other non-interest expense	(4,161)	(1,093)	(831)	(539)	(3,328)	—	(9,952)
Non-interest expense[5]	(4,175)	(1,093)	(831)	(539)	(3,328)	—	(9,966)
Core earnings before income taxes	9,243	3,280	2,002	11,009	(1,448)	(3,167) [6]	20,919
Income tax (expense)/benefit	(3,236)	(1,148)	(701)	(3,852)	493	1,109	(7,335)
Core earnings before preferred stock dividends and attribution of income to non-controlling interest	6,007	2,132	1,301	7,157	(955)	(2,058) [6]	13,584
Preferred stock dividends	—	—	—	—	(3,295)	—	(3,295)
Non-controlling interest	—	—	—	—	28	—	28
Segment core earnings/(losses)	$6,007	$2,132	$1,301	$7,157	$(4,222)	$(2,058) [6]	$10,317
Total assets at carrying value	$3,115,749	$1,987,855	$1,002,691	$5,731,346	$4,318,387	$—	$16,156,028
Total on- and off-balance sheet program assets at principal balance	$5,713,789	$1,929,582	$1,510,575	$7,061,626		—	$16,215,572

(1) Excludes the amortization of premiums and discounts on assets consolidated at fair value, originally included in interest income, to reflect core earnings amounts.

(2) Includes the reclassification of interest income and interest expense from consolidated trusts owned by third parties to guarantee and commitment fees, to reflect management's view that the net interest income Farmer Mac earns is effectively a guarantee fee.

(3) Includes the reclassification of interest expense related to interest rate swaps not designated as hedges, which are included in "Gains/(losses) on financial derivatives and hedging activities" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) Includes reconciling adjustments for fair value adjustments on financial derivatives and trading assets. Also includes a reconciling adjustment related to the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities.

(5) Includes directly attributable costs and an allocation of indirectly attributable costs based on staffing.

(6) Net adjustments to reconcile to the corresponding income measures: core earnings before income taxes reconciled to income before income taxes; core earnings before preferred stock dividends and attribution of income to non-controlling interest reconciled to net income; and segment core earnings reconciled to net income attributable to common stockholders.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Financial information included in this report is consolidated to include the accounts of Farmer Mac and its three subsidiaries – Farmer Mac Mortgage Securities Corporation, Farmer Mac II LLC, and Contour Valuation Services, LLC (which began doing business as AgVisory during first quarter 2016) ("AgVisory"). This discussion and analysis of financial condition and results of operations should be read together with: (1) the interim unaudited consolidated financial statements and the related notes that appear elsewhere in this report; and (2) Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 filed with the SEC on March 9, 2017.

FORWARD-LOOKING STATEMENTS

Some statements made in this report, and in particular in the "Management's Discussion & Analysis of Financial Condition and Results of Operations" section, are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 pertaining to management's current expectations as to Farmer Mac's future financial results, business prospects, and business developments. Forward-looking statements include, without limitation, any statement that may predict, forecast, indicate, or imply future results, performance, or achievements. These statements typically are accompanied by, and identified with, terms such as "anticipates," "believes," "expects," "intends," "plans," "potential," "may," "should," and similar phrases. This report includes forward-looking statements addressing Farmer Mac's:

- prospects for earnings;
- prospects for growth in business volume;
- trends in net interest income and net effective spread;
- trends in portfolio credit quality, delinquencies, substandard assets, credit losses, and provisions for losses;
- trends in expenses;
- trends in investment securities;
- prospects for asset impairments and allowance for losses;
- changes in capital position;
- future dividend payments; and
- other business and financial matters.

Management's expectations for Farmer Mac's future necessarily involve a number of assumptions and estimates and the evaluation of risks and uncertainties. Various factors or events, both known and unknown, could cause Farmer Mac's actual results to differ materially from the expectations as expressed or implied by the forward-looking statements, including the factors discussed under "Risk Factors" in Part I, Item 1A of Farmer Mac's Annual Report on Form 10-K for the fiscal period ended December 31, 2016 filed with the SEC on March 9, 2017, and uncertainties regarding:

- the availability to Farmer Mac of debt and equity financing and, if available, the reasonableness of rates and terms;
- legislative or regulatory developments that could affect Farmer Mac, its sources of business, or the agricultural or rural utilities industries;
- fluctuations in the fair value of assets held by Farmer Mac and its subsidiaries;

- the rate and direction of development of the secondary market for agricultural mortgage and rural utilities loans, including lender interest in Farmer Mac's products and the secondary market provided by Farmer Mac;
- the general rate of growth in agricultural mortgage and rural utilities indebtedness;
- the effect of economic conditions, including the effects of drought and other weather-related conditions and fluctuations in agricultural real estate values, on agricultural mortgage lending and borrower repayment capacity;
- developments in the financial markets, including possible investor, analyst, and rating agency reactions to events involving government-sponsored enterprises, including Farmer Mac;
- changes in the level and direction of interest rates, which could, among other things, affect the value of collateral securing Farmer Mac's agricultural mortgage loan assets;
- the degree to which Farmer Mac is exposed to basis risk, which results from fluctuations in Farmer Mac's borrowing costs relative to market indexes such as LIBOR; and
- volatility in commodity prices relative to costs of production and/or export demand for U.S. agricultural products.

In light of these potential risks and uncertainties, no undue reliance should be placed on any forward-looking statements expressed in this report. Furthermore, Farmer Mac undertakes no obligation to release publicly the results of revisions to any forward-looking statements that may be made to reflect new information or any future events or circumstances, except as otherwise mandated by the SEC. The information contained in this report is not necessarily indicative of future results.

Overview

Farmer Mac increased its outstanding business volume by $0.4 billion from the end of 2016 to $17.8 billion as of March 31, 2017. The primary driver of this increase was net growth in AgVantage securities of $0.3 billion in the Institutional Credit line of business. Farmer Mac also grew its Farm & Ranch loan portfolio by $0.1 billion during first quarter 2017 notwithstanding the seasonally large amount of repayments that result from the January 1 payment date on almost all loans in the portfolio. Farmer Mac's total allowance for losses and substandard assets both increased modestly in dollars (but not as a percent of the Farm & Ranch portfolio) during first quarter 2017 compared to fourth quarter 2016. 90-day delinquencies as of March 31, 2017 increased more significantly, in terms of both dollars and percent of the Farm & Ranch portfolio compared to year-end 2016 levels but remained below Farmer Mac's historical average. Farmer Mac also increased the quarterly dividend on all three classes of Farmer Mac common stock to $0.36 per share in first quarter 2017, which was a 38 percent increase over the quarterly dividend amount paid during 2016.

The discussion below of Farmer Mac's financial information includes certain "non-GAAP measures," which are measures of financial performance that are not presented in accordance with generally accepted accounting principles in the United States ("GAAP"). For more information about the non-GAAP measures Farmer Mac uses, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures."

Net Income and Core Earnings

Farmer Mac's net income attributable to common stockholders for first quarter 2017 was $18.6 million, compared to $25.5 million in fourth quarter 2016 and $10.3 million in first quarter 2016.

The $6.9 million sequential decrease was driven by the effects of fair value changes on financial derivatives and hedged assets, which was a $3.1 million after-tax gain in first quarter 2017 compared to a $11.2 million after-tax gain in fourth quarter 2016. The decrease was offset in part by (1) $0.7 million of tax benefits from the vesting of restricted stock and the exercise of stock appreciation rights ("SARs"), both of which were accounted for under new accounting guidance described in Note 1(d) to the consolidated financial statements that became effective in first quarter 2017; and (2) an increase in net interest income of $0.2 million, after tax.

The $8.3 million year-over-year increase was driven by the effects of fair value changes on financial derivatives and hedged assets, which was a $3.1 million after-tax gain in first quarter 2017 compared to a $1.9 million after-tax loss in first quarter 2016. Also contributing to the year-over-year increase was (1) an increase in net interest income of $2.2 million, after tax; and (2) $0.7 million of the aforementioned tax benefits from stock-based awards.

Farmer Mac's non-GAAP core earnings for first quarter 2017 were $15.6 million, compared to $13.9 million in fourth quarter 2016 and $12.4 million in first quarter 2016.

The $1.7 million sequential increase in core earnings was primarily attributable to (1) higher total revenues, which included a $0.6 million after-tax increase in net effective spread and a $0.1 million after-tax increase in guarantee and commitment fee income, partially offset by a $0.1 million after-tax decrease in other income; and (2) $0.7 million of the aforementioned tax benefits from stock-based awards. Also contributing to the sequential increase in core earnings was a decrease in operating expenses of $0.1

million, after tax, as an increase in compensation and employee benefits expense was more than offset by the decrease in general and administrative ("G&A") expenses. The $0.3 million after-tax decrease in G&A expenses was driven by seasonally lower consulting expenses in first quarter 2017. The $0.2 million after-tax increase in compensation and employee benefits expense resulted from the annual vesting of stock-based awards and higher payroll taxes.

The $3.2 million year-over-year increase in core earnings was primarily attributable to higher total revenues, which included (1) a $1.9 million after-tax increase in net effective spread; (2) a $0.4 million after-tax increase in guarantee and commitment fee income; (3) a $0.6 million after-tax increase in fees received upon the inception of swaps cleared through the Chicago Mercantile Exchange ("CME"); and (4) a $0.3 million after-tax decrease in hedging losses. Also contributing to the increase was $0.7 million of the aforementioned tax benefits from stock-based awards. Offsetting the year-over-year core earnings increase in part was a $0.5 million after-tax increase in operating expenses compared to first quarter 2016, driven by higher G&A expenses and higher compensation and employee benefits expenses. The year-over-year $0.2 million after-tax increase in G&A expenses was attributable primarily to higher expenses related to continued technology and business infrastructure investments and expenses related to business development efforts. The year-over-year $0.3 million after-tax increase in compensation and benefits expenses was due primarily to an increase in staffing, related employee health insurance costs and benefits, and higher variable incentive compensation driven by exceeding certain performance targets. Year-over-year credit-related expenses also increased by $0.2 million, after tax, resulting from net provisions to the allowance for losses of $0.3 million, after tax, in first quarter 2017, compared to net provisions of $0.1 million, after tax, in first quarter 2016.

For more information about net income attributable to common stockholders, the composition of core earnings, and a reconciliation of net income attributable to common stockholders to core earnings, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations." For more information about the non-GAAP measures Farmer Mac uses, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures."

