
**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 September 30, 2019
Commission File Number 001-14951

FARMER  AC

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, DC

20006

(Address of principal executive offices)

(Zip code)

(202) 872-7700

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Exchange on which registered
Class A voting common stock	AGM.A	New York Stock Exchange
Class C non-voting common stock	AGM	New York Stock Exchange
5.875% Non-Cumulative Preferred Stock, Series A	AGM.PRA	New York Stock Exchange
6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C	AGM.PRC	New York Stock Exchange
5.700% Non-Cumulative Preferred Stock, Series D	AGM.PRD	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of October 30, 2019, the registrant had outstanding 1,030,780 shares of Class A voting common stock, 500,301 shares of Class B voting common stock, and 9,179,802 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	
	September 30, 2019	December 31, 2018
	<i>(in thousands)</i>	
Assets:		
Cash and cash equivalents	\$ 587,941	\$ 425,256
Investment securities:		
Available-for-sale, at fair value	3,111,632	2,217,852
Held-to-maturity, at amortized cost	45,032	45,032
Total Investment Securities	<u>3,156,664</u>	<u>2,262,884</u>
Farmer Mac Guaranteed Securities:		
Available-for-sale, at fair value	7,182,541	5,974,497
Held-to-maturity, at amortized cost	1,452,616	2,096,618
Total Farmer Mac Guaranteed Securities	<u>8,635,157</u>	<u>8,071,115</u>
USDA Securities:		
Trading, at fair value	8,943	9,999
Held-to-maturity, at amortized cost	2,164,064	2,166,174
Total USDA Securities	<u>2,173,007</u>	<u>2,176,173</u>
Loans:		
Loans held for investment, at amortized cost	4,998,526	4,004,968
Loans held for investment in consolidated trusts, at amortized cost	1,526,718	1,517,101
Allowance for loan losses	(8,024)	(7,017)
Total loans, net of allowance	<u>6,517,220</u>	<u>5,515,052</u>
Real estate owned, at lower of cost or fair value	1,770	128
Financial derivatives, at fair value	5,589	7,487
Interest receivable (includes \$13,385 and \$19,783, respectively, related to consolidated trusts)	158,720	180,080
Guarantee and commitment fees receivable	39,136	40,366
Deferred tax asset, net	23,803	6,369
Prepaid expenses and other assets	16,227	9,418
Total Assets	<u>\$ 21,315,234</u>	<u>\$ 18,694,328</u>
Liabilities and Equity:		
Liabilities:		
Notes payable:		
Due within one year	\$ 9,885,633	\$ 7,757,050
Due after one year	8,940,989	8,486,647
Total notes payable	18,826,622	16,243,697
Debt securities of consolidated trusts held by third parties	1,532,401	1,528,957
Financial derivatives, at fair value	30,542	19,633
Accrued interest payable (includes \$11,462 and \$17,125, respectively, related to consolidated trusts)	104,340	96,743
Guarantee and commitment obligation	37,449	38,683
Accounts payable and accrued expenses	31,878	11,891
Reserve for losses	1,743	2,167
Total Liabilities	<u>20,564,975</u>	<u>17,941,771</u>
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 as of December 31, 2018 (redemption value \$75,000,000)	—	73,044
Series C, par value \$25 per share, 3,000,000 shares authorized, issued and outstanding	73,382	73,382
Series D, par value \$25 per share, 4,000,000 shares authorized, issued and outstanding	96,659	—
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, 9,179,053 shares and 9,137,550 shares outstanding, respectively	9,179	9,138
Additional paid-in capital	118,720	118,822
Accumulated other comprehensive income, net of tax	(43,024)	24,956
Retained earnings	435,479	393,351
Total Equity	<u>750,259</u>	<u>752,557</u>
Total Liabilities and Equity	<u>\$ 21,315,234</u>	<u>\$ 18,694,328</u>

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		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands, except per share amounts)</i>			
Interest income:				
Investments and cash equivalents	\$ 22,855	\$ 15,123	\$ 61,718	\$ 38,681
Farmer Mac Guaranteed Securities and USDA Securities	81,649	76,870	252,629	213,479
Loans	56,992	50,622	167,792	145,671
Total interest income	161,496	142,615	482,139	397,831
Total interest expense	121,384	97,557	358,374	265,611
Net interest income	40,112	45,058	123,765	132,220
Provision for loan losses	(760)	(99)	(1,074)	(92)
Net interest income after provision for loan losses	39,352	44,959	122,691	132,128
Non-interest income:				
Guarantee and commitment fees	3,349	3,490	10,265	10,470
(Losses)/gains on financial derivatives	(7,360)	628	1,193	(688)
Gains/(losses) on trading securities	49	(3)	154	24
Losses on sale of real estate owned	—	(41)	—	(7)
Other income	530	365	1,378	1,259
Non-interest (loss)/income	(3,432)	4,439	12,990	11,058
Non-interest expense:				
Compensation and employee benefits	7,654	6,777	22,030	20,367
General and administrative	5,253	4,350	14,538	13,878
Regulatory fees	688	625	2,063	1,875
Real estate owned operating costs, net	—	—	64	16
(Release of)/provision for reserve for losses	(137)	(102)	(424)	77
Non-interest expense	13,458	11,650	38,271	36,213
Income before income taxes	22,462	37,748	97,410	106,973
Income tax expense	4,629	7,979	20,362	21,749
Net income attributable to Farmer Mac	17,833	29,769	77,048	85,224
Preferred stock dividends	(3,427)	(3,295)	(10,508)	(9,886)
Loss on retirement of preferred stock	—	—	(1,956)	—
Net income attributable to common stockholders	\$ 14,406	\$ 26,474	\$ 64,584	\$ 75,338
Earnings per common share:				
Basic earnings per common share	\$ 1.34	\$ 2.48	\$ 6.04	\$ 7.07
Diluted earnings per common share	\$ 1.33	\$ 2.46	\$ 5.99	\$ 7.01

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

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(unaudited)

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands)</i>			
Net income	\$ 17,833	\$ 29,769	\$ 77,048	\$ 85,224
Other comprehensive income before taxes:				
Net unrealized (losses)/gains on available-for-sale securities	(24,925)	(13,546)	(50,272)	8,678
Net changes in held-to-maturity securities	(6,543)	(1,544)	(13,406)	(4,400)
Net unrealized (losses)/gains on cash flow hedges	(6,736)	3,181	(22,373)	12,038
Other comprehensive (loss)/income before tax	(38,204)	(11,909)	(86,051)	16,316
Income tax benefit/(expense) related to other comprehensive (loss)/income	8,023	2,500	18,071	(3,427)
Other comprehensive (loss)/income net of tax	(30,181)	(9,409)	(67,980)	12,889
Comprehensive (loss)/income attributable to Farmer Mac	<u>\$ (12,348)</u>	<u>\$ 20,360</u>	<u>\$ 9,068</u>	<u>\$ 98,113</u>

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		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income/(Loss)	Retained Earnings	Total Equity
	Shares	Amount	Shares	Amount				
	<i>(in thousands)</i>							
Balance as of December 31, 2018	8,400	\$ 204,759	10,669	\$ 10,669	\$ 118,822	\$ 24,956	\$ 393,351	\$ 752,557
Net income attributable to Farmer Mac	—	—	—	—	—	—	25,170	25,170
Other comprehensive loss, net of tax	—	—	—	—	—	(3,702)	—	(3,702)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,296)	(3,296)
Common stock (cash dividend of \$0.70 per share)	—	—	—	—	—	—	(7,470)	(7,470)
Issuance of Class C common stock	—	—	20	20	3	—	—	23
Stock-based compensation cost	—	—	—	—	724	—	—	724
Other stock-based award activity	—	—	—	—	(708)	—	—	(708)
Balance as of March 31, 2019	8,400	\$ 204,759	10,689	\$ 10,689	\$ 118,841	\$ 21,254	\$ 407,755	\$ 763,298
Net income attributable to Farmer Mac	—	—	—	—	—	—	34,045	34,045
Other comprehensive loss, net of tax	—	—	—	—	—	(34,097)	—	(34,097)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,785)	(3,785)
Common stock (cash dividend of \$0.70 per share)	—	—	—	—	—	—	(7,490)	(7,490)
Issuance of Series D preferred stock	4,000	96,659	—	—	—	—	—	96,659
Redemption of Series B preferred stock	(3,000)	(73,044)	—	—	—	—	—	(73,044)
Loss on retirement of preferred stock	—	—	—	—	—	—	(1,956)	(1,956)
Issuance of Class C common stock	—	—	11	11	3	—	—	14
Stock-based compensation cost	—	—	—	—	533	—	—	533
Other stock-based award activity	—	—	—	—	(435)	—	—	(435)
Balance as of June 30, 2019	9,400	\$ 228,374	10,700	\$ 10,700	\$ 118,942	\$ (12,843)	\$ 428,569	\$ 773,742
Net income attributable to Farmer Mac	—	—	—	—	—	—	17,833	17,833
Other comprehensive loss, net of tax	—	—	—	—	—	(30,181)	—	(30,181)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,427)	(3,427)
Common stock (cash dividend of \$0.70 per share)	—	—	—	—	—	—	(7,496)	(7,496)
Issuance of Class C common stock	—	—	10	10	19	—	—	29
Stock-based compensation cost	—	—	—	—	407	—	—	407
Other stock-based award activity	—	—	—	—	(648)	—	—	(648)
Balance as of September 30, 2019	9,400	\$ 228,374	10,710	\$ 10,710	\$ 118,720	\$ (43,024)	\$ 435,479	\$ 750,259

	Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income/(Loss)	Retained Earnings	Total Equity
	Shares	Amount	Shares	Amount				
	<i>(in thousands)</i>							
Balance as of December 31, 2017	8,400	\$ 204,759	10,619	\$ 10,619	\$ 118,979	\$ 51,085	\$ 322,704	\$ 708,146
Cumulative effect from change in hedge accounting	—	—	—	—	—	27	471	498
Balance as of January 1, 2018	8,400	\$ 204,759	10,619	\$ 10,619	\$ 118,979	\$ 51,112	\$ 323,175	\$ 708,644
Net income attributable to Farmer Mac	—	—	—	—	—	—	25,819	25,819
Other comprehensive income, net of tax	—	—	—	—	—	20,999	—	20,999
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,295)	(3,295)
Common stock (cash dividend of \$0.58 per share)	—	—	—	—	—	—	(6,161)	(6,161)
Issuance of Class C common stock	—	—	31	31	3	—	—	34
Stock-based compensation cost	—	—	—	—	664	—	—	664
Other stock-based award activity	—	—	—	—	(1,438)	—	—	(1,438)
Balance as of March 31, 2018	8,400	\$ 204,759	10,650	\$ 10,650	\$ 118,208	\$ 72,111	\$ 339,538	\$ 745,266
Net income attributable to Farmer Mac	—	—	—	—	—	—	29,636	29,636
Other comprehensive income, net of tax	—	—	—	—	—	1,299	—	1,299
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,296)	(3,296)
Common stock (cash dividend of \$0.58 per share)	—	—	—	—	—	—	(6,186)	(6,186)
Issuance of Class C common stock	—	—	17	17	4	—	—	21
Stock-based compensation cost	—	—	—	—	605	—	—	605
Other stock-based award activity	—	—	—	—	(1,133)	—	—	(1,133)
Balance as of June 30, 2018	8,400	\$ 204,759	10,667	\$ 10,667	\$ 117,684	\$ 73,410	\$ 359,692	\$ 766,212
Net income attributable to Farmer Mac	—	—	—	—	—	—	29,769	29,769
Other comprehensive income, net of tax	—	—	—	—	—	(9,409)	—	(9,409)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,295)	(3,295)
Common stock (cash dividend of \$0.58 per share)	—	—	—	—	—	—	(6,187)	(6,187)
Issuance of Class C common stock	—	—	2	2	—	—	—	2
Stock-based compensation cost	—	—	—	—	613	—	—	613
Other stock-based award activity	—	—	—	—	(114)	—	—	(114)
Balance as of September 30, 2018	8,400	\$ 204,759	10,669	\$ 10,669	\$ 118,183	\$ 64,001	\$ 379,979	\$ 777,591

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

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

	For the Nine Months Ended	
	September 30, 2019	September 30, 2018
	<i>(in thousands)</i>	
Cash flows from operating activities:		
Net income	\$ 77,048	\$ 85,224
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	(8,032)	713
Amortization of debt premiums, discounts and issuance costs	37,794	21,744
Net change in fair value of trading securities, hedged assets, and financial derivatives	(326,537)	42,054
Loss on sale of real estate owned	—	7
Total provision for losses	650	169
Excess tax benefits related to stock-based awards	442	1,105
Deferred income taxes	637	1,750
Stock-based compensation expense	1,664	1,882
Proceeds from repayment of loans purchased as held for sale	44,857	76,259
Net change in:		
Interest receivable	21,395	18,537
Guarantee and commitment fees receivable	(4)	(86)
Other assets	1,875	(7,268)
Accrued interest payable	7,597	12,033
Other liabilities	2,538	(1,898)
Net cash (used in)/provided by operating activities	(138,076)	252,225
Cash flows from investing activities:		
Purchases of available-for-sale investment securities	(1,871,957)	(833,650)
Purchases of Farmer Mac Guaranteed Securities and USDA Securities	(2,167,801)	(2,544,812)
Purchases of loans held for investment	(1,528,789)	(684,486)
Purchases of defaulted loans	(469)	(1,483)
Proceeds from repayment of available-for-sale investment securities	991,423	814,712
Proceeds from repayment of Farmer Mac Guaranteed Securities and USDA Securities	1,746,948	2,201,723
Proceeds from repayment of loans purchased as held for investment	568,280	508,969
Proceeds from sale of Farmer Mac Guaranteed Securities	199,396	305,391
Proceeds from sale of real estate owned	—	116
Net cash used in investing activities	(2,062,969)	(233,520)
Cash flows from financing activities:		
Proceeds from issuance of discount notes	47,036,038	30,946,426
Proceeds from issuance of medium-term notes	7,632,425	6,109,613
Payments to redeem discount notes	(46,502,105)	(31,530,896)
Payments to redeem medium-term notes	(5,646,107)	(5,254,430)
Payments to third parties on debt securities of consolidated trusts	(143,491)	(124,239)
Proceeds from common stock issuance	25	7
Retirement of Series B preferred stock	(75,000)	—
Proceeds from Series D preferred stock issuance, net of stock issuance costs	96,659	—
Tax payments related to share-based awards	(1,750)	(2,635)
Dividends paid on common and preferred stock	(32,964)	(28,421)
Net cash provided by financing activities	2,363,730	115,425
Net change in cash and cash equivalents	162,685	134,130
Cash and cash equivalents at beginning of period	425,256	302,022
Cash and cash equivalents at end of period	\$ 587,941	\$ 436,152
Non-cash activity:		
Real estate owned acquired through loan liquidation	—	128
Loans acquired and securitized as Farmer Mac Guaranteed Securities	199,396	305,391
Consolidation of Farmer Mac 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	141,543	199,764
Reclassification of defaulted loans from loans held for investment in consolidated trusts to loans held for investment	5,392	6,273
Purchases of securities - traded, not yet settled	8,680	248,600

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, 2018 consolidated balance sheet presented in this report has been derived from Farmer Mac's audited 2018 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 2018 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, 2018 filed with the SEC on February 21, 2019. 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 and nine months ended September 30, 2019.

Principles of Consolidation

The consolidated financial statements include the accounts of Farmer Mac and its two subsidiaries during the year: (1) Farmer Mac Mortgage Securities Corporation ("FMMSC"), whose principal activities are to facilitate the purchase and issuance of Farmer Mac Guaranteed Securities; and (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. The consolidated financial statements also include the accounts of Variable Interest Entities ("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 September 30, 2019						
	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Total
<i>(in thousands)</i>						
On-Balance Sheet:						
Consolidated VIEs:						
Loans held for investment in consolidated trusts, at amortized cost	\$ 1,526,718	\$ —	\$ —	\$ —	\$ —	\$ 1,526,718
Debt securities of consolidated trusts held by third parties ⁽¹⁾	1,532,401	—	—	—	—	1,532,401
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Carrying value ⁽²⁾	—	32,816	—	—	—	32,816
Maximum exposure to loss ⁽³⁾	—	32,645	—	—	—	32,645
Investment securities:						
Carrying value ⁽⁴⁾	—	—	—	—	1,111,712	1,111,712
Maximum exposure to loss ⁽³⁾⁽⁴⁾	—	—	—	—	1,114,220	1,114,220
Off-Balance Sheet:						
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Maximum exposure to loss ⁽³⁾⁽⁵⁾	115,306	404,052	—	—	—	519,358

⁽¹⁾ Includes borrower remittances of \$5.7 million. The borrower remittances had not been passed through to third party investors as of September 30, 2019.

⁽²⁾ Includes \$0.2 million of unamortized premiums and discounts and fair value adjustments related to the USDA Guarantees line of business.

⁽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, 2018

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Total
<i>(in thousands)</i>						
On-Balance Sheet:						
Consolidated VIEs:						
Loans held for investment in consolidated trusts, at amortized cost	\$ 1,517,101	\$ —	\$ —	\$ —	\$ —	\$ 1,517,101
Debt securities of consolidated trusts held by third parties ⁽¹⁾	1,528,957	—	—	—	—	1,528,957
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Carrying value ⁽²⁾	—	27,627	—	—	—	27,627
Maximum exposure to loss ⁽³⁾	—	27,383	—	—	—	27,383
Investment securities:						
Carrying value ⁽⁴⁾	—	—	—	—	1,000,942	1,000,942
Maximum exposure to loss ⁽³⁾⁽⁴⁾	—	—	—	—	1,003,968	1,003,968
Off-Balance Sheet:						
Unconsolidated VIEs:						
Farmer Mac Guaranteed Securities:						
Maximum exposure to loss ⁽³⁾⁽⁵⁾	135,862	367,684	—	—	—	503,546

⁽¹⁾ Includes borrower remittances of \$11.9 million. The borrower remittances had not been passed through to third party investors as of December 31, 2018.

⁽²⁾ Includes \$0.2 million of unamortized premiums and discounts and fair value adjustments related to the USDA Guarantees line of business.

⁽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.

(a) Earnings Per Common Share

Basic earnings per common share ("EPS") is based on the daily weighted-average number of shares of common stock outstanding. Diluted earnings per common share is based on the daily weighted-average number of shares of common stock outstanding adjusted to include all potentially dilutive stock appreciation rights ("SARs") and unvested restricted stock awards. The following schedule reconciles basic and diluted EPS for the three and nine months ended September 30, 2019 and 2018:

Table 1.2

	For the Three Months Ended					
	September 30, 2019			September 30, 2018		
	Net Income	Weighted-Average Shares	\$ per Share	Net Income	Weighted-Average Shares	\$ per Share
	<i>(in thousands, except per share amounts)</i>					
Basic EPS						
Net income attributable to common stockholders	\$ 14,406	10,706	\$ 1.34	\$ 26,474	10,668	\$ 2.48
Effect of dilutive securities⁽¹⁾						
SARs and restricted stock	—	70	(0.01)	—	76	(0.02)
Diluted EPS	<u>\$ 14,406</u>	<u>10,776</u>	<u>\$ 1.33</u>	<u>\$ 26,474</u>	<u>10,744</u>	<u>\$ 2.46</u>

⁽¹⁾ For the three months ended September 30, 2019 and 2018, SARs and restricted stock of 26,768 and 10,122, 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 September 30, 2019 and 2018, contingent shares of unvested restricted stock of 8,414 and 13,138, 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.