Net Interest Income and Net Effective Spread

Net interest income was $37.1 million for first quarter 2017, compared to $36.7 million for fourth quarter 2016 and $33.6 million for first quarter 2016. The overall net interest yield was 0.96 percent for first quarter 2017, compared to 0.95 percent for fourth quarter 2016 and 0.88 percent for first quarter 2016.

The $0.4 million sequential increase in net interest income was primarily driven by (1) growth in AgVantage Securities and Farm & Ranch loans, (2) the full quarter effect of an increase in short-term interest rates on assets and liabilities indexed to LIBOR related to the Federal Reserve's decision to raise the target range for the federal funds rate in December 2016, and (3) the incremental effect of the Federal Reserve's decision to raise the target range for the federal funds rate again in March 2017. This effect on net interest income occurred because interest expense used to calculate net interest income does not include all the funding expenses related to these assets such as the expense on financial derivatives not designated in hedge accounting relationships. This increase in short-term rates on assets and liabilities indexed to LIBOR did not have a similar effect on net effective spread because net effective spread includes interest expense from all funding related to those assets, including interest expense from financial derivatives not designated in hedge accounting relationships. The sequential increase in net interest income was offset in part by two fewer days of interest in first quarter 2017 compared to fourth quarter

2016 and an increase in the application of hedge accounting, as funding expense from financial derivatives related to assets designated in hedge accounting relationships is recorded through net interest income. The 1 basis point sequential increase in net interest income in percentage terms was primarily attributable to a reduction in the average balance in Treasury bills and senior agency debt (which generate a net loss for Farmer Mac) within Farmer Mac's liquidity investment portfolio.

The $3.5 million year-over-year increase in net interest income was driven by net growth in Farm & Ranch loans, USDA Securities, and AgVantage Securities. Another factor contributing to the increase was the aforementioned increases of the federal funds rate in December 2016 and March 2017, which impacted assets and liabilities indexed to LIBOR. Also contributing to the increase was an increase in the net effect of consolidated trusts from an increase in securitization of Farm & Ranch loans throughout 2016 and the first three months of 2017. Farmer Mac earns the difference between the interest income recognized on loans in consolidated trusts and the related interest expense recognized on debt securities of consolidated trusts held by third parties. This increase was offset in part by one less day of interest in first quarter 2017 compared to first quarter 2016 and an increase in the application of hedge accounting, as funding expense from financial derivatives related to assets designated in hedge accounting relationships is recorded through net interest income. The 8 basis point year-over-year increase in net interest income in percentage terms was primarily attributable to a reduction in the average balance of lower-earning cash and cash equivalents.

Net effective spread, a non-GAAP measure, was $32.9 million for first quarter 2017, compared to $31.9 million in fourth quarter 2016 and $29.9 million in first quarter 2016. In percentage terms, net effective spread for first quarter 2017 was 0.91 percent, compared to 0.89 percent in fourth quarter 2016 and 0.82 percent in first quarter 2016. Farmer Mac uses net effective spread as an alternative measure to net interest income because management believes it is a useful metric that accurately reflects the economics of the net spread between all the assets owned by Farmer Mac and all related funding, including any associated derivatives, some of which may not be reflected in net interest income under GAAP.

The $1.0 million sequential increase in net effective spread in dollars was primarily attributable to (1) growth in AgVantage securities, Farm & Ranch loans, and other business volume, which increased net effective spread by approximately $0.8 million; and (2) changes in Farmer Mac's funding strategies and continued improvements in LIBOR-based short-term funding costs for floating rate assets indexed to LIBOR, which added approximately $0.4 million. This increase was offset in part by two fewer days of interest in first quarter 2017 compared to fourth quarter 2016. The 2 basis point sequential increase in net effective spread in percentage terms was primarily attributable to a reduction in the average balance in Treasury bills and senior agency debt (which generate a net loss for Farmer Mac) within Farmer Mac's liquidity investment portfolio, which added approximately 2 basis points to net effective spread. Also contributing to the increase were the effects of the aforementioned changes in Farmer Mac's funding strategy and improvements in the LIBOR-based funding market, which added approximately 1 basis point. This increase was offset in part by two fewer days of interest in first quarter 2017 compared to fourth quarter 2016, which reduced net effective spread by approximately 1 basis point.

The $3.0 million year-over-year increase in net effective spread in dollars was primarily attributable to (1) growth in AgVantage securities, Farm & Ranch loans, and other business volume, which increased net effective spread by approximately $2.0 million; (2) changes in Farmer Mac's funding strategies and continued improvements in LIBOR-based short-term funding costs for floating rate assets indexed to LIBOR, which added approximately $0.8 million; and (3) wider spreads on certain AgVantage securities that were refinanced throughout 2016 and the first three months of 2017. The year-over-year increase in

net effective spread was offset in part by one less day of interest in first quarter 2017 compared to first quarter 2016. The 9 basis point year-over-year increase in net effective spread in percentage terms was primarily attributable to a significant reduction in the average balance of cash and cash equivalents, which added approximately 5 basis points to net effective spread. Also contributing to the increase were the effects of the aforementioned changes in Farmer Mac's funding strategy and improvements in the LIBOR-based funding market, which added approximately 2 basis points, and the aforementioned refinance of certain AgVantage securities at wider spreads, which added approximately 1 basis point.

For more information about Farmer Mac's use of net effective spread as a financial measure, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures." For a reconciliation of net interest income to net effective spread, see Table 6 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Net Interest Income."

Business Volume

Farmer Mac added $1.1 billion of new business volume during first quarter 2017. The new business volume included purchases of $561.4 million of AgVantage securities, purchases of $314.1 million of newly originated Farm & Ranch loans, Farm & Ranch loans added under LTSPCs of $113.3 million, purchases of $92.6 million of USDA Securities, issuance of $38.5 million of Farmer Mac Guaranteed USDA Securities, and purchases of Rural Utilities loans of $27.3 million. Taking into account maturities and paydowns on existing assets, Farmer Mac's outstanding business volume was $17.8 billion as of March 31, 2017, an increase of $445.1 million from December 31, 2016.

Capital

As of March 31, 2017, Farmer Mac's core capital level was $624.3 million, which was $148.7 million above the minimum capital level required by Farmer Mac's statutory charter. As of December 31, 2016, Farmer Mac's core capital level was $609.7 million, which was $143.2 million above the minimum capital requirement. The increase in capital in excess of the minimum capital level was due primarily to an increase in retained earnings offset in part by an increase in minimum capital required to support the growth of on-balance sheet assets during first quarter 2017.

Farmer Mac's board of directors approved a share repurchase program during third quarter 2015 authorizing Farmer Mac to repurchase up to $25 million of its outstanding Class C non-voting common stock through September 2017. Farmer Mac did not repurchase shares during first quarter 2017 under this program. Farmer Mac also did not repurchase any shares under this program in fourth, third or second quarter 2016, but did repurchase 307,000 shares in first quarter 2016. As of March 31, 2017, Farmer Mac had repurchased approximately 668,000 shares of Class C non-voting common stock at a cost of approximately $19.6 million under the share repurchase program.

Credit Quality

The total allowance for losses and substandard assets increased modestly in terms of dollars during first quarter 2017, but remained unchanged as a percent of the Farm & Ranch portfolio from their year-end 2016 levels. The provisions to the allowance for losses in first quarter 2017 were $0.4 million, compared to $0.1 million in first quarter 2016, and were primarily attributable to an increase in the specific allowance for certain impaired on-balance sheet crop and permanent planting loans resulting from both an increase in the volume of such loans and downgrades in risk ratings on certain loans. The provisions in first quarter 2016 were attributable to an increase in the specific allowance for on-balance sheet impaired loans due to a modest increase in the balance of such loans and were partially offset by releases from the general allowance due to repayments of on-balance sheet Agricultural Storage and Processing loans.

As of March 31, 2017, Farmer Mac's substandard assets were $171.5 million (2.7 percent of the Farm & Ranch portfolio), compared to $165.2 million (2.7 percent of the Farm & Ranch portfolio) as of December 31, 2016. The increase in substandard assets from year-end 2016 was in-line with growth in the Farm & Ranch portfolio.

As of March 31, 2017, Farmer Mac's 90-day delinquencies were $50.8 million (0.81 percent of the Farm & Ranch portfolio), compared to $21.0 million (0.34 percent of the Farm & Ranch portfolio) as of December 31, 2016. The increase in 90-day delinquencies from year-end is consistent with Farmer Mac's expectation that its 90-day delinquency rate will eventually revert closer to Farmer Mac's historical average due to macroeconomic factors and the cyclical nature of the agricultural economy. The increase is also consistent with the historical seasonal pattern of Farmer Mac's 90-day delinquencies fluctuating from quarter to quarter and being relatively higher for the first and third quarters, which corresponds to the annual (January 1st) and semi-annual (January 1st and July 1st) payment terms of most Farm & Ranch loans.

For more information about Farmer Mac's credit metrics, including 90-day delinquencies, the total allowance for losses, and substandard assets, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

Use of Non-GAAP Measures

In the accompanying analysis of its financial information, Farmer Mac sometimes uses "non-GAAP measures," which are measures of financial performance that are not presented in accordance with GAAP. Specifically, Farmer Mac uses the following non-GAAP measures: "core earnings," "core earnings per share," and "net effective spread." Farmer Mac uses these non-GAAP measures to measure corporate economic performance and develop financial plans because, in management's view, they are useful alternative measures in understanding Farmer Mac's economic performance, transaction economics, and business trends.

The non-GAAP financial measures that Farmer Mac uses may not be comparable to similarly labeled non-GAAP financial measures disclosed by other companies. Farmer Mac's disclosure of these non-GAAP measures is intended to be supplemental in nature, and is not meant to be considered in isolation from, as a substitute for, or as more important than, the related financial information prepared in accordance with GAAP.

Core Earnings and Core Earnings Per Share

Core earnings and core earnings per share principally differ from net income attributable to common stockholders and earnings per common share, respectively, by excluding the effects of fair value fluctuations. These fluctuations are not expected to have a cumulative net impact on Farmer Mac's financial condition or results of operations reported in accordance with GAAP if the related financial instruments are held to maturity, as is expected. Among other items, these fair value fluctuations have included unrealized gains or losses on financial derivatives and hedging activities. Variation margin is exchanged between Farmer Mac and its counterparties on both its cleared and non-cleared derivatives portfolios. Prior to first quarter 2017, Farmer Mac accounted for variation margin as collateral and associated unrealized gains or losses on those centrally cleared derivative contracts. However, beginning in first quarter 2017, the variation margin amounts exchanged between Farmer Mac and its counterparties on cleared derivatives are considered as settlement rather than collateral as a result of a change in variation margin rules implemented by the CME, the central clearinghouse used by Farmer Mac. Specifically, effective January 3, 2017, CME began to deem the exchange of variation margin between derivatives counterparties as a partial settlement of each respective derivative contract rather than as collateral pledged by a counterparty. Accordingly, beginning in first quarter 2017, Farmer Mac presents its cleared derivatives portfolio net of variation margin payments on its consolidated balance sheets and recognizes realized gains or losses as a result of these payments on its consolidated statements of operations. However, Farmer Mac believes that even though these variation margin amounts are accounted for as realized gains or losses on financial derivatives and hedging activities as a result of the CME rule change, the economic character of these transactions remains the same as they were before the change. The exchange of variation margin, whether considered a partial settlement of or the pledge of collateral under a derivatives contract, is not expected to have a cumulative net impact on Farmer Mac's financial condition or results of operations reported in accordance with GAAP because the related financial instruments are expected to be held to maturity. Therefore, beginning in first quarter 2017, Farmer Mac excludes the effects of realized gains or losses resulting from the exchange of variation margin on its cleared derivatives portfolio in its calculations of core earnings and core earnings per share to present them on a consistent basis with quarters prior to 2017.

Core earnings and core earnings per share also differ from net income attributable to common stockholders and earnings per common share, respectively, by excluding specified infrequent or unusual transactions that Farmer Mac believes are not indicative of future operating results and that may not reflect the trends and economic financial performance of Farmer Mac's core business. For example, the loss from retirement of the Farmer Mac II LLC Preferred Stock in first quarter 2015 has been excluded from core earnings and core earnings per share because it is not a frequently occurring transaction and not indicative of future operating results. This is also consistent with Farmer Mac's previous treatment of these types of origination costs associated with securities underwriting that are capitalized and deferred during the life of the security. For a reconciliation of Farmer Mac's net income attributable to common stockholders to core earnings and of earnings per common share to core earnings per share, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations."

Net Effective Spread

Farmer Mac uses net effective spread to measure the net spread Farmer Mac earns between its interest-earning assets and the related net funding costs of these assets. Net effective spread differs from net interest income and net interest yield because it excludes: (1) the amortization of premiums and discounts on assets consolidated at fair value that are amortized as adjustments to yield in interest income over the contractual or estimated remaining lives of the underlying assets; and (2) interest income and interest expense related to consolidated trusts with beneficial interests owned by third parties, which are presented on Farmer Mac's consolidated balance sheets as "Loans held for investment in consolidated trusts, at amortized cost." Farmer Mac excludes from net effective spread the premiums and discounts on assets consolidated at fair value because they either do not reflect actual cash premiums paid for the assets at acquisition or are not expected to have an economic effect on Farmer Mac's financial performance if the assets are held to maturity, as is expected. Farmer Mac also excludes from net effective spread the interest income and interest expense associated with the consolidated trusts and the average balance of the loans underlying these trusts to reflect management's view that the net interest income Farmer Mac earns on the related Farmer Mac Guaranteed Securities owned by third parties is effectively a guarantee fee. Accordingly, the excluded interest income and interest expense associated with consolidated trusts is reclassified to guarantee and commitment fees for purposes of determining Farmer Mac's core earnings.

Net effective spread also principally differs from net interest income and net interest yield because it includes the accrual of income and expense related to the contractual amounts due on financial derivatives that are not designated in hedge accounting relationships ("undesignated financial derivatives").
Farmer Mac uses interest rate swaps to manage its interest rate risk exposure by synthetically modifying the interest rate reset or maturity characteristics of certain assets and liabilities. The accrual of the contractual amounts due on interest rate swaps designated in hedge accounting relationships is included as an adjustment to the yield or cost of the hedged item and is included in net interest income. For undesignated financial derivatives, Farmer Mac records the income or expense related to the accrual of the contractual amounts due in "Gains/(losses) on financial derivatives and hedging activities" on the consolidated statements of operations. However, the accrual of the contractual amounts due for undesignated financial derivatives are included in Farmer Mac's calculation of net effective spread, which is intended to reflect management's view of the net spread between an asset and all of its related funding, including any associated derivatives, whether or not they are in a hedge accounting relationship. For a reconciliation of net interest income and net interest yield to net effective spread, see Table 6 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Net Interest Income."

Results of Operations

Farmer Mac's net income attributable to common stockholders for first quarter 2017 was $18.6 million ($1.73 per diluted common share), compared to $10.3 million ($0.94 per diluted common share) for first quarter 2016. Farmer Mac's non-GAAP core earnings for first quarter 2017 were $15.6 million ($1.45 per diluted common share), compared to $12.4 million ($1.12 per diluted common share) for first quarter 2016. For more information about the changes in net income attributable to common stockholders and core earnings, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Overview—Net Income and Core Earnings."

A reconciliation of Farmer Mac's net income attributable to common stockholders to core earnings and core earnings per share are presented in the following tables along with a breakdown of the composition of core earnings:

Table 1
Reconciliation of Net Income Attributable to Common Stockholders to Core Earnings

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands, except per share amounts)	
Net income attributable to common stockholders	$18,615	$10,317
Less reconciling items:		
Gains/(losses) on financial derivatives and hedging activities due to fair value changes	4,805	(2,989)
Unrealized (losses)/gains on trading securities	(82)	358
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(127)	(281)
Net effects of settlements on agency forward contracts	32	(255)
Income tax effect related to reconciling items	(1,620)	1,109
Sub-total	3,008	(2,058)
Core earnings	$15,607	$12,375
Composition of Core Earnings:		
Revenues:		
Net effective spread[1]	$32,866	$29,949
Guarantee and commitment fees[2]	5,317	4,669
Other[3]	1,061	(517)
Total revenues	39,244	34,101
Credit related expense (GAAP):		
Provision for losses	444	63
REO operating expenses	—	39
Losses on sale of REO	5	—
Total credit related expense	449	102
Operating expenses (GAAP):		
Compensation and employee benefits	6,317	5,774
General and administrative	3,800	3,526
Regulatory fees	625	613
Total operating expenses	10,742	9,913
Net earnings	28,053	24,086
Income tax expense[4]	9,166	8,444
Net loss attributable to non-controlling interest (GAAP)	(15)	(28)
Preferred stock dividends (GAAP)	3,295	3,295
Core earnings	$15,607	$12,375
Core earnings per share:		
Basic	$1.48	$1.18
Diluted	1.45	1.12
Weighted-average shares:		
Basic	10,551	10,465

Diluted	10,782	11,003

(1) Net effective spread is a non-GAAP measure. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures—Net Effective Spread" for an explanation of net effective spread. See Table 6 for a reconciliation of net interest income to net effective spread.

(2) Includes interest income and interest expense related to consolidated trusts owned by third parties reclassified from net interest income to guarantee and commitment fees to reflect management's view that the net interest income Farmer Mac earns is effectively a guarantee fee on the consolidated Farmer Mac Guaranteed Securities.

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(3) Reflects reconciling adjustments for the reclassification to exclude expenses related to interest rate swaps not designated as hedges and fair value adjustments on financial derivatives and trading assets and a reconciling adjustment to exclude the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities. First quarter 2017 includes $1.0 million of fees received upon the inception of swaps cleared through CME and $0.5 million of hedging losses, compared to $0.1 million of fees received and $0.9 million of hedging losses, respectively, in first quarter 2016.

(4) Includes the tax impact of non-GAAP reconciling items between net income attributable to common stockholders and core earnings. First quarter 2017 includes $0.7 million of tax benefits upon the vesting of restricted stock and the exercise of SARs under new accounting guidance for stock-based awards that became effective in first quarter 2017.

Table 2

Reconciliation of GAAP Basic Earnings Per Share to Core Earnings Basic Earnings Per Share

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands, except per share amounts)	
GAAP - Basic EPS	$1.76	$0.99
Less reconciling items:		
Gains/(losses) on financial derivatives and hedging activities due to fair value changes	0.45	(0.28)
Unrealized (losses)/gains on trading securities	(0.01)	0.03
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(0.01)	(0.03)
Net effects of settlements on agency forward contracts	—	(0.02)
Income tax effect related to reconciling items	(0.15)	0.11
Sub-total	0.28	(0.19)
Core Earnings - Basic EPS	$1.48	$1.18
Shares used in per share calculation (GAAP and Core Earnings)	10,551	10,465

Reconciliation of GAAP Diluted Earnings Per Share to Core Earnings Diluted Earnings Per Share

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands, except per share amounts)	
GAAP - Diluted EPS	$1.73	$0.94
Less reconciling items:		
Gains/(losses) on financial derivatives and hedging activities due to fair value changes	0.45	(0.26)
Unrealized (losses)/gains on trading securities	(0.01)	0.03
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(0.01)	(0.03)

Net effects of settlements on agency forward contracts	—	(0.02)
Income tax effect related to reconciling items	(0.15)	0.10
Sub-total	0.28	(0.18)
Core Earnings - Diluted EPS	$1.45	$1.12
Shares used in per share calculation (GAAP and Core Earnings)	10,782	11,003

The four non-GAAP reconciling items between net income attributable to common stockholders and core earnings are:

1. Gains/(losses) on financial derivatives and hedging activities due to fair value changes. The table below calculates the non-GAAP reconciling item for gains/(losses) on financial derivatives and hedging activities due to fair value changes.

Table 3
Non-GAAP Reconciling Item for Gains/(Losses) on Financial Derivatives and Hedging Activities Due to Fair Value Changes

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Fair value hedges:		
(Losses)/gains due to fair value changes (see Table 8)	$(3,878)	$2,889
No hedge designation:		
Gains/(losses) due to fair value changes (see Table 8)	8,683	(5,878)
Gains/(losses) on financial derivatives and hedging activities due to fair value changes	$4,805	$(2,989)

2. Unrealized gains/(losses) on trading securities. The unrealized gains/(losses) on trading securities are reported on Farmer Mac's consolidated statements of operations, which represent changes during the period in fair values for trading assets remaining on Farmer Mac's balance sheet as of the end of the reporting period.
3. Amortization of premiums/discounts and deferred gains on assets consolidated at fair value. The amount of this non-GAAP reconciling item is the recorded amount of premium, discount, or deferred gain amortization during the reporting period on those assets for which the premium, discount, or deferred gain was based on the application of an accounting principle (e.g., consolidation of variable interest entities) rather than on a cash transaction (e.g., a purchase price premium or discount).
4. The net effect of settlements on agency forward contracts. These agency forward contracts are used as a short-term economic hedge of the issuance of debt. For GAAP purposes, realized gains or losses on settlements of agency forward contracts used as a short-term hedge of the issuance of debt are reported in the consolidated statements of operations in the period in which they occur. For core earnings purposes, these realized gains or losses on settlements of agency forward contracts are deferred and amortized as net yield adjustments over the term of the related debt, which generally ranges from 3 to 15 years.
The following sections provide more detail regarding specific components of Farmer Mac's results of operations.