	For the Nine Months Ended					
	September 30, 2019			September 30, 2018		
	Net Income	Weighted-Average Shares	\$ per Share	Net Income	Weighted-Average Shares	\$ per Share
	<i>(in thousands, except per share amounts)</i>					
Basic EPS						
Net income attributable to common stockholders	\$ 64,584	10,691	\$ 6.04	\$ 75,338	10,650	\$ 7.07
Effect of dilutive securities⁽¹⁾						
SARs and restricted stock	—	83	(0.05)	—	93	(0.06)
Diluted EPS	<u>\$ 64,584</u>	<u>10,774</u>	<u>\$ 5.99</u>	<u>\$ 75,338</u>	<u>10,743</u>	<u>\$ 7.01</u>

⁽¹⁾ For the nine months ended September 30, 2019 and 2018, SARs and restricted stock of 48,801 and 15,437, respectively, were outstanding but not included in the computation of diluted earnings per share of common stock because they were anti-dilutive. For the nine months ended September 30, 2019 and 2018, contingent shares of unvested restricted stock of 10,994 and 13,138, 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.

(b) 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 and nine months ended September 30, 2019 and 2018:

Table 1.3

	As of September 30, 2019				As of September 30, 2018			
	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total
<i>(in thousands)</i>								
For the Three Months Ended:								
Beginning Balance	\$ (45,384)	\$ 38,021	\$ (5,480)	\$ (12,843)	\$ 15,882	\$ 45,979	\$ 11,549	\$ 73,410
Other comprehensive (loss)/income before reclassifications	(18,915)	—	(5,071)	(23,986)	(9,947)	—	2,662	(7,285)
Amounts reclassified from AOCI	(776)	(5,169)	(250)	(6,195)	(755)	(1,220)	(149)	(2,124)
Net comprehensive (loss)/income	(19,691)	(5,169)	(5,321)	(30,181)	(10,702)	(1,220)	2,513	(9,409)
Ending Balance	<u>\$ (65,075)</u>	<u>\$ 32,852</u>	<u>\$ (10,801)</u>	<u>\$ (43,024)</u>	<u>\$ 5,180</u>	<u>\$ 44,759</u>	<u>\$ 14,062</u>	<u>\$ 64,001</u>
For the Nine Months Ended:								
Beginning Balance	\$ (25,360)	\$ 43,443	\$ 6,873	\$ 24,956	\$ (1,676)	\$ 48,236	\$ 4,525	\$ 51,085
Cumulative effect from change in hedge accounting	—	—	—	—	—	—	27	27
Adjusted Beginning Balance	(25,360)	43,443	6,873	24,956	(1,676)	48,236	4,552	51,112
Other comprehensive (loss)/income before reclassifications	(37,308)	—	(16,679)	(53,987)	10,450	—	9,493	19,943
Amounts reclassified from AOCI	(2,407)	(10,591)	(995)	(13,993)	(3,594)	(3,477)	17	(7,054)
Net comprehensive (loss)/income	(39,715)	(10,591)	(17,674)	(67,980)	6,856	(3,477)	9,510	12,889
Ending Balance	<u>\$ (65,075)</u>	<u>\$ 32,852</u>	<u>\$ (10,801)</u>	<u>\$ (43,024)</u>	<u>\$ 5,180</u>	<u>\$ 44,759</u>	<u>\$ 14,062</u>	<u>\$ 64,001</u>

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 and nine months ended September 30, 2019 and 2018:

Table 1.4

	For the Three Months Ended					
	September 30, 2019			September 30, 2018		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	<i>(in thousands)</i>					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding (losses)/gains on available-for-sale-securities	\$ (23,943)	\$ (5,028)	\$ (18,915)	\$ (12,590)	\$ (2,643)	\$ (9,947)
Less reclassification adjustments included in:						
Net interest income ⁽¹⁾	(961)	(202)	(759)	(946)	(199)	(747)
Other income ⁽²⁾	(21)	(4)	(17)	(10)	(2)	(8)
Total	\$ (24,925)	\$ (5,234)	\$ (19,691)	\$ (13,546)	\$ (2,844)	\$ (10,702)
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income ⁽³⁾	(6,543)	(1,374)	(5,169)	(1,544)	(324)	(1,220)
Total	\$ (6,543)	\$ (1,374)	\$ (5,169)	\$ (1,544)	\$ (324)	\$ (1,220)
Cash flow hedges						
Unrealized (losses)/gains on cash flow hedges	\$ (6,419)	\$ (1,348)	\$ (5,071)	\$ 3,370	\$ 708	\$ 2,662
Less reclassification adjustments included in:						
Net interest income ⁽⁴⁾	(317)	(67)	(250)	(189)	(40)	(149)
Total	\$ (6,736)	\$ (1,415)	\$ (5,321)	\$ 3,181	\$ 668	\$ 2,513
Other comprehensive (loss)/income	\$ (38,204)	\$ (8,023)	\$ (30,181)	\$ (11,909)	\$ (2,500)	\$ (9,409)

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

⁽²⁾ Represents amortization of deferred gains related to certain available-for-sale USDA Securities and Farmer Mac Guaranteed USDA Securities.

⁽³⁾ 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.

⁽⁴⁾ Relates to the recognition of unrealized gains and losses on cash flow hedges recorded in AOCI.

	For the Nine Months Ended					
	September 30, 2019			September 30, 2018		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	<i>(in thousands)</i>					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding (losses)/gains on available-for-sale-securities	\$ (47,225)	\$ (9,917)	\$ (37,308)	\$ 13,227	\$ 2,777	\$ 10,450
Less reclassification adjustments included in:						
Net interest income ⁽¹⁾	(2,870)	(603)	(2,267)	(4,523)	(949)	(3,574)
Other income ⁽²⁾	(177)	(37)	(140)	(26)	(6)	(20)
Total	\$ (50,272)	\$ (10,557)	\$ (39,715)	\$ 8,678	\$ 1,822	\$ 6,856
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income ⁽³⁾	(13,406)	(2,815)	(10,591)	(4,400)	(923)	(3,477)
Total	\$ (13,406)	\$ (2,815)	\$ (10,591)	\$ (4,400)	\$ (923)	\$ (3,477)
Cash flow hedges						
Unrealized (losses)/gains on cash flow hedges	\$ (21,113)	\$ (4,434)	\$ (16,679)	\$ 12,017	\$ 2,524	\$ 9,493
Less reclassification adjustments included in:						
Net interest income ⁽⁴⁾	(1,260)	(265)	(995)	21	4	17
Total	\$ (22,373)	\$ (4,699)	\$ (17,674)	\$ 12,038	\$ 2,528	\$ 9,510
Other comprehensive (loss)/income	\$ (86,051)	\$ (18,071)	\$ (67,980)	\$ 16,316	\$ 3,427	\$ 12,889

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

⁽²⁾ Represents amortization of deferred gains related to certain available-for-sale USDA Securities and Farmer Mac Guaranteed USDA Securities.

- (3) 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.
- (4) Relates to the recognition of unrealized gains and losses on cash flow hedges recorded in AOCI.

(c) New Accounting Standards

Recently Adopted Accounting Guidance

Standard	Description	Date of Adoption	Effect on Consolidated Financial Statements
ASU 2016-02, Leases (Topic 842)	This Update provides new guidance intended to improve financial reporting about leasing transactions. This Update requires organizations that lease assets to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases. It also requires new disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases.	January 1, 2019	The adoption of this Update did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows.
ASU 2018-15, Intangibles - Goodwill and Other Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract	The amendments in this Update align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license).	July 1, 2019	The adoption of this Update did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows.

Recently Issued Accounting Guidance, Not Yet Adopted Within Our Consolidated Financial Statements

Standard	Description	Date of Planned Adoption	Effect on Consolidated Financial Statements
ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	This Update 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, as well as require entities to use forward-looking information to form their credit loss estimates.	January 1, 2020	Farmer Mac has substantially completed its models to estimate lifetime expected credit losses on financial instruments measured at amortized cost and on available-for-sale debt securities. We are currently testing and validating the models and data inputs and developing the policies, procedures and internal controls for estimating the allowance for credit losses under the requirements of this new standard. Farmer Mac does not expect that the adoption of this new guidance will have a material effect on its financial condition, results of operations or cash flows. The actual effect at the adoption date will depend upon the nature and characteristics of the portfolio as well as macroeconomic conditions and forecasts at that time.
ASU 2017-08, Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities	The amendments in this Update shorten the amortization period for certain callable debt securities held at a premium by requiring the premium to be amortized to the earliest call date. There is no required accounting change for securities held at a discount in this Update.	January 1, 2020	Farmer Mac does not expect that adoption of the new guidance will have a material effect on Farmer Mac's financial condition, results of operations or cash flows.
ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement	The amendments in this Update modify the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurements, including the consideration of costs and benefits. Certain disclosure requirements were either removed, modified, or added.	January 1, 2020	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.

(d) 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 September 30, 2019 and December 31, 2018:

Table 2.1

	As of September 30, 2019					Fair Value
	Amount Outstanding	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	
<i>(in thousands)</i>						
Available-for-sale:						
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 19,700	\$ —	\$ 19,700	\$ —	\$ (492)	\$ 19,208
Floating rate asset-backed securities	24,860	(116)	24,744	—	(175)	24,569
Floating rate Government/GSE guaranteed mortgage-backed securities	1,621,660	1,271	1,622,931	2,807	(3,500)	1,622,238
Fixed rate GSE guaranteed mortgage-backed securities	325	—	325	27	—	352
Fixed rate U.S. Treasuries	1,447,197	(3,551)	1,443,646	1,701	(82)	1,445,265
Total available-for-sale	3,113,742	(2,396)	3,111,346	4,535	(4,249)	3,111,632
Held-to-maturity:						
Floating rate Government/GSE guaranteed mortgage-backed securities ⁽¹⁾	45,032	—	45,032	499	—	45,531
Total investment securities	\$ 3,158,774	\$ (2,396)	\$ 3,156,378	\$ 5,034	\$ (4,249)	\$ 3,157,163

⁽¹⁾ The held-to-maturity investment securities had a weighted average yield of 3.8% as of September 30, 2019.

	As of December 31, 2018					Fair Value
	Amount Outstanding	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	
<i>(in thousands)</i>						
Available-for-sale:						
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 19,700	\$ —	\$ 19,700	\$ —	\$ (985)	\$ 18,715
Floating rate asset-backed securities	28,940	(136)	28,804	2	(128)	28,678
Floating rate Government/GSE guaranteed mortgage-backed securities	1,379,472	1,528	1,381,000	721	(4,267)	1,377,454
Fixed rate GSE guaranteed mortgage-backed securities	384	1	385	18	—	403
Fixed rate U.S. Treasuries	797,913	(4,882)	793,031	119	(548)	792,602
Total available-for-sale	2,226,409	(3,489)	2,222,920	860	(5,928)	2,217,852
Held-to-maturity:						
Floating rate Government/GSE guaranteed mortgage-backed securities ⁽¹⁾	45,032	—	45,032	562	—	45,594
Total investment securities	\$ 2,271,441	\$ (3,489)	\$ 2,267,952	\$ 1,422	\$ (5,928)	\$ 2,263,446

⁽¹⁾ The held-to-maturity investment securities had a weighted average yield of 3.5% as of December 31, 2018.

Farmer Mac did not sell any securities from its available-for-sale investment portfolio during the three and nine months ended September 30, 2019 and 2018.

As of September 30, 2019 and December 31, 2018, unrealized losses on available-for-sale investment securities were as follows:

Table 2.2

	As of September 30, 2019			
	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
	<i>(dollars in thousands)</i>			
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ —	\$ —	\$ 19,208	\$ (492)
Floating rate asset-backed securities	8,755	(48)	15,814	(127)
Floating rate Government/GSE guaranteed mortgage-backed securities	938,135	(1,461)	308,027	(2,039)
Fixed rate U.S. Treasuries	91,411	(82)	—	—
Total	\$ 1,038,301	\$ (1,591)	\$ 343,049	\$ (2,658)
Number of securities in loss position		61		50

	As of December 31, 2018			
	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
	<i>(dollars in thousands)</i>			
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ —	\$ —	\$ 18,715	\$ (985)
Floating rate asset-backed securities	6,456	(38)	19,058	(90)
Floating rate Government/GSE guaranteed mortgage-backed securities	927,416	(2,907)	196,416	(1,360)
Fixed rate U.S. Treasuries	499,581	(336)	81,597	(212)
Total	\$ 1,433,453	\$ (3,281)	\$ 315,786	\$ (2,647)
Number of securities in loss position		72		48

The unrealized losses presented above are principally due to a general widening of market spreads and changes in the levels of interest rates from the dates of acquisition to September 30, 2019 and December 31, 2018, 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 September 30, 2019, 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 floating rate asset-backed security with a book value of \$1.7 million and a fair value of \$1.6 million that had a rating of "B." As of December 31, 2018, 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+."

Securities in unrealized loss positions for 12 months or longer have a fair value as of September 30, 2019 that is, on average, approximately 99.2% 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 September 30, 2019 and December 31, 2018. 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.

The amortized cost, fair value, and weighted-average yield of available-for-sale investment securities by remaining contractual maturity as of September 30, 2019 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 September 30, 2019		
	Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
	<i>(dollars in thousands)</i>		
Due within one year	\$ 1,386,034	\$ 1,387,726	1.37%
Due after one year through five years	255,262	254,904	2.49%
Due after five years through ten years	774,103	772,428	2.51%
Due after ten years	695,947	696,574	2.75%
Total	<u>\$ 3,111,346</u>	<u>\$ 3,111,632</u>	2.06%

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 September 30, 2019 and December 31, 2018:

Table 3.1

	As of September 30, 2019					
	Unpaid Principal Balance	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	<i>(in thousands)</i>					
Held-to-maturity:						
AgVantage	\$ 1,420,020	\$ (220)	\$ 1,419,800	\$ 16,019	\$ (660)	\$ 1,435,159
Farmer Mac Guaranteed USDA Securities	32,645	171	32,816	626	(57)	33,385
Total Farmer Mac Guaranteed Securities	1,452,665	(49)	1,452,616	16,645	(717)	1,468,544
USDA Securities	2,122,505	41,559	2,164,064	20,283	(1,273)	2,183,074
Total held-to-maturity	<u>\$ 3,575,170</u>	<u>\$ 41,510</u>	<u>\$ 3,616,680</u>	<u>\$ 36,928</u>	<u>\$ (1,990)</u>	<u>\$ 3,651,618</u>
Available-for-sale:						
AgVantage	<u>\$ 7,009,022</u>	<u>\$ (137)</u>	<u>\$ 7,008,885</u>	<u>\$ 211,878</u>	<u>\$ (38,222)</u>	<u>\$ 7,182,541</u>
Trading:						
USDA Securities ⁽¹⁾	<u>\$ 8,561</u>	<u>\$ 521</u>	<u>\$ 9,082</u>	<u>\$ 14</u>	<u>\$ (153)</u>	<u>\$ 8,943</u>

⁽¹⁾ The trading USDA securities had a weighted average yield of 5.21% as of September 30, 2019.

As of December 31, 2018

	Unpaid Principal Balance	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
<i>(in thousands)</i>						
Held-to-maturity:						
AgVantage	\$ 2,069,185	\$ (194)	\$ 2,068,991	\$ 2,637	\$ (11,948)	\$ 2,059,680
Farmer Mac Guaranteed USDA Securities	27,383	244	27,627	98	—	27,725
Total Farmer Mac Guaranteed Securities	2,096,568	50	2,096,618	2,735	(11,948)	2,087,405
USDA Securities	2,110,963	55,211	2,166,174	—	(62,227)	2,103,947
Total held-to-maturity	\$ 4,207,531	\$ 55,261	\$ 4,262,792	\$ 2,735	\$ (74,175)	\$ 4,191,352
Available-for-sale:						
AgVantage	\$ 6,003,733	\$ (204)	\$ 6,003,529	\$ 22,335	\$ (51,367)	\$ 5,974,497
Trading:						
USDA Securities ⁽¹⁾	\$ 9,591	\$ 701	\$ 10,292	\$ 20	\$ (313)	\$ 9,999

⁽¹⁾ The trading USDA securities had a weighted average yield of 5.21% as of December 31, 2018.

As of September 30, 2019 and December 31, 2018, 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 September 30, 2019					
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	Fair Value	Unrealized Loss
<i>(in thousands)</i>					
Held-to-maturity:					
AgVantage	\$ —	\$ —	\$ 316,340	\$ —	\$ (660)
Farmer Mac Guaranteed USDA Securities	17,081	(57)	—	—	—
USDA Securities	—	—	280,206	—	(1,273)
Total held-to-maturity	\$ 17,081	\$ (57)	\$ 596,546	\$ —	\$ (1,933)
Available-for-sale:					
AgVantage	\$ 507,482	\$ (1,107)	\$ 1,623,361	\$ —	\$ (37,115)

As of December 31, 2018

	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
	<i>(in thousands)</i>			
Held-to-maturity:				
AgVantage	\$ 669,610	\$ (1,760)	\$ 976,318	\$ (10,188)
USDA Securities	38,203	(696)	2,065,743	(61,531)
Total held-to-maturity	<u>\$ 707,813</u>	<u>\$ (2,456)</u>	<u>\$ 3,042,061</u>	<u>\$ (71,719)</u>
Available-for-sale:				
AgVantage	<u>\$ 1,480,423</u>	<u>\$ (9,364)</u>	<u>\$ 1,599,679</u>	<u>\$ (42,003)</u>

The unrealized losses presented above are principally due to changes in interest rates from the date of acquisition to September 30, 2019 and December 31, 2018, as applicable. The unrealized losses on the held-to-maturity USDA Securities as of both September 30, 2019 and December 31, 2018 reflect their increased cost basis resulting from their transfer to held-to-maturity as of October 1, 2016.