Net Interest Income. The following table provides information regarding interest-earning assets and funding for the three months ended March 31, 2017 and 2016. The average balance of non-accruing loans is included in the average balance of loans, Farmer Mac Guaranteed Securities, and USDA Securities presented, though the related income is accounted for on a cash basis. Therefore, as the average balance of non-accruing loans and the income received increases or decreases, the net interest income and yield will fluctuate accordingly. The average balance of loans in consolidated trusts with beneficial interests owned by third parties is disclosed in the net effect of consolidated trusts and is not included in the average balances of interest-earning assets and interest-bearing liabilities. The interest income and expense associated with these trusts are shown in the net effect of consolidated trusts.

Table 4

	For the Three Months Ended					
	March 31, 2017			March 31, 2016		
	Average Balance	Income/ Expense	Average Rate	Average Balance	Income/ Expense	Average Rate
	(dollars in thousands)					
Interest-earning assets:						
Cash and investments	$2,798,774	$7,243	1.04 %	$3,858,756	$6,681	0.69 %
Loans, Farmer Mac Guaranteed Securities and USDA Securities(1)	11,581,160	69,345	2.40 %	10,676,340	60,522	2.27 %
Total interest-earning assets	14,379,934	76,588	2.13 %	14,535,096	67,203	1.85 %
Funding:						
Notes payable due within one year	5,806,490	10,499	0.72 %	7,044,292	7,450	0.42 %
Notes payable due after one year(2)	7,961,194	30,490	1.53 %	7,074,429	27,156	1.54 %
Total interest-bearing liabilities(3)	13,767,684	40,989	1.19 %	14,118,721	34,606	0.98 %
Net non-interest-bearing funding	612,250	—		416,375	—	
Total funding	14,379,934	40,989	1.14 %	14,535,096	34,606	0.95 %
Net interest income/yield prior to consolidation of certain trusts	14,379,934	35,599	0.99 %	14,535,096	32,597	0.90 %
Net effect of consolidated trusts(4)	1,134,608	1,472	0.52 %	742,832	1,043	0.56 %
Net interest income/yield	$15,514,542	$37,071	0.96 %	$15,277,928	$33,640	0.88 %

(1) Excludes interest income of $10.0 million and $6.7 million in first quarter 2017 and 2016, respectively, related to consolidated trusts with beneficial interests owned by third parties.

(2) Includes current portion of long-term notes.

(3) Excludes interest expense of $8.5 million and $5.6 million in first quarter 2017 and 2016, respectively, related to consolidated trusts with beneficial interests owned by third parties.

(4) Includes the effect of consolidated trusts with beneficial interests owned by third parties.

Net interest income was $37.1 million for the three months ended March 31, 2017, compared to $33.6 million for the same period in 2016. The overall net interest yield was 0.96 percent for the three months ended March 31, 2017, compared to 0.88 percent for the same period in 2016. The $3.5 million increase in net interest income for first quarter 2017 compared to the same period in 2016 was driven by net growth in Farm & Ranch loans, USDA Securities, and AgVantage Securities. Another factor contributing to the increase was the full quarter effect of an increase in short-term interest rates on assets and liabilities indexed to LIBOR due to the Federal Reserve's decision to raise the target range for the federal funds rate in December 2016, and the incremental impact from the Federal Reserve's decision to raise the target range again in March 2017. This effect on net interest income occurred because interest expense used to calculate net interest income does not include all the funding expenses related to these assets, specifically the expense on financial derivatives not designated in hedge accounting relationships. This increase in short-term rates on assets and liabilities indexed to LIBOR did not have a similar effect on net effective spread because net effective spread includes interest expense from all funding related to those assets, including interest expense from financial derivatives not designated in hedge accounting relationships. Also contributing to the increase was an increase in the net effect of consolidated trusts from an increase in securitization of Farm & Ranch loans throughout 2016 and the first three months of 2017. Farmer Mac earns the difference between the interest income recognized on loans in consolidated trusts and the related interest expense recognized on debt securities of consolidated trusts held by third parties. This increase was offset in part by one less day of interest in first quarter 2017 compared to first quarter 2016 and an increase in funding costs due to greater application of hedge accounting as funding expense from financial derivatives related to assets designated in hedge accounting relationships is recorded through net interest income.

The 0.08 percent increase in net interest yield for first quarter 2017 compared to the same period in 2016 was driven by (1) a reduction in the average balance of lower-earning cash and cash equivalents; (2) a full quarter effect from the Federal Reserve's decision to raise the short-term target range for the federal funds interest rate in December 2016; and (3) the incremental effect of the additional increase in the target range in March 2017. As mentioned above, this increase in short-term rates on assets and liabilities indexed to LIBOR did not have a similar effect on net effective spread because net effective spread includes interest expense from all funding related to those assets, including interest expense from financial derivatives not designated in hedge accounting relationships. This increase was offset in part by one less day of interest in first quarter 2017 compared to first quarter 2016.

The following table sets forth information regarding changes in the components of Farmer Mac's net interest income prior to consolidation of certain trusts for the periods indicated. For each category, information is provided on changes attributable to changes in volume (change in volume multiplied by old rate) and changes in rate (change in rate multiplied by old volume). Combined rate/volume variances, the third element of the calculation, are allocated based on their relative size.

Table 5

	For the Three Months Ended March 31, 2017 Compared to Same Period in 2016		
	Increase/(Decrease) Due to		
	Rate	Volume	Total
	(in thousands)		
Income from interest-earning assets:			
Cash and investments	$2,721	$(2,159)	$562
Loans, Farmer Mac Guaranteed Securities and USDA Securities	3,520	5,303	8,823
Total	6,241	3,144	9,385
Expense from other interest-bearing liabilities	7,263	(880)	6,383
Change in net interest income prior to consolidation of certain trusts[1]	$(1,022)	$4,024	$3,002

[1] Excludes the effect of debt in consolidated trusts with beneficial interests owned by third parties.

The following table presents a reconciliation of net interest income and net yield to net effective spread. Net effective spread is measured by including income or expense related to contractual amounts due on financial derivatives not designated in hedge accounting relationships (the income or expense related to financial derivatives designated in hedge accounting relationships is already included in net interest income) and excluding the amortization of premiums and discounts on assets consolidated at fair value and the net effects of consolidated trusts with beneficial interests owned by third parties.

Table 6

	For the Three Months Ended			
	March 31, 2017		March 31, 2016	
	Dollars	Yield	Dollars	Yield
	(dollars in thousands)			
Net interest income/yield	$37,071	0.96 %	$33,640	0.88 %
Net effects of consolidated trusts	(1,472)	0.03 %	(1,043)	0.02 %
Expense related to undesignated financial derivatives	(2,867)	(0.08)%	(2,669)	(0.08)%
Amortization of premiums/discounts on assets consolidated at fair value	134	— %	21	— %
Net effective spread	$32,866	0.91 %	$29,949	0.82 %

Net effective spread was $32.9 million for first quarter 2017, compared to $29.9 million for first quarter 2016. In percentage terms, net effective spread for the three months ended March 31, 2017 was 0.91 percent, compared to 0.82 percent for the same period in 2016.

The $3.0 million year-over-year increase in net effective spread in dollars was primarily attributable to (1) growth in AgVantage securities, Farm & Ranch loans, and other business volume, which increased net effective spread by approximately $2.0 million; (2) changes in Farmer Mac's funding strategies and continued improvements in LIBOR-based short-term funding costs for floating rate assets indexed to LIBOR, which added approximately $0.8 million; and (3) wider spreads on certain AgVantage securities that were refinanced throughout 2016 and the first three months of 2017. This increase was offset in part by one fewer day of interest in first quarter 2017 compared to first quarter 2016. The 9 basis point year-over-year increase in net effective spread in percentage terms was primarily attributable to a significant reduction in the average balance of cash and cash equivalents, which added approximately 5 basis points to net effective spread. Also contributing to the increase were the effects of the aforementioned changes in Farmer Mac's funding strategy and improvements in the LIBOR-based funding market, which added approximately 2 basis points, and the aforementioned refinance of certain AgVantage securities at wider spreads, which added approximately 1 basis point.

See Note 9 to the consolidated financial statements for more information regarding net interest income and net effective spread from Farmer Mac's individual business segments. See "—Supplemental Information" for quarterly net effective spread by line of business.

Provision for and Release of Allowance for Loan Losses and Reserve for Losses. The following table summarizes the components of Farmer Mac's total allowance for losses for the three months ended March 31, 2017 and 2016:

Table 7

	For the Three Months Ended					
	March 31, 2017			March 31, 2016		
	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses
	(in thousands)					
For the Three Months Ended:						
Beginning Balance	$5,415	$ 2,020	$ 7,435	$4,480	$ 2,083	$ 6,563
Provision for/(release of) losses	637	(193)	444	49	14	63
Charge-offs	(241)	—	(241)	—	—	—
Ending Balance	$5,811	$ 1,827	$ 7,638	$4,529	$ 2,097	$ 6,626

The provisions to the allowance for loan losses recorded during first quarter 2017 were attributable to (1) an increase in the specific allowance for certain impaired on-balance sheet crop and permanent planting loans resulting from both an increase in the outstanding balance of such loans and downgrade in risk ratings on certain loans and (2) an increase in the general allowance due to overall net volume growth in on-balance sheet Farm & Ranch loans. The provisions were offset in part by a modest decline in loss rates on unimpaired loans used to estimate probable losses. The release from the reserve for losses recognized during first quarter 2017 was primarily attributable to (1) a decrease in the general reserve due to improvement in credit quality of certain Agricultural Storage and Processing loans and (2) a net decrease in the balance of loans underlying-off balance sheet Farmer Mac Guaranteed Securities. The charge-offs recorded during the first quarter 2017 were primarily related to two impaired crop loans with one borrower that were foreclosed and transitioned to REO during first quarter 2017. Farmer Mac had previously recorded a specific allowance of $0.2 million on these impaired crop loans as of December 31, 2016. Subsequent to March 31, 2017, Farmer Mac sold the related properties for $5.7 million and recognized $0.5 million gain on sale of REO.