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 24 and 38 available-for-sale securities as of September 30, 2019 and December 31, 2018, respectively. There were 5 and 43 held-to-maturity AgVantage securities with an unrealized loss as of September 30, 2019 and December 31, 2018, respectively. As of September 30, 2019, 15 available-for-sale AgVantage securities had been in a loss position for more than 12 months. As of December 31, 2018, 21 available-for-sale AgVantage securities had been in a loss position for more than 12 months. 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-temporarily impaired as of either September 30, 2019 or December 31, 2018. 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 and nine months ended September 30, 2019 and 2018, Farmer Mac realized no gains or losses from the sale of Farmer Mac Guaranteed Securities or 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 September 30, 2019 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 September 30, 2019		
	Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
	<i>(dollars in thousands)</i>		
Due within one year	\$ 560,697	\$ 559,763	2.47%
Due after one year through five years	3,637,536	3,690,151	3.01%
Due after five years through ten years	1,262,707	1,308,724	3.10%
Due after ten years	1,547,945	1,623,903	3.40%
Total	<u>\$ 7,008,885</u>	<u>\$ 7,182,541</u>	3.07%

	As of September 30, 2019		
	Held-to-Maturity Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
	<i>(dollars in thousands)</i>		
Due within one year	\$ 461,295	\$ 461,085	2.55%
Due after one year through five years	1,043,619	1,059,512	3.23%
Due after five years through ten years	201,354	202,753	3.44%
Due after ten years	1,910,412	1,928,268	3.61%
Total	<u>\$ 3,616,680</u>	<u>\$ 3,651,618</u>	3.36%

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. For more information about Farmer Mac's financial derivatives, see Note 6 in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

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 September 30, 2019 and December 31, 2018:

Table 4.1

As of September 30, 2019						
Notional Amount	Fair Value		Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Term (in years)
	Asset	(Liability)				
<i>(dollars in thousands)</i>						
Fair value hedges:						
Interest rate swaps:						
Pay fixed non-callable	\$ 4,913,988	\$ 2,448	\$ (4,942)	2.47%	2.18%	11.30
Receive fixed non-callable	1,547,200	266	(5,004)	2.17%	2.08%	1.38
Receive fixed callable	340,000	891	(178)	2.09%	2.58%	2.33
Cash flow hedges:						
Interest rate swaps:						
Pay fixed non-callable	428,000	1,338	(2,989)	2.36%	2.41%	5.68
No hedge designation:						
Interest rate swaps:						
Pay fixed non-callable	329,745	—	(16,899)	3.59%	2.26%	5.65
Receive fixed non-callable	2,785,020	—	—	2.10%	2.19%	1.40
Receive fixed callable	655,000	180	(17)	1.48%	1.64%	0.76
Basis swaps	2,770,500	466	(543)	2.07%	2.01%	0.95
Treasury futures	29,600		(25)			130.23
Credit valuation adjustment		—	55			
Total financial derivatives	<u>\$ 13,799,053</u>	\$ 5,589	\$ (30,542)			
Collateral (held)/pledged		(2,655)	167,060			
Net amount		<u>\$ 2,934</u>	<u>\$ 136,518</u>			

As of December 31, 2018

	Fair Value		Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Term (in years)
	Notional Amount	Asset				
<i>(dollars in thousands)</i>						
Fair value hedges:						
Interest rate swaps:						
Pay fixed non-callable	\$ 3,097,084	\$ 3,004	\$ (4,326)	2.42%	2.58%	9.75
Receive fixed non-callable	1,871,200	547	(4,484)	2.50%	1.84%	1.58
Receive fixed callable	160,000	338	(28)	2.35%	3.06%	2.91
Cash flow hedges:						
Interest rate swaps:						
Pay fixed non-callable	373,000	2,441	(99)	2.40%	2.83%	6.12
No hedge designation:						
Interest rate swaps:						
Pay fixed non-callable	316,664	796	(10,399)	3.69%	2.52%	6.25
Receive fixed non-callable	2,347,371	—	—	2.37%	2.10%	0.86
Basis swaps	1,770,026	421	(130)	2.45%	2.49%	1.27
Treasury futures	20,400	—	(188)			121.09
Credit valuation adjustment		(60)	21			
Total financial derivatives	<u>\$ 9,955,745</u>	<u>\$ 7,487</u>	<u>\$ (19,633)</u>			
Collateral (held)/pledged		(1,778)	47,018			
Net amount		<u>\$ 5,709</u>	<u>\$ 27,385</u>			

As of September 30, 2019, Farmer Mac expects to reclassify \$0.8 million after tax from accumulated other comprehensive income 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 after September 30, 2019. During the three and nine months ended September 30, 2019 and 2018, there were no gains or losses from interest rate swaps designated as cash flow hedges reclassified to earnings because it became probable that the original forecasted transaction would not occur.

The following table summarizes the net income/(expense) recognized in the consolidated statements of operations related to derivatives for the three and nine months ended September 30, 2019 and 2018:

Table 4.2

For the Three Months Ended September 30, 2019					
Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives					
	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Gains/(losses) on financial derivatives	Total
<i>(in thousands)</i>					
Total amounts presented in the consolidated statement of operations:	\$ 81,649	\$ 56,992	\$ (121,384)	\$ (7,360)	\$ 9,897
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	(1,051)	(584)	(961)	—	(2,596)
Recognized on hedged items	31,435	7,321	(10,778)	—	27,978
Discount amortization recognized on hedged items	—	—	(146)	—	(146)
Income/(expense) related to interest settlements on fair value hedging relationships	<u>\$ 30,384</u>	<u>\$ 6,737</u>	<u>\$ (11,885)</u>	<u>\$ —</u>	<u>\$ 25,236</u>
(Losses)/gains on fair value hedging relationships:					
Recognized on derivatives	\$ (87,495)	\$ (35,597)	\$ 1,979	\$ —	\$ (121,113)
Recognized on hedged items	84,164	33,493	(1,034)	—	116,623
(Losses)/gains on fair value hedging relationships	<u>\$ (3,331)</u>	<u>\$ (2,104)</u>	<u>\$ 945</u>	<u>\$ —</u>	<u>\$ (4,490)</u>
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	\$ —	\$ —	\$ 317	\$ —	\$ 317
Recognized on hedged items	—	—	(2,726)	—	(2,726)
Discount amortization recognized on hedged items	—	—	(1)	—	(1)
Expense recognized on cash flow hedges	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (2,410)</u>	<u>\$ —</u>	<u>\$ (2,410)</u>
Losses on financial derivatives not designated in hedge relationships:					
Losses on interest rate swaps	\$ —	\$ —	\$ —	\$ (7,402)	\$ (7,402)
Interest income on interest rate swaps	—	—	—	127	127
Treasury futures	—	—	—	(85)	(85)
Losses on financial derivatives not designated in hedge relationships	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (7,360)</u>	<u>\$ (7,360)</u>

For the Three Months Ended September 30, 2018

Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives

	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Gains/(losses) on financial derivatives	Total
	<i>(in thousands)</i>				
Total amounts presented in the consolidated statement of operations	\$ 76,870	\$ 50,622	\$ (97,557)	\$ 628	\$ 30,563
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	1,272	(98)	(2,702)	—	(1,528)
Recognized on hedged items	16,769	1,660	(9,821)	—	8,608
Discount amortization recognized on hedged items	—	—	(177)	—	(177)
Income/(expense) related to interest settlements on fair value hedging relationships	\$ 18,041	\$ 1,562	\$ (12,700)	\$ —	\$ 6,903
Gains/(losses) on fair value hedging relationships:					
Recognized on derivatives	\$ 13,420	\$ 3,909	\$ (1,188)	\$ —	\$ 16,141
Recognized on hedged items	(13,432)	(4,062)	2,404	—	(15,090)
Gains/(losses) on fair value hedging relationships	\$ (12)	\$ (153)	\$ 1,216	\$ —	\$ 1,051
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	\$ —	\$ —	\$ 189	\$ —	\$ 189
Recognized on hedged items	—	—	(2,501)	—	(2,501)
Discount amortization recognized on hedged items	—	—	(2)	—	(2)
Expense recognized on cash flow hedges	\$ —	\$ —	\$ (2,314)	\$ —	\$ (2,314)
Gains on financial derivatives not designated in hedging relationships:					
Gains on interest rate swaps	\$ —	\$ —	\$ —	\$ 3,267	\$ 3,267
Interest expense on interest rate swaps	—	—	—	(3,048)	(3,048)
Treasury futures	—	—	—	409	409
Gains on financial derivatives not designated in hedge relationships	\$ —	\$ —	\$ —	\$ 628	\$ 628

For the Nine Months Ended September 30, 2019

Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives

	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Gains/(losses) on financial derivatives	Total
	<i>(in thousands)</i>				
Total amounts presented in the consolidated statement of operations	\$ 252,629	\$ 167,792	\$ (358,374)	\$ 1,193	\$ 63,240
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	1,665	(808)	(6,751)	—	(5,894)
Recognized on hedged items	86,628	18,199	(32,594)	—	72,233
Discount amortization recognized on hedged items	—	—	(460)	—	(460)
Income/(expense) related to interest settlements on fair value hedging relationships	\$ 88,293	\$ 17,391	\$ (39,805)	\$ —	\$ 65,879
Gains/(losses) on fair value hedging relationships:					
Recognized on derivatives	\$ (262,886)	\$ (89,631)	\$ 27,101	\$ —	\$ (325,416)
Recognized on hedged items	258,155	83,524	(24,880)	—	316,799
Gains/(losses) on fair value hedging relationships	\$ (4,731)	\$ (6,107)	\$ 2,221	\$ —	\$ (8,617)
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	\$ —	\$ —	\$ 1,260	\$ —	\$ 1,260
Recognized on hedged items	—	—	(8,142)	—	(8,142)
Discount amortization recognized on hedged items	—	—	(3)	—	(3)
Expense recognized on cash flow hedges	\$ —	\$ —	\$ (6,885)	\$ —	\$ (6,885)
Gains on financial derivatives not designated in hedging relationships:					
Gains on interest rate swaps	\$ —	\$ —	\$ —	\$ 5,920	\$ 5,920
Interest expense on interest rate swaps	—	—	—	(3,321)	(3,321)
Treasury futures	—	—	—	(1,406)	(1,406)
Gains on financial derivatives not designated in hedge relationships	\$ —	\$ —	\$ —	\$ 1,193	\$ 1,193

For the Nine Months Ended September 30, 2018

Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives

	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Gains/(losses) on financial derivatives	Total
	<i>(in thousands)</i>				
Total amounts presented in the consolidated statement of operations:	\$ 213,479	\$ 145,671	\$ (265,611)	\$ (688)	\$ 92,851
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	465	(560)	(5,315)	—	(5,410)
Recognized on hedged items	46,289	4,619	(28,633)	—	22,275
Discount amortization recognized on hedged items	—	—	(534)	—	(534)
Income/(expense) related to interest settlements on fair value hedging relationships	\$ 46,754	\$ 4,059	\$ (34,482)	\$ —	\$ 16,331
Gains/(losses) on fair value hedging relationships:					
Recognized on derivatives	\$ 46,354	\$ 12,564	\$ (13,565)	\$ —	\$ 45,353
Recognized on hedged items	(43,229)	(13,106)	16,733	—	(39,602)
Gains/(losses) on fair value hedging relationships	\$ 3,125	\$ (542)	\$ 3,168	\$ —	\$ 5,751
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	\$ —	\$ —	\$ (21)	\$ —	\$ (21)
Recognized on hedged items	—	—	(6,611)	—	(6,611)
Discount amortization recognized on hedged items	—	—	(5)	—	(5)
Expense recognized on cash flow hedges	\$ —	\$ —	\$ (6,637)	\$ —	\$ (6,637)
Losses on financial derivatives not designated in hedge relationships:					
Gains on interest rate swaps	\$ —	\$ —	\$ —	\$ 7,443	\$ 7,443
Interest expense on interest rate swaps	—	—	—	(8,903)	(8,903)
Treasury futures	—	—	—	772	772
Losses on financial derivatives not designated in hedge relationships	\$ —	\$ —	\$ —	\$ (688)	\$ (688)

The following table shows the carrying amount and associated cumulative basis adjustment related to the application of hedge accounting that is included in the carrying amount of hedged assets and liabilities in fair value hedging relationships as of September 30, 2019 and December 31, 2018:

Table 4.3

	Hedged Items in Fair Value Relationship			
	Carrying Amount of Hedged Assets/ (Liabilities)		Cumulative Amount of Fair Value Hedging Adjustments included in the Carrying Amount of the Hedged Assets/(Liabilities)	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
	<i>(in thousands)</i>			
Farmer Mac Guaranteed Securities, Available-for-Sale, at fair value ⁽¹⁾	\$ 4,167,059	\$ 2,882,919	\$ 257,231	\$ (906)
Loans held for investment, at amortized cost	1,006,952	194,617	78,091	(5,287)
Other Assets	146	—	146	—
Notes Payable, due after one year ⁽²⁾⁽³⁾	(1,902,570)	(2,021,356)	(16,238)	8,785

(1) Includes \$0.1 million and none of hedging adjustments on a discontinued hedging relationship as of September 30, 2019 and December 31, 2018, respectively.

(2) Carrying amount represents amortized cost.

(3) Includes \$0.1 million and \$0.3 million of hedging adjustments on a discontinued hedging relationship as of September 30, 2019 and December 31, 2018, respectively.

The following table shows Farmer Mac's credit exposure to interest rate swap counterparties as of September 30, 2019 and December 31, 2018:

Table 4.4

	September 30, 2019		
	Gross Amount Recognized ⁽¹⁾	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
	<i>(in thousands)</i>		
Assets:			
Derivatives			
Interest rate swap	\$ 54,469	\$ 52,071	\$ 2,398
Liabilities:			
Derivatives			
Interest rate swap	\$ 421,166	\$ 399,955	\$ 21,211

(1) Gross amount excludes netting arrangements and any adjustment for nonperformance risk, but includes accrued interest.

	December 31, 2018		
	Gross Amount Recognized ⁽¹⁾	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
	<i>(in thousands)</i>		
Assets:			
Derivatives			
Interest rate swaps	\$ 51,267	\$ 48,124	\$ 3,143
Liabilities:			
Derivatives			
Interest rate swaps	\$ 78,437	\$ 64,568	\$ 13,869

(1) Gross amount excludes netting arrangements and any adjustment for nonperformance risk, but includes accrued interest.

As of September 30, 2019, Farmer Mac held \$2.7 million of cash and no investment securities as collateral for its derivatives in net asset positions resulting in uncollateralized net liability positions of \$0.3 million. As of December 31, 2018, Farmer Mac held \$0.7 million of cash and \$1.1 million of investment securities as collateral for its derivatives in net asset positions, resulting in uncollateralized net asset positions of \$1.4 million.

Farmer Mac posted \$0.6 million of cash and \$166.5 million of investment securities as of September 30, 2019 and posted no cash and \$47.0 million investment securities as of December 31, 2018. 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 September 30, 2019 and December 31, 2018, it could have been required to settle its obligations under the agreements, but would not have been required to post additional collateral. As of September 30, 2019 and December 31, 2018, 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.

Of Farmer Mac's \$13.8 billion notional amount of interest rate swaps outstanding as of September 30, 2019, \$10.8 billion were cleared through the swap clearinghouse, the Chicago Mercantile Exchange ("CME"). Of Farmer Mac's \$9.9 billion notional amount of interest rate swaps outstanding as of December 31, 2018, \$8.5 billion were cleared through the swap clearinghouse. For more information about interest rate swaps cleared through a clearinghouse, see Note 6 in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

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. The following table displays the composition of the loan balances as of September 30, 2019 and December 31, 2018:

Table 5.1

	As of September 30, 2019			As of December 31, 2018		
	Unsecuritized	In Consolidated Trusts	Total	Unsecuritized	In Consolidated Trusts	Total
	<i>(in thousands)</i>					
Farm & Ranch	\$ 3,310,248	\$ 1,526,718	\$ 4,836,966	\$ 3,071,222	\$ 1,517,101	\$ 4,588,323
Rural Utilities	1,612,773	—	1,612,773	938,843	—	938,843
Total unpaid principal balance ⁽¹⁾	4,923,021	1,526,718	6,449,739	4,010,065	1,517,101	5,527,166
Unamortized premiums, discounts, and other cost basis adjustments	75,505	—	75,505	(5,097)	—	(5,097)
Total loans	4,998,526	1,526,718	6,525,244	4,004,968	1,517,101	5,522,069
Allowance for loan losses	(6,549)	(1,475)	(8,024)	(5,565)	(1,452)	(7,017)
Total loans, net of allowance	\$ 4,991,977	\$ 1,525,243	\$ 6,517,220	\$ 3,999,403	\$ 1,515,649	\$ 5,515,052

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

Allowance for Losses

Farm & Ranch

The following is a summary of the changes in the total allowance for losses for the three and nine months ended September 30, 2019 and 2018:

Table 5.2

	September 30, 2019			September 30, 2018		
	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses
	<i>(in thousands)</i>					
For the Three Months Ended:						
Beginning Balance	\$ 7,264	\$ 1,880	\$ 9,144	\$ 6,789	\$ 2,249	\$ 9,038
Provision for/(release of) losses	760	(137)	623	99	(102)	(3)
Charge-offs	—	—	—	(17)	—	(17)
Ending Balance	<u>\$ 8,024</u>	<u>\$ 1,743</u>	<u>\$ 9,767</u>	<u>\$ 6,871</u>	<u>\$ 2,147</u>	<u>\$ 9,018</u>
For the Nine Months Ended:						
Beginning Balance	\$ 7,017	\$ 2,167	\$ 9,184	\$ 6,796	\$ 2,070	\$ 8,866
Provision for/(release of) losses	1,074	(424)	650	92	77	169
Charge-offs	(67)	—	(67)	(17)	—	(17)
Ending Balance	<u>\$ 8,024</u>	<u>\$ 1,743</u>	<u>\$ 9,767</u>	<u>\$ 6,871</u>	<u>\$ 2,147</u>	<u>\$ 9,018</u>

The provision for the allowance for loan losses recorded during third quarter 2019 was attributable to a decrease in the portfolio credit quality, primarily related to idiosyncratic factors of a few large loans and less related to systemic, macroeconomic factors. The release from the reserve for losses recorded during third quarter 2019 was primarily attributable to a net volume decrease in off-balance sheet Farm & Ranch LTSPCs and a slight improvement in off-balance sheet portfolio credit quality. The \$0.1 million charge-off that occurred during the nine months ended September 30, 2019 related to the foreclosure of one part-time farm loan.

During both the three and nine months ended September 30, 2018, Farmer Mac recorded a provision to its allowance for loan losses of \$0.1 million. During those same periods, Farmer Mac also recorded a release of reserve for losses of \$0.1 million and a provision to the reserve for losses of \$0.1 million, respectively. The provisions for the allowance for loan losses recorded during the three and nine months ended September 30, 2018 were attributable to an increase in the balance of on-balance sheet Farm & Ranch loans, which was partially offset by a slight improvement in over portfolio credit quality. The release of the reserve for losses recorded during third quarter 2018 was attributable to a decrease in the balance of loans underlying LTSPCs since second quarter 2018. The provision for the reserve for losses recorded during the nine months ended September 30, 2018 was attributable to an increase in the balance of loans underlying LTSPCs since December 31, 2017. The charge-off that Farmer Mac recorded during the three and nine months ended September 30, 2018 related to one loan that was foreclosed and transitioned to REO during third quarter 2018.