The provisions to the allowance for loan losses recorded during first quarter 2016 were attributable to an increase in the specific allowance for on-balance sheet impaired loans resulting from a modest increase in the outstanding balance of such loans. The provisions were partially offset by releases from the general allowance due to repayments of on-balance sheet Agricultural Storage and Processing loans.

As of March 31, 2017 and December 31, 2016, Farmer Mac's allowance for loan losses was $5.8 million and $5.4 million, respectively, and its reserve for losses was $1.8 million and $2.0 million, respectively. See Note 5 to the consolidated financial statements and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

Guarantee and Commitment Fees. Guarantee and commitment fees, which compensate Farmer Mac for assuming the credit risk on loans underlying off-balance sheet Farmer Mac Guaranteed Securities and LTSPCs, were $3.8 million for first quarter 2017, compared to $3.6 million for first quarter 2016. The increase in guarantee and commitment fees was attributable to the addition of $0.4 billion in second quarter 2016 of Rural Utilities loans under LTSPCs and an increase in the portfolio of off-balance sheet USDA Farmer Mac Guaranteed Securities. The increase was offset in part by lower average outstanding balance of loans underlying-off balance sheet Farmer Mac Guaranteed Securities and LTSPCs.

Gains/(Losses) on Financial Derivatives and Hedging Activities. The effect of unrealized and realized gains and losses on Farmer Mac's financial derivatives and hedging activities was net gains of $2.5 million for first quarter 2017, compared to net losses of $6.8 million for first quarter 2016.

The components of gains and losses on financial derivatives and hedging activities for the three months ended March 31, 2017 and 2016 are summarized in the following table:

Table 8

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Fair value hedges:		
(Losses)/gains due to fair value changes:		
Financial derivatives[1]	$1,526	$(26,898)
Hedged items	(5,404)	29,787
(Losses)/gains on fair value hedging activities	(3,878)	2,889
Cash flow hedges:		
Loss recognized (ineffective portion)	(29)	(149)
Losses on cash flow hedges	(29)	(149)
No hedge designation:		
Gains/(losses) due to fair value changes	8,683	(5,878)
Accrual of contractual payments	(2,838)	(2,520)
Gains/(losses) due to terminations or net settlements	548	(1,124)
Gains/(losses) on financial derivatives not designated in hedging relationships	6,393	(9,522)
Gains/(losses) on financial derivatives and hedging activities	$2,486	$(6,782)

(1) Included in the assessment of hedge effectiveness as of March 31, 2017, but excluded from the amounts in the table, were gains of $3.6 million for the three months ended March 31, 2017, attributable to the fair value of the swaps at the inception of the hedging relationship. Accordingly, the amounts recognized as hedge ineffectiveness for three months ended March 31, 2017 were losses of $0.3 million. The comparable amounts as of March 31, 2016 were losses of $1.5 million for the three months ended March 31, 2016, attributable to the fair value of the swaps at the inception of the hedging relationship and, accordingly, gains of $1.4 million for the three months ended March 31, 2016, attributable to hedge ineffectiveness.

Changes in the fair values of Farmer Mac's open derivative positions for both designated and undesignated hedges are captured in the table above in gains/(losses) due to fair value changes and are primarily the result of fluctuations in long-term interest rates. For financial derivatives designated in fair value hedge accounting relationships, changes in the fair values of the hedged items attributable to the hedged risk are also included in the table above in gains/(losses) due to fair value changes. For financial derivatives designated in cash flow hedge accounting relationships, the ineffective portion of changes in fair value are included as losses on cash flow hedges. The accrual of periodic cash settlements for interest paid or received from Farmer Mac's interest rate swaps that are not designated in hedge accounting relationships is shown as expense related to financial derivatives. Payments or receipts to terminate derivative positions or net cash settled forward sales contracts on the debt of other GSEs and U.S. Treasury futures that are not designated in hedge accounting relationships and fees received upon the inception of swaps cleared through CME are included in gains/(losses) due to terminations or net settlements.

Gains on Trading Securities. During the three months ended March 31, 2017, Farmer Mac recorded unrealized losses on trading securities of $0.1 million, compared to unrealized gains of $0.4 million for the three months ended March 31, 2016. During first quarter 2017, all of the unrealized losses related to financial assets selected to be carried at fair value with changes in fair value included in earnings (the fair value option), compared to $0.3 million of unrealized gains for the same period last year.

Other Income. Other income totaled $0.6 million for first quarter 2017, compared to $0.1 million in first quarter 2016. Other income during first quarter 2017 included the recognition of $0.3 million of appraisal fees received by Farmer Mac's consolidated appraisal company subsidiary, AgVisory, compared to $0.2 million for the same period last year. Other income during the three months ended March 31, 2017 and 2016 also included the recognition of zero and $0.3 million of losses, respectively, previously deferred in accumulated other comprehensive income related to fair value changes of certain available-for-sale securities contributed to Farmer Mac II LLC in 2010 and other miscellaneous items.

Compensation and Employee Benefits. Compensation and employee benefits were $6.3 million for first quarter 2017, compared to $5.8 million for first quarter 2016. The increase in compensation and employee benefits in first quarter 2017 compared to first quarter 2016 was due primarily to an increase in staffing and related employee health insurance costs and benefits and higher variable incentive compensation driven by exceeding certain performance targets. Compensation costs for the three months ended March 31, 2017 and 2016 included $0.2 million in compensation costs for Farmer Mac's consolidated appraisal company subsidiary, AgVisory.

General and Administrative Expenses. General and administrative expenses, including legal, audit, and consulting fees, were $3.8 million for first quarter 2017, compared to $3.5 million for first quarter 2016. The increase in general and administrative expenses in first quarter 2017 compared to the same period last year was due primarily to higher expenses related to continued technology and business infrastructure investments and expenses related to business development efforts. General and administrative costs for the three months ended March 31, 2017 and 2016 included $0.2 million and $0.1 million, respectively, in operating expenses for Farmer Mac's consolidated appraisal company subsidiary, AgVisory.

Regulatory Fees. Regulatory fees, which consist of the fees paid to FCA, were $0.6 million for first quarter 2017, compared to $0.6 million for first quarter 2016. FCA has advised Farmer Mac that its estimated fees for the federal fiscal year ending September 30, 2017 will increase approximately $50,000 to $2.5 million ($0.625 million per federal fiscal quarter) compared to the prior federal fiscal year. After the end of a federal government fiscal year, FCA may revise its prior year estimated assessments to reflect actual costs incurred, and has issued both additional assessments and refunds in the past.

Income Tax Expense. Income tax expense totaled $10.8 million for first quarter 2017, compared to income tax expense of $7.3 million for first quarter 2016. The increase in income tax expense in first quarter 2017 compared to the same period last year, was due to higher pre-tax income. Income tax expense in first quarter 2017 reflected $0.7 million of tax benefits associated with stock compensation activity that was subject to ASU 2016-09 accounting guidance, “Improvements to Employee Share-Based Payment Accounting,” adopted in first quarter 2017. This item was also the primary reason why Farmer Mac's effective tax rate was lower than the statutory rate in first quarter 2017. More information about the adoption of ASU 2016-09 and the effect on Farmer Mac's financial position, results of operations, and cash flows is included in Note 1(d) to the consolidated financial statements.

Business Volume. During first quarter 2017, Farmer Mac added $1.1 billion of new business volume, compared to $1.3 billion in first quarter 2016. Specifically, Farmer Mac:

- purchased $561.4 million of AgVantage securities;
- purchased $314.1 million of newly originated Farm & Ranch loans;
- added $113.3 million of Farm & Ranch loans under LTSPCs;
- purchased $92.6 million of USDA Securities;
- issued $38.5 million of Farmer Mac Guaranteed USDA Securities; and
- purchased $27.3 million of Rural Utilities loans.

Farmer Mac's outstanding business volume was $17.8 billion as of March 31, 2017, an increase of $445.1 million from December 31, 2016. The increase in Farmer Mac's outstanding business volume was driven by net portfolio growth in AgVantage securities with one of Farmer Mac's long-standing issuers, National Rural Utilities Cooperative Finance Corporation ("CFC"), which increased its outstanding AgVantage business volume with Farmer Mac by $240.3 million in first quarter 2017. Farmer Mac also experienced net portfolio growth of $32.2 million within its Farm Equity AgVantage product line in first quarter 2017. Also, Farmer Mac grew its Farm & Ranch portfolio by $128.9 million notwithstanding the seasonal large amounts of repayments during first quarter resulting from the January 1 payment date on almost all loans in the portfolio.

In April 2017, Farmer Mac purchased and retained $1.0 billion of AgVantage securities issued by Metropolitan Life Insurance Company ("MetLife"). MetLife used the proceeds from Farmer Mac's purchase of $1.0 billion in AgVantage securities to refinance an AgVantage security of the same amount that matured in April 2017. Previously, Farmer Mac held $30.0 million of the $1.0 billion AgVantage security that matured in April 2017 on-balance sheet and earned a spread between the interest income earned on that portion of the security and the related funding costs. The remaining $970.0 million of the $1.0 billion AgVantage security that matured in April 2017 had previously been sold to third parties and reported as an off-balance sheet program asset on which Farmer Mac earned a guarantee fee of approximately 0.15 percent on an annual basis. For the newly purchased $1.0 billion in AgVantage securities, which are now held entirely on-balance sheet, Farmer Mac will earn weighted average net effective spread income of approximately 0.42 percent on an annual basis. The newly purchased AgVantage securities are comprised of three maturities – $500.0 million of a one-year security, which is callable in six months, $250.0 million of a two-year security, and $250.0 million of a three-year security.

The following table sets forth purchases of non-delinquent eligible loans, new loans added under LTSPCs, and new guarantees during the periods indicated in the Farm & Ranch, USDA Guarantees, and Rural Utilities lines of business, as well as purchases of AgVantage securities in the Institutional Credit line of business:

Table 9
New Business Volume – Farmer Mac Loan Purchases, Guarantees, LTSPCs, and AgVantage Securities

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Farm & Ranch:		
Loans	$314,137	$198,548
LTSPCs	113,261	68,017
USDA Guarantees:		
USDA Securities	92,555	95,320
Farmer Mac Guaranteed USDA Securities	38,546	3,648
Rural Utilities:		
Loans	27,341	9,691
Institutional Credit:		
AgVantage Securities	561,407	927,219
Total purchases, guarantees, LTSPCs, and AgVantage Securities	$1,147,247	$1,302,443

New business volume for loans purchased within the Farm & Ranch line of business for first quarter 2017 was substantially greater than first quarter 2016. This was primarily due to an increase in borrower demand for long-term real estate financing, as farmers used equity in farmland assets to increase sources of operating capital, and an increase in the average size of loans purchased. New business volume for loans added under LTSPCs within the Farm & Ranch line of business for first quarter 2017 compared to first quarter 2016 reflected an increase in demand among Farm Credit System institutions for the LTSPC product and an increase in average size of loans added under LTSPCs. The increase in new business volume in the USDA Guarantees line of business for first quarter 2017 compared to the same period in 2016 reflected an increase in lender usage of USDA guaranteed loan programs due to available federal funding for those programs. Loan purchase volume in the Rural Utilities line of business remained low due to limited demand for credit associated with slow economic growth and greater energy efficiency in recent years, as well as an ongoing preference by CFC, Farmer Mac's only current rural utilities cooperative counterparty, to retain loans on its balance sheet. Changes in AgVantage securities volume are primarily driven by the generally larger transaction sizes for that product and the fluctuating funding and liquidity needs of Farmer Mac's customer network and scheduled maturity amounts. The volume of new AgVantage securities was lower for first quarter 2017 compared to first quarter 2016 primarily due to the scheduled maturities for those periods and related refinancing activity, as Farmer Mac refinanced $0.2 billion of maturing AgVantage securities during first quarter 2017 compared to $0.6 billion in first quarter 2016.

Based on market conditions, Farmer Mac either retains the loans it purchases or securitizes them and retains or sells Farmer Mac Guaranteed Securities backed by those loans. The weighted-average age of the Farm & Ranch non-delinquent eligible loans purchased and retained (excluding the purchases of defaulted loans) during both first quarter 2017 and 2016 was less than one year. Of those loans, 78 percent and 54 percent, respectively, had principal amortization periods longer than the maturity date,

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resulting in balloon payments at maturity, with a weighted-average remaining term to maturity of 21.7 years and 17.7 years, respectively.

During first quarter 2017 and 2016, Farmer Mac securitized some of the Farm & Ranch loans it had purchased and sold the resulting Farmer Mac Guaranteed Securities in the amounts of $117.0 million and $135.9 million, respectively. Farmer Mac consolidates these loans and presents them as "Loans held for investment in consolidated trusts, at amortized cost" on the consolidated balance sheets. In first quarter 2017 and 2016, $56.5 million and $83.5 million, respectively, of Farmer Mac Guaranteed Securities were sold to Zions First National Bank, which is a related party to Farmer Mac.

The following table sets forth information regarding the Farmer Mac Guaranteed Securities issued during the periods indicated:

Table 10

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Loans securitized and sold as Farm & Ranch Guaranteed Securities	$117,018	$135,913
Farmer Mac Guaranteed USDA Securities	38,546	3,648
AgVantage Securities	561,407	927,219
Total Farmer Mac Guaranteed Securities issuances	$716,971	$1,066,780

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The following table sets forth information regarding outstanding volume in each of Farmer Mac's four lines of business as of the dates indicated:

Table 11
Lines of Business - Outstanding Business Volume

	As of March 31, 2017	As of December 31, 2016
	(in thousands)	
On-balance sheet:		
Farm & Ranch:		
Loans	$2,434,436	$2,381,488
Loans held in trusts:		
Beneficial interests owned by third party investors	1,208,950	1,132,966
USDA Guarantees:		
USDA Securities	1,973,628	1,954,800
Farmer Mac Guaranteed USDA Securities	40,735	35,599
Rural Utilities:		
Loans	999,130	999,512
Institutional Credit		
AgVantage Securities	6,302,369	6,004,472
Total on-balance sheet	$12,959,248	$12,508,837
Off-balance sheet:		
Farm & Ranch:		
LTSPCs	2,209,809	2,209,409
Guaranteed Securities	387,272	415,441
USDA Guarantees:		
Farmer Mac Guaranteed USDA Securities	135,334	103,976
Rural Utilities:		
LTSPCs(1)	869,664	878,598
Institutional Credit:		
AgVantage Securities	983,214	983,214
AgVantage Revolving Line of Credit Facility(2)	300,000	300,000
Total off-balance sheet	$4,885,293	$4,890,638
Total	$17,844,541	$17,399,475

(1) As of both March 31, 2017 and December 31 2016, includes $20.0 million related to one-year loan purchase commitments on which Farmer Mac receives a nominal unused commitment fee.

(2) During first quarter 2017, $100.0 million of this facility was drawn and subsequently repaid. As of December 31, 2016, this facility had not been utilized. Farmer Mac receives a fixed fee based on the full dollar amount of the facility. If the counterparty draws on the facility, the amounts drawn will be in the form of AgVantage securities, and Farmer Mac will earn interest income on those securities.

The following table summarizes by maturity date the scheduled principal amortization of loans held, loans underlying off-balance sheet Farmer Mac Guaranteed Securities (excluding AgVantage securities) and LTSPCs, USDA Securities, and Farmer Mac Guaranteed USDA Securities as of March 31, 2017:

Table 12
Schedule of Principal Amortization as of March 31, 2017

	Loans Held	Loans Underlying Off-Balance Sheet Farmer Mac Guaranteed Securities and LTSPCs	USDA Securities and Farmer Mac Guaranteed USDA Securities	Total
	(in thousands)			
2017	$137,049	$202,461	$66,383	$405,893
2018	203,148	689,981	100,753	993,882
2019	187,322	213,978	99,052	500,352
2020	196,340	203,511	99,921	499,772
2021	215,469	215,674	103,811	534,954
Thereafter	3,703,188	1,941,140	1,679,777	7,324,105
Total	$4,642,516	$3,466,745	$2,149,697	$10,258,958

Of the $17.8 billion outstanding principal balance of volume included in Farmer Mac's four lines of business as of March 31, 2017, $7.6 billion were AgVantage securities included in the Institutional Credit line of business. Unlike business volume in the form of purchased loans, USDA Securities, and loans underlying LTSPCs and non-AgVantage Farmer Mac Guaranteed Securities, most AgVantage securities do not require periodic payments of principal based on amortization schedules and instead have fixed maturity dates when the secured general obligation is due. The following table summarizes by maturity date the outstanding principal amount of both on- and off-balance sheet AgVantage securities as of March 31, 2017:

Table 13
AgVantage Balances by Year of Maturity

	As of March 31, 2017
	(in thousands)
2017(1)	$ 1,434,693
2018(2)	1,705,234
2019	803,911
2020	750,082
2021	1,020,640
Thereafter(3)	1,871,023
Total	$ 7,585,583

(1) In April 2017, Farmer Mac purchased and retained $1.0 billion in AgVantage securities from MetLife. MetLife used the proceeds from Farmer Mac's purchase of $1.0 billion in AgVantage securities to refinance an AgVantage security of the same amount that matured in April 2017.

(2) Includes the expiration of the $300.0 million revolving floating rate AgVantage facility.

(3) Includes various maturities ranging from 2022 to 2047.

The weighted-average remaining maturity of the outstanding AgVantage securities shown in the table above was 4.2 years as of March 31, 2017.

As part of fulfilling its guarantee obligations for Farm & Ranch Guaranteed Securities and commitments to purchase eligible loans underlying LTSPCs, Farmer Mac purchases defaulted loans, all of which are at least 90 days delinquent or in material non-monetary default at the time of purchase, out of the loan pools underlying those securities and LTSPCs, and records the purchased loans as such on its balance sheet. The purchase price for a defaulted loan purchased out of a pool of loans backing Farm & Ranch Guaranteed Securities is the then-current outstanding principal balance of the loan plus accrued and unpaid interest. The purchase price for a defaulted loan purchased under an LTSPC is the then-current outstanding principal balance of the loan, with accrued and unpaid interest on the defaulted loan payable out of any future loan payments or liquidation proceeds as received. The purchase price of a defaulted loan is not an indicator of the expected loss on that loan; many other factors affect expected loss, if any, on any loan so purchased. The delinquent loans purchased out of securitized pools and LTSPCs during both first quarter 2017 and 2016 had a weighted-average age of 10 years. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

The following table presents Farmer Mac's purchases of defaulted loans underlying Farm & Ranch Guaranteed Securities and LTSPCs for the periods indicated:

Table 14

	For the Three Months Ended	
	March 31, 2017	March 31, 2016
	(in thousands)	
Defaulted loans purchased underlying Farm & Ranch Guaranteed Securities owned by third party investors	$—	$1,267
Defaulted loans purchased underlying LTSPCs	311	148
Total loan purchases	$311	$1,415

Outlook

Farmer Mac continues to provide a stable source of liquidity, capital, and risk management tools as the secondary market that helps meet the financing needs of rural America. While the pace of Farmer Mac's growth will depend on the capital and liquidity needs of the participants in the rural financing business, Farmer Mac foresees opportunities for continued growth. More specifically, Farmer Mac believes that its Farm & Ranch, USDA Guarantees, and Institutional Credit lines of business all have opportunities for growth, driven by several key factors:

- As agricultural and rural utilities lenders face increased equity capital requirements under regulatory frameworks or rating agency requirements, or seek to reduce exposure due to lending limits or concentration limits, Farmer Mac can provide relief for those institutions through loan purchases, guarantees, or LTSPCs.
- While lending opportunities in the rural utilities industry remain moderate, growth opportunities within Farmer Mac's Institutional Credit line of business exist because it provides a competitive source of debt funding for the rural utilities cooperative lender that uses Farmer Mac's programs.
- As a result of targeted marketing and product development efforts, Farmer Mac's lender network and Institutional Credit customer base continues to expand, which may generate additional demand for Farmer Mac's products from new sources.

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Farmer Mac believes that these growth opportunities will be important in replacing income earned on the loans and other assets as they mature, pay down, or are reinvested at potentially lower spreads.

Agricultural Industry. The agricultural industry includes many diverse sectors that respond in different ways to changes in economic conditions. Those individual sectors often are affected differently, sometimes positively and sometimes negatively, by prevailing domestic and global economic factors and regional weather conditions. This results in cycles where one or more sectors may be under stress at the same time that others are not. The profitability of agricultural sectors is also affected by commodity inventories and their associated market prices, which can vary largely as a result of global production trends, weather patterns, access to water supply, and harvest conditions that may affect both domestic and global supplies. The strength of the U.S. dollar relative to other worldwide currencies, combined with a slowdown in global economic growth or changes in trade policies, could also continue to adversely affect the demand for certain U.S. agricultural exports, which may result in producers receiving lower commodity prices.