The following tables present the changes in the total allowance for losses for the three and nine months ended September 30, 2019 and 2018 by commodity type:

Table 5.3

September 30, 2019							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total	
<i>(in thousands)</i>							
For the Three Months Ended:							
Beginning Balance	\$ 4,773	\$ 1,926	\$ 1,423	\$ 400	\$ 603	\$ 19	\$ 9,144
Provision for/(release of) losses	88	179	404	(16)	(18)	(14)	623
Ending Balance	<u>\$ 4,861</u>	<u>\$ 2,105</u>	<u>\$ 1,827</u>	<u>\$ 384</u>	<u>\$ 585</u>	<u>\$ 5</u>	<u>\$ 9,767</u>
For the Nine Months Ended:							
Beginning Balance	\$ 4,394	\$ 2,126	\$ 1,460	\$ 474	\$ 720	\$ 10	\$ 9,184
Provision for/(release of) losses	467	(21)	367	(23)	(135)	(5)	650
Charge-offs	—	—	—	(67)	—	—	(67)
Ending Balance	<u>\$ 4,861</u>	<u>\$ 2,105</u>	<u>\$ 1,827</u>	<u>\$ 384</u>	<u>\$ 585</u>	<u>\$ 5</u>	<u>\$ 9,767</u>
September 30, 2018							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total	
<i>(in thousands)</i>							
For the Three Months Ended:							
Beginning Balance	\$ 4,125	\$ 2,368	\$ 1,322	\$ 448	\$ 720	\$ 55	\$ 9,038
Provision for/(release of) losses	(99)	40	148	50	(97)	(45)	(3)
Charge-offs	—	—	—	(17)	—	—	(17)
Ending Balance	<u>\$ 4,026</u>	<u>\$ 2,408</u>	<u>\$ 1,470</u>	<u>\$ 481</u>	<u>\$ 623</u>	<u>\$ 10</u>	<u>\$ 9,018</u>
For the Nine Months Ended:							
Beginning Balance	\$ 4,081	\$ 2,469	\$ 1,211	\$ 481	\$ 606	\$ 18	\$ 8,866
Provision for/(release of) losses	(55)	(61)	259	17	17	(8)	169
Charge-offs	—	—	—	(17)	—	—	(17)
Ending Balance	<u>\$ 4,026</u>	<u>\$ 2,408</u>	<u>\$ 1,470</u>	<u>\$ 481</u>	<u>\$ 623</u>	<u>\$ 10</u>	<u>\$ 9,018</u>

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 September 30, 2019 and December 31, 2018:

Table 5.4

	As of September 30, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	<i>(in thousands)</i>						
Ending Balance:							
Collectively evaluated for impairment:							
On-balance sheet	\$ 2,494,029	\$ 1,043,626	\$ 738,936	\$ 338,798	\$ 11,379	\$ 1,425	\$ 4,628,193
Off-balance sheet	1,187,972	519,924	605,422	161,045	67,562	2,855	2,544,780
Total	\$ 3,682,001	\$ 1,563,550	\$ 1,344,358	\$ 499,843	\$ 78,941	\$ 4,280	\$ 7,172,973
Individually evaluated for impairment:							
On-balance sheet	\$ 108,497	\$ 49,225	\$ 43,346	\$ 7,705	\$ —	\$ —	\$ 208,773
Off-balance sheet	5,116	2,122	3,975	712	—	57	11,982
Total	\$ 113,613	\$ 51,347	\$ 47,321	\$ 8,417	\$ —	\$ 57	\$ 220,755
Total Farm & Ranch loans:							
On-balance sheet	\$ 2,602,526	\$ 1,092,851	\$ 782,282	\$ 346,503	\$ 11,379	\$ 1,425	\$ 4,836,966
Off-balance sheet	1,193,088	522,046	609,397	161,757	67,562	2,912	2,556,762
Total	\$ 3,795,614	\$ 1,614,897	\$ 1,391,679	\$ 508,260	\$ 78,941	\$ 4,337	\$ 7,393,728
Allowance for Losses:							
Collectively evaluated for impairment:							
On-balance sheet	\$ 1,729	\$ 885	\$ 550	\$ 242	\$ 28	\$ 1	\$ 3,435
Off-balance sheet	556	106	294	23	557	4	1,540
Total	\$ 2,285	\$ 991	\$ 844	\$ 265	\$ 585	\$ 5	\$ 4,975
Individually evaluated for impairment:							
On-balance sheet	\$ 2,495	\$ 1,070	\$ 920	\$ 104	\$ —	\$ —	\$ 4,589
Off-balance sheet	81	44	63	15	—	—	203
Total	\$ 2,576	\$ 1,114	\$ 983	\$ 119	\$ —	\$ —	\$ 4,792
Total Farm & Ranch loans:							
On-balance sheet	\$ 4,224	\$ 1,955	\$ 1,470	\$ 346	\$ 28	\$ 1	\$ 8,024
Off-balance sheet	637	150	357	38	557	4	1,743
Total	\$ 4,861	\$ 2,105	\$ 1,827	\$ 384	\$ 585	\$ 5	\$ 9,767

As of December 31, 2018

	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
<i>(in thousands)</i>							
Ending Balance:							
Collectively evaluated for impairment:							
On-balance sheet	\$ 2,452,803	\$ 952,719	\$ 705,752	\$ 329,070	\$ 12,097	\$ 4,477	\$ 4,456,918
Off-balance sheet	1,239,094	515,520	624,522	166,907	73,084	3,286	2,622,413
Total	<u>\$ 3,691,897</u>	<u>\$ 1,468,239</u>	<u>\$ 1,330,274</u>	<u>\$ 495,977</u>	<u>\$ 85,181</u>	<u>\$ 7,763</u>	<u>\$ 7,079,331</u>
Individually evaluated for impairment:							
On-balance sheet	\$ 66,432	\$ 36,333	\$ 21,361	\$ 7,278	\$ —	\$ —	\$ 131,404
Off-balance sheet	13,298	5,249	3,737	883	—	69	23,236
Total	<u>\$ 79,730</u>	<u>\$ 41,582</u>	<u>\$ 25,098</u>	<u>\$ 8,161</u>	<u>\$ —</u>	<u>\$ 69</u>	<u>\$ 154,640</u>
Total Farm & Ranch loans:							
On-balance sheet	\$ 2,519,235	\$ 989,052	\$ 727,113	\$ 336,348	\$ 12,097	\$ 4,477	\$ 4,588,322
Off-balance sheet	1,252,392	520,769	628,259	167,790	73,084	3,355	2,645,649
Total	<u>\$ 3,771,627</u>	<u>\$ 1,509,821</u>	<u>\$ 1,355,372</u>	<u>\$ 504,138</u>	<u>\$ 85,181</u>	<u>\$ 7,832</u>	<u>\$ 7,233,971</u>
Allowance for Losses:							
Collectively evaluated for impairment:							
On-balance sheet	\$ 2,120	\$ 822	\$ 731	\$ 303	\$ 84	\$ 4	\$ 4,064
Off-balance sheet	668	170	207	29	636	5	1,715
Total	<u>\$ 2,788</u>	<u>\$ 992</u>	<u>\$ 938</u>	<u>\$ 332</u>	<u>\$ 720</u>	<u>\$ 9</u>	<u>\$ 5,779</u>
Individually evaluated for impairment:							
On-balance sheet	\$ 1,329	\$ 1,065	\$ 437	\$ 122	\$ —	\$ —	\$ 2,953
Off-balance sheet	277	69	85	20	—	1	452
Total	<u>\$ 1,606</u>	<u>\$ 1,134</u>	<u>\$ 522</u>	<u>\$ 142</u>	<u>\$ —</u>	<u>\$ 1</u>	<u>\$ 3,405</u>
Total Farm & Ranch loans:							
On-balance sheet	\$ 3,449	\$ 1,887	\$ 1,168	\$ 425	\$ 84	\$ 4	\$ 7,017
Off-balance sheet	945	239	292	49	636	6	2,167
Total	<u>\$ 4,394</u>	<u>\$ 2,126</u>	<u>\$ 1,460</u>	<u>\$ 474</u>	<u>\$ 720</u>	<u>\$ 10</u>	<u>\$ 9,184</u>

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 September 30, 2019 and December 31, 2018:

Table 5.5

As of September 30, 2019							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total	
<i>(in thousands)</i>							
Impaired Loans:							
With no specific allowance:							
Recorded investment	\$ 29,146	\$ 16,721	\$ 4,771	\$ 2,240	\$ —	\$ 57	\$ 52,935
Unpaid principal balance	29,055	16,669	4,758	2,233	—	57	52,772
With a specific allowance:							
Recorded investment ⁽¹⁾	84,808	34,781	42,686	6,202	—	—	168,477
Unpaid principal balance	84,558	34,678	42,563	6,184	—	—	167,983
Associated allowance	2,576	1,114	983	119	—	—	4,792
Total:							
Recorded investment	113,954	51,502	47,457	8,442	—	57	221,412
Unpaid principal balance	113,613	51,347	47,321	8,417	—	57	220,755
Associated allowance	2,576	1,114	983	119	—	—	4,792
Recorded investment of loans on nonaccrual status ⁽²⁾	\$ 34,543	\$ 24,425	\$ 30,213	\$ 3,106	\$ —	\$ —	\$ 92,287

⁽¹⁾ Impairment analysis was performed in the aggregate in consideration of similar risk characteristics of the assets and historical statistics on \$166.1 million (75%) of impaired loans as of September 30, 2019, which resulted in a specific allowance of \$3.4 million.

⁽²⁾ Includes \$36.3 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, 2018							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total	
<i>(in thousands)</i>							
Impaired Loans:							
With no specific allowance:							
Recorded investment	\$ 20,734	\$ 3,592	\$ 5,764	\$ 1,922	\$ —	\$ —	\$ 32,012
Unpaid principal balance	20,632	3,573	5,737	1,912	—	—	31,854
With a specific allowance:							
Recorded investment ⁽¹⁾	59,335	38,176	19,443	6,276	—	70	123,300
Unpaid principal balance	59,098	38,009	19,361	6,249	—	69	122,786
Associated allowance	1,606	1,134	522	142	—	1	3,405
Total:							
Recorded investment	80,069	41,768	25,207	8,198	—	70	155,312
Unpaid principal balance	79,730	41,582	25,098	8,161	—	69	154,640
Associated allowance	1,606	1,134	522	142	—	1	3,405
Recorded investment of loans on nonaccrual status ⁽²⁾	\$ 26,611	\$ 21,349	\$ 8,803	\$ 4,645	\$ —	\$ —	\$ 61,408

⁽¹⁾ Impairment analysis was performed in the aggregate in consideration of similar risk characteristics of the assets and historical statistics on \$120.9 million (78%) of impaired loans as of December 31, 2018, which resulted in a specific allowance of \$2.7 million.