Net farm income, as reported by the USDA, has decreased annually since reaching a cyclical peak in 2013. Farmland values have weakened recently in some regions, primarily in the Midwest, in response to declining prices for certain commodities and lower farm income levels. During this same period, the 90-day delinquencies and credit losses in Farmer Mac's portfolio have remained low compared to its historical averages. However, some indications of stress have emerged recently, as the volume of Farmer Mac's substandard assets increased in fourth quarter 2016 and 90-day delinquencies increased in first quarter 2017 compared to the historically low levels previously observed. Nevertheless, Farmer Mac's average substandard assets as a percentage of its Farm & Ranch portfolio and 90-day delinquencies both remain below Farmer Mac's historical averages, and the increases in those two measures have not translated into rising credit losses.

Farmer Mac believes that any losses associated with the current agricultural credit cycle will be moderated by the strength and diversity of its portfolio, which Farmer Mac believes is adequately collateralized. Farmer Mac believes that its portfolio remains sufficiently diversified, both geographically and by commodity, and that its portfolio has been underwritten to high credit quality standards. Accordingly, Farmer Mac believes that its portfolio is well-positioned to endure reasonably foreseeable volatility in farmland values and commodity prices. Farmer Mac also continues to closely monitor sector profitability, economic conditions, and agricultural land value and geographic trends to tailor underwriting practices to changing conditions. For more information about the loan balances, loan-to-value ratios, 90-day delinquencies, and substandard asset rate for the Farm & Ranch loans in Farmer Mac's portfolio as of March 31, 2017, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

The western part of the United States, and in particular California, has recently experienced above-average precipitation, providing an easing of prolonged drought conditions. However, the extent to which this cycle of precipitation will provide relief from the effects of the drought on a long-term basis is yet to be determined. Farmer Mac has not observed any material effect on its portfolio from the drought through March 31, 2017 but continues to remain informed about the effects of the drought conditions in affected areas.

Farmer Mac continues to monitor the establishment and evolution of legislation and regulations, as well as the status of various international trade agreements and partnerships, that could affect farmers, ranchers, rural lenders, and rural America in general. As the new Trump administration and the U.S. Congress begin their review of existing regulations and the promotion of new legislative or regulatory proposals and policies, Farmer Mac will monitor the effects that any changes in legislation or regulation could have on Farmer Mac or its customers.

Farmer Mac's marketing efforts directed towards the Farm & Ranch line of business focus on lenders that have demonstrated a commitment to agricultural lending based on their lending history. Farmer Mac directs its outreach efforts to these lenders through direct personal contact, which is facilitated through Farmer Mac's frequent participation in state and national banking conferences, its alliances with the American Bankers Association and the Independent Community Bankers of America, and its business relationships with members of the Farm Credit System. In the Farm & Ranch line of business, Farmer Mac has experienced continuing stable demand for its loan products. Demand for Farmer Mac's secondary market tools could also increase as rural lenders adapt to new and changing regulations, which may require lenders to obtain more liquidity and capital to continue their lending practices.

Farmer Mac also directs marketing efforts towards the agricultural industry by trying to identify and develop relationships with potential issuers of AgVantage securities, including insurance company agricultural lenders, agricultural finance companies, and bank and non-bank agricultural lenders such as agricultural mortgage funds, who can pledge loans as collateral to obtain financing as part of Farmer Mac's Institutional Credit line of business. As part of these efforts, Farmer Mac has increased its focus on wholesale financing for institutional investors in agricultural assets that qualify as eligible collateral under Farmer Mac's charter. In July 2014, Farmer Mac expanded its AgVantage product to this new type of issuer and refers to this product variation as the Farm Equity AgVantage product. Farmer Mac directs its outreach efforts to these potential issuers through its business relationships within the agricultural community and through executive outreach to institutions whose profile presents opportunity to benefit from wholesale financing. As institutional investment in agricultural assets continues to grow, Farmer Mac believes that it is in a unique position to help increase access to capital for these types of counterparties and thereby provide a new source of capital to benefit rural America. Farmer Mac designed the Farm Equity AgVantage product to provide an efficient, low-cost source of financing tailored to meet the needs of institutional investors that can be adapted to many different types of organizational structures and for both public and private institutional investors. Farmer Mac believes there is opportunity to expand this type of business as both the trend toward institutional investment in agricultural assets and awareness of the Farm Equity AgVantage product continue to grow. For more information about the Farm Equity AgVantage product, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Institutional" in this report.

Rural Utilities Industry. Demand for capital within the rural utilities industry currently remains moderate, which has resulted in an ongoing high level of competition between rural utilities cooperative lenders that could suppress loan growth opportunities for those lenders, including lenders that participate in Farmer Mac's Rural Utilities line of business. Although competitive pressures remain within the rural utilities lending industry, Farmer Mac sees opportunities for growth in this area within Farmer Mac's Institutional Credit line of business because the wholesale funding rates that Farmer Mac provides may be highly competitive compared to other available sources of debt funding for rural utilities cooperative lenders.

Balance Sheet Review

Assets. Farmer Mac's total assets as of March 31, 2017 were $15.9 billion, compared to $15.6 billion as of December 31, 2016. The increase in total assets was primarily attributable to an increase in total Farmer Mac Guaranteed Securities and total loans, net of allowance.

As of both December 31, 2016 and March 31, 2017, Farmer Mac had $0.3 billion of cash and cash equivalents and $2.5 billion of investment securities. As of March 31, 2017, Farmer Mac had $6.3 billion of Farmer Mac Guaranteed Securities, $4.6 billion of loans, net of allowance, and $2.0 billion of USDA Securities. This compares to $6.0 billion of Farmer Mac Guaranteed Securities, $4.5 billion of loans, net of allowance, and $2.0 billion of USDA Securities as of December 31, 2016.

Liabilities. Farmer Mac's total liabilities were $15.3 billion as of March 31, 2017, compared to $15.0 billion as of December 31, 2016. The increase in total liabilities was primarily attributable to an increase in total notes payable and debt securities of consolidated trusts held by third parties.

Equity. As of March 31, 2017, Farmer Mac had total equity of $666.0 million, comprised of stockholders' equity of $665.8 million and non-controlling interest of $0.2 million related to Farmer Mac's appraisal subsidiary, AgVisory. As of May 1, 2017, Farmer Mac transferred its entire 65% ownership interest in AgVisory back to the limited liability company as a company redemption in exchange for $5,000. Farmer Mac recognized a loss of approximately $0.1 million, after-tax, upon the transfer, which will be reflected in Farmer Mac's financial reports for second quarter 2017. As of December 31, 2016, Farmer Mac had total equity of $643.6 million, comprised of stockholders' equity of $643.4 million and non-controlling interest of $0.2 million. The increase in total equity during first quarter 2017 was a result of an increase in retained earnings and accumulated other comprehensive income. The increase in accumulated other comprehensive income was due to increases in fair value on certain floating-rate AgVantage Securities.

Off-Balance Sheet Arrangements

Farmer Mac offers approved lenders two credit enhancement alternatives to increase their liquidity or lending capacity while retaining the cash flow benefits of their loans: (1) Farmer Mac Guaranteed Securities, which are available through each of the Farm & Ranch, USDA Guarantees, Rural Utilities, and Institutional Credit lines of business; and (2) LTSPCs, which are available through the Farm & Ranch and Rural Utilities lines of business. For securitization trusts in which Farmer Mac is the primary beneficiary, the trust assets and liabilities are included on Farmer Mac's consolidated balance sheet. For the remainder of these transactions, and in the event of de-consolidation, both of these alternatives result in the creation of off-balance sheet obligations for Farmer Mac. See Note 6 to the consolidated financial statements for more information about consolidation and Farmer Mac's off-balance sheet business activities.

Risk Management

Credit Risk – Loans and Guarantees. Farmer Mac is exposed to credit risk resulting from the inability of borrowers to repay their loans in conjunction with a deficiency in the value of the collateral relative to the outstanding balance of the loan and the costs of liquidation. Farmer Mac is exposed to credit risk on:

- loans held;
- loans underlying Farmer Mac Guaranteed Securities; and
- loans underlying LTSPCs.

Farmer Mac generally assumes 100 percent of the credit risk on loans held and loans underlying LTSPCs in the Farm & Ranch and Rural Utilities lines of business and loans underlying Farm & Ranch Guaranteed Securities. Farmer Mac has direct credit exposure to the loans in non-AgVantage transactions but only indirect credit exposure to loans that secure AgVantage transactions because AgVantage securities represent a general obligation of an issuer that is, in turn, secured by eligible loans. Non-AgVantage transactions like loan purchases, LTSPCs, and "pass-through" guaranteed securities that represent beneficial interests in the underlying loans do not include a general obligation of a counterparty as a separate source of repayment. For the reasons described in more detail below, Farmer Mac excludes its assets in the USDA Guarantees line of business, the loans in the Rural Utilities line of business, and AgVantage securities in the Institutional Credit line of business from the loan-level credit risk metrics it discloses.

Farmer Mac's direct credit exposure to Farm & Ranch loans held and loans underlying Farm & Ranch Guaranteed Securities and LTSPCs as of March 31, 2017 was $6.2 billion across 48 states. Farmer Mac has established underwriting, collateral valuation, and documentation standards for agricultural real estate mortgage loans and believes that these standards mitigate the risk of loss from borrower defaults and provide guidance about the management, administration, and conduct of underwriting and appraisals to all participating and potential lenders. These standards were developed based on industry practices for agricultural real estate mortgage loans and are designed to assess the creditworthiness of the borrower, as well as the value of the collateral securing the loan. Farmer Mac evaluates and adjusts these standards on an ongoing basis based on current and anticipated market conditions. For more information about Farmer Mac's underwriting and collateral valuation standards for Farm & Ranch loans, see "Business—Farmer Mac's Lines of Business—Farm & Ranch—Underwriting and Collateral Valuation (Appraisal) Standards" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 filed with the SEC on March 9, 2017.

Farmer Mac's direct credit exposure to Rural Utilities loans held and loans underlying LTSPCs as of March 31, 2017 was $1.9 billion across 39 states, of which $1.5 billion were loans to electric distribution cooperatives and $0.4 billion were loans to generation and transmission ("G&T") cooperatives. Farmer Mac has developed different underwriting standards for rural utilities loans that depend on whether direct or indirect credit exposure is assumed on a loan and whether the borrower is an electric distribution cooperative or a G&T cooperative. See "Business—Farmer Mac's Lines of Business—Rural Utilities—Underwriting" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 filed with the SEC on March 9, 2017. As of March 31, 2017, there were no delinquencies in Farmer Mac's portfolio of Rural Utilities loans, and Farmer Mac has not experienced any credit losses on rural utilities loans since Congress authorized Farmer Mac's Rural Utilities line of business in 2008. Based on this performance, Farmer Mac excludes the loans in the Rural Utilities line of business from the credit risk metrics it discloses.

Farmer Mac has indirect credit exposure to the Farm & Ranch loans and Rural Utilities loans that secure AgVantage securities included in the Institutional Credit line of business. Farmer Mac's AgVantage securities are general obligations of institutions approved by Farmer Mac and are secured by current loans in an amount at least equal to the outstanding principal amount of the related security. Accordingly, Farmer Mac excludes the loans that secure AgVantage securities from the credit risk metrics it discloses because Farmer Mac has only indirect credit risk on those loans and because of the other characteristics of AgVantage securities that mitigate credit risk. Those characteristics include a general obligation of an issuing institution approved by Farmer Mac, the required collateralization level for the securities, the requirement for delinquent loans to be removed from the pool of pledged loans and replaced with current eligible loans, and in some cases, the requirement for the counterparty to comply with specified financial covenants for the life of the related AgVantage security. As of March 31, 2017, Farmer Mac had not experienced any credit losses on any AgVantage securities and does not expect to incur any such losses in the future. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Institutional" for more information about Farmer Mac's credit risk on AgVantage securities.

The credit exposure of Farmer Mac and Farmer Mac II LLC on USDA Securities, including those underlying Farmer Mac Guaranteed USDA Securities, is covered by the full faith and credit of the United States. Therefore, Farmer Mac believes that Farmer Mac and Farmer Mac II LLC have little or no credit risk exposure in the USDA Guarantees line of business because of the USDA guarantee. As of March 31, 2017, neither Farmer Mac nor Farmer Mac II LLC had experienced any credit losses on any business under the USDA Guarantees line of business, and neither expects to incur any such losses in the future.

Loans in the Farm & Ranch line of business are all secured by first liens on agricultural real estate. Accordingly, Farmer Mac's exposure on a loan is limited to the difference between (1) the total of the accrued interest, advances, and the principal balance of a loan and (2) the value of the property less the cost to sell. Measurement of that excess or shortfall is the best predictor and determinant of loss, compared to other measures that evaluate the efficiency of a particular farm operator. For example, debt service ratios depend upon farm operator efficiency and leverage, which can vary widely within a geographic region, commodity type, or an operator's business and farming skills. Thus, Farmer Mac considers a loan's original loan-to-value ratio as one of many factors in evaluating loss severity. This ratio is calculated by dividing the loan principal balance at the time of guarantee, purchase, or commitment by the appraised value at the date of loan origination or, when available, updated appraised value at the time of guarantee, purchase, or commitment. Other factors Farmer Mac considers include, but are not limited to, other underwriting standards, commodity and farming forecasts, and regional economic and agricultural conditions.

Loan-to-value ratios depend upon the market value of a property, as determined in accordance with Farmer Mac's collateral valuation standards. As of March 31, 2017 and December 31, 2016, the average unpaid loan balance for loans outstanding in the Farm & Ranch line of business was $615,000 and $611,000, respectively. The original loan-to-value ratio is based on the original appraised value that has not been indexed to provide a current market value or reflect amortization of loans. The weighted-average original loan-to-value ratio for Farm & Ranch loans purchased during first quarter 2017 was 41 percent, compared to 48 percent for loans purchased during first quarter 2016. The weighted-average original loan-to-value ratio for all Farm & Ranch loans held and all loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs was approximately 45 percent as of both March 31, 2017 and December 31, 2016. The weighted-average original loan-to-value ratio for all 90-day delinquencies was 42 percent and 47 percent, respectively, as of March 31, 2017 and December 31, 2016.

The weighted-average current loan-to-value ratio, which is the loan-to-value ratio based on original appraised value but which reflects loan amortization since purchase, for Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs was approximately 44 percent as of both March 31, 2017 and December 31, 2016.

Farmer Mac maintains an allowance for loan losses to cover estimated probable losses on loans held and a reserve for losses to cover estimated probable losses on loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities. The methodology that Farmer Mac uses to determine the level of its allowance for losses is described in Note 2(j) to the consolidated financial statements included in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 filed with the SEC on March 9, 2017. Management believes that this methodology produces a reasonable estimate of probable losses, as of the balance sheet date, for all loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs.

The following table summarizes the changes in the components of Farmer Mac's total allowance for losses as of March 31, 2017 and 2016:

Table 15

	For the Three Months Ended					
	March 31, 2017			March 31, 2016		
	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses
	(in thousands)					
Beginning Balance	$5,415	$2,020	7,435	$4,480	$2,083	$ 6,563
Provision for/(release of) losses	637	(193)	444	49	14	63
Charge-offs	(241)	—	(241)	—	—	—
Ending Balance	$5,811	$1,827	$ 7,638	$4,529	$2,097	$ 6,626

Activity affecting the allowance for loan losses and reserve for losses is discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Provision for and Release of Allowance for Loan Losses and Reserve for Losses." As of March 31, 2017, Farmer Mac's total allowance for losses totaled $7.6 million, or 0.12 percent of the outstanding principal balance of Farm & Ranch loans held for investment and loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities, compared to $7.4 million, or 0.12 percent, as of December 31, 2016.

As of March 31, 2017, Farmer Mac individually evaluated $15.6 million of the $116.6 million of recorded investment in impaired assets for collateral shortfalls against updated appraised values, other updated collateral valuations, or discounted values. For the remaining $101.0 million of impaired assets for which updated valuations were not available, Farmer Mac evaluated them in the aggregate in consideration of their similar risk characteristics and historical statistics. Farmer Mac recorded specific allowances of $2.7 million for undercollateralized assets as of March 31, 2017. Farmer Mac's general allowances were $4.9 million as of March 31, 2017.

The charge-offs recorded during the first quarter 2017 were primarily related to two impaired crop loans, with one borrower, that were foreclosed and transitioned to REO during first quarter 2017. Farmer Mac had previously recorded a specific allowance of $0.2 million on these impaired crop loans as of

December 31, 2016. Subsequent to March 31, 2017, Farmer Mac sold the related properties for $5.7 million and recognized $0.5 million gain on sale of REO.

Farmer Mac's 90-day delinquency measure includes loans 90 days or more past due, as well as loans in foreclosure and non-performing loans where the borrower is in bankruptcy. As of March 31, 2017, Farmer Mac's 90-day delinquencies were $50.8 million (0.81 percent of the Farm & Ranch portfolio), compared to $21.0 million (0.34 percent of the Farm & Ranch portfolio) as of December 31, 2016 and $34.7 million (0.61 percent of the Farm & Ranch portfolio) as of March 31, 2016. Those 90-day delinquencies were comprised of 57 delinquent loans as of March 31, 2017, compared with 38 delinquent loans as of December 31, 2016 and 60 delinquent loans as of March 31, 2016. Approximately half of the net increase in Farmer Mac's 90-day delinquencies as a percentage of its Farm & Ranch portfolio from year-end resulted from the delinquency of a single borrower on two permanent planting loans to which Farmer Mac had $15.4 million of exposure as of March 31, 2017. That delinquency was due to idiosyncratic factors specific to the borrower and not related to macroeconomic factors in the agricultural economy. Farmer Mac believes that it remains adequately collateralized on these loans. The increase in 90-day delinquencies from year-end is consistent with the seasonal pattern of Farmer Mac's 90-day delinquencies fluctuating from quarter to quarter, both in dollars and as a percentage of the outstanding Farm & Ranch portfolio, with higher levels generally observed at the end of the first and third quarters of each year, which corresponds with the annual (January 1st) and semi-annual (January 1st and July 1st) payment characteristics of most Farm & Ranch loans. Farmer Mac expects that over time its 90-day delinquency rate will eventually revert closer to Farmer Mac's historical average due to macroeconomic factors and the cyclical nature of the agricultural economy and believes that approximately half of the increase in Farmer Mac's delinquency rate in first quarter 2017 from year-end was attributable at least in part to these factors. Farmer Mac's average 90-day delinquency rate for the Farm & Ranch line of business over the last fifteen years is approximately 1 percent.

The following table presents historical information regarding Farmer Mac's 90-day delinquencies in the Farm & Ranch line of business compared to the principal balance of all Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs:

Table 16

	Farm & Ranch Line of Business	90-Day Delinquencies	Percentage	
	(dollars in thousands)			
As of:				
March 31, 2017	$6,240,467	$ 50,807	0.81	%
December 31, 2016	6,139,304	21,038	0.34	%
September 30, 2016	6,004,728	18,377	0.31	%
June 30, 2016	5,830,533	22,093	0.38	%
March 31, 2016	5,713,789	34,680	0.61	%
December 31, 2015	5,725,299	32,136	0.56	%
September 30, 2015	5,504,030	36,669	0.67	%
June 30, 2015	5,485,570	31,852	0.58	%
March 31, 2015	5,347,248	32,101	0.60	%

When analyzing the overall risk profile of its lines of business, Farmer Mac takes into account more than the Farm & Ranch loan delinquency percentages provided above. The lines of business also include AgVantage securities and Rural Utilities loans held and underlying LTSPCs, neither of which have any delinquencies, and USDA Securities, which are backed by the full faith and credit of the United States.

Across all of Farmer Mac's lines of business, 90-day delinquencies represented 0.28 percent of total outstanding business volume as of March 31, 2017, compared to 0.12 percent as of December 31, 2016 and 0.21 percent as of March 31, 2016.

The following table presents outstanding Farm & Ranch loans held and loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities and 90-day delinquencies as of March 31, 2017 by year of origination, geographic region, commodity/collateral type, and original loan-to-value ratio:

Table 17
Farm & Ranch 90-Day Delinquencies as of March 31, 2017

	Distribution of Farm & Ranch Line of Business	Farm & Ranch Line of Business	90-Day Delinquencies[1]	Percentage
	(dollars in thousands)			
By year of origination:				
2007 and prior	14 %	$858,635	$ 9,368	1.09 %
2008	3 %	184,403	707	0.38 %
2009	2 %	113,491	2,168	1.91 %
2010	3 %	199,729	2,349	1.18 %
2011	4 %	267,976	1,333	0.50 %
2012	10 %	636,195	3,338	0.52 %
2013	15 %	915,587	1,713	0.19 %
2014	11 %	688,173	20,017 [2]	2.91 %
2015	14 %	867,507	9,814 [3]	1.13 %
2016	19 %	1,195,060	—	— %
2017	5 %	313,711	—	— %
Total	100%	$6,240,467&#		