⁽²⁾ Includes \$41.8 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 and nine months ended September 30, 2019 and 2018:

Table 5.6

	September 30, 2019						Total
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	
<i>(in thousands)</i>							
For the Three Months Ended:							
Average recorded investment in impaired loans	\$106,535	\$ 45,197	\$ 36,859	\$ 8,265	\$ —	\$ 58	\$196,914
Income recognized on impaired loans	178	166	87	105	—	—	536
For the Nine Months Ended:							
Average recorded investment in impaired loans	\$ 93,088	\$ 41,524	\$ 31,189	\$ 8,079	\$ —	\$ 63	\$173,943
Income recognized on impaired loans	879	586	504	227	—	—	2,196

	September 30, 2018						Total
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	
<i>(in thousands)</i>							
For the Three Months Ended:							
Average recorded investment in impaired loans	\$ 75,920	\$ 44,818	\$ 24,443	\$ 8,898	\$ —	\$ 72	\$154,151
Income recognized on impaired loans	223	933	122	56	—	—	1,334
For the Nine Months Ended:							
Average recorded investment in impaired loans	\$ 73,968	\$ 44,122	\$ 23,358	\$ 8,874	\$ —	\$ 394	\$150,716
Income recognized on impaired loans	942	1,597	261	173	—	—	2,973

For the nine months ended September 30, 2019, the recorded investment of loans determined to be troubled debt restructurings ("TDRs") was \$35.6 million both before and after restructuring. For the nine months ended September 30, 2018, the recorded investment of loans determined to be TDRs was immaterial. As of September 30, 2019 and 2018, 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 loans losses was immaterial for the nine months ended September 30, 2019 and 2018.

Net credit losses and 90-day delinquencies as of and for the periods indicated for loans held and loans underlying off-balance sheet securities representing interests in pools of eligible Farm & Ranch loans ("Farm & Ranch Guaranteed Securities") and LTSPCs are presented in the table below. As of September 30, 2019, 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 5.7

	90-Day Delinquencies ⁽¹⁾		Net Credit Losses/(Recoveries)	
	As of		For the Nine Months Ended	
	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2018
<i>(in thousands)</i>				
On-balance sheet assets:				
Farm & Ranch:				
Loans	\$ 55,987	\$ 19,577	\$ 131	\$ 40
Total on-balance sheet	\$ 55,987	\$ 19,577	\$ 131	\$ 40
Off-balance sheet assets:				
Farm & Ranch:				
LTSPCs	\$ 3,704	\$ 7,304	\$ —	\$ —
Total off-balance sheet	\$ 3,704	\$ 7,304	\$ —	\$ —
Total	\$ 59,691	\$ 26,881	\$ 131	\$ 40

⁽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 \$56.0 million of on-balance sheet loans reported as 90-day delinquencies as of September 30, 2019, none were subject to "removal-of-account" provisions. Of the \$19.6 million of on-balance sheet loans reported as 90-day delinquencies as of December 31, 2018, \$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 September 30, 2019 and December 31, 2018:

Table 5.8

	As of September 30, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	<i>(in thousands)</i>						
Credit risk profile by internally assigned grade⁽¹⁾							
On-balance sheet:							
Acceptable	\$ 2,401,258	\$ 1,006,255	\$ 715,900	\$ 327,882	\$ 11,379	\$ 1,362	\$ 4,464,036
Special mention ⁽²⁾	92,771	37,371	23,036	10,916	—	63	164,157
Substandard ⁽³⁾	108,497	49,225	43,346	7,705	—	—	208,773
Total on-balance sheet	\$ 2,602,526	\$ 1,092,851	\$ 782,282	\$ 346,503	\$ 11,379	\$ 1,425	\$ 4,836,966
Off-Balance Sheet:							
Acceptable	\$ 1,067,311	\$ 485,044	\$ 537,370	\$ 157,630	\$ 67,562	\$ 2,280	\$ 2,317,197
Special mention ⁽²⁾	80,746	30,935	45,302	845	—	—	157,828
Substandard ⁽³⁾	45,031	6,067	26,725	3,282	—	632	81,737
Total off-balance sheet	\$ 1,193,088	\$ 522,046	\$ 609,397	\$ 161,757	\$ 67,562	\$ 2,912	\$ 2,556,762
Total Ending Balance:							
Acceptable	\$ 3,468,569	\$ 1,491,299	\$ 1,253,270	\$ 485,512	\$ 78,941	\$ 3,642	\$ 6,781,233
Special mention ⁽²⁾	173,517	68,306	68,338	11,761	—	63	321,985
Substandard ⁽³⁾	153,528	55,292	70,071	10,987	—	632	290,510
Total	\$ 3,795,614	\$ 1,614,897	\$ 1,391,679	\$ 508,260	\$ 78,941	\$ 4,337	\$ 7,393,728
Commodity analysis of past due loans⁽¹⁾							
On-balance sheet	\$ 24,112	\$ 15,598	\$ 15,139	\$ 1,138	\$ —	\$ —	\$ 55,987
Off-balance sheet	1,493	903	824	484	—	—	3,704
90 days or more past due	\$ 25,605	\$ 16,501	\$ 15,963	\$ 1,622	\$ —	\$ —	\$ 59,691

⁽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, 2018

	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
<i>(in thousands)</i>							
Credit risk profile by internally assigned grade⁽¹⁾							
On-balance sheet:							
Acceptable	\$ 2,381,853	\$ 937,793	\$ 679,253	\$ 321,345	\$ 10,604	\$ 4,477	\$ 4,335,325
Special mention ⁽²⁾	71,096	14,926	26,499	7,725	1,493	—	121,739
Substandard ⁽³⁾	66,286	36,333	21,361	7,278	—	—	131,258
Total on-balance sheet	\$ 2,519,235	\$ 989,052	\$ 727,113	\$ 336,348	\$ 12,097	\$ 4,477	\$ 4,588,322
Off-Balance Sheet							
Acceptable	\$ 1,128,787	\$ 469,479	\$ 577,708	\$ 162,730	\$ 71,959	\$ 2,656	\$ 2,413,319
Special mention ⁽²⁾	62,430	36,778	30,703	1,023	—	—	130,934
Substandard ⁽³⁾	61,175	14,512	19,848	4,037	1,125	699	101,396
Total off-balance sheet	\$ 1,252,392	\$ 520,769	\$ 628,259	\$ 167,790	\$ 73,084	\$ 3,355	\$ 2,645,649
Total Ending Balance:							
Acceptable	\$ 3,510,640	\$ 1,407,272	\$ 1,256,961	\$ 484,075	\$ 82,563	\$ 7,133	\$ 6,748,644
Special mention ⁽²⁾	133,526	51,704	57,202	8,748	1,493	—	252,673
Substandard ⁽³⁾	127,461	50,845	41,209	11,315	1,125	699	232,654
Total	\$ 3,771,627	\$ 1,509,821	\$ 1,355,372	\$ 504,138	\$ 85,181	\$ 7,832	\$ 7,233,971
Commodity analysis of past due loans⁽¹⁾							
On-balance sheet	\$ 8,345	\$ 2,997	\$ 4,059	\$ 4,176	\$ —	\$ —	\$ 19,577
Off-balance sheet	6,476	197	—	631	—	—	7,304
90 days or more past due	\$ 14,821	\$ 3,194	\$ 4,059	\$ 4,807	\$ —	\$ —	\$ 26,881

⁽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, the range of original loan-to-value ratios, and the range in the size of borrower exposure for all Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs as of September 30, 2019 and December 31, 2018:

Table 5.9

	As of	
	September 30, 2019	December 31, 2018
	<i>(in thousands)</i>	
By commodity/collateral type:		
Crops	\$ 3,795,614	\$ 3,771,627
Permanent plantings	1,614,897	1,509,821
Livestock	1,391,679	1,355,372
Part-time farm	508,260	504,138
Ag. Storage and Processing	78,941	85,181
Other	4,337	7,832
Total	\$ 7,393,728	\$ 7,233,971
By geographic region ⁽¹⁾ :		
Northwest	\$ 850,862	\$ 855,596
Southwest	2,417,144	2,273,184
Mid-North	2,297,159	2,296,073
Mid-South	917,889	883,279
Northeast	325,674	332,370
Southeast	585,000	593,469
Total	\$ 7,393,728	\$ 7,233,971
By original loan-to-value ratio:		
0.00% to 40.00%	\$ 1,332,719	\$ 1,333,790
40.01% to 50.00%	1,864,787	1,811,166
50.01% to 60.00%	2,557,798	2,530,484
60.01% to 70.00%	1,300,301	1,244,823
70.01% to 80.00% ⁽²⁾	318,671	289,427
80.01% to 90.00% ⁽²⁾	19,452	24,281
Total	\$ 7,393,728	\$ 7,233,971
By size of borrower exposure ⁽³⁾ :		
Less than \$1,000,000	\$ 2,436,975	\$ 2,431,296
\$1,000,000 to \$4,999,999	2,731,458	2,755,996
\$5,000,000 to \$9,999,999	957,901	916,422
\$10,000,000 to \$24,999,999	644,231	601,349
\$25,000,000 and greater	623,163	528,908
Total	\$ 7,393,728	\$ 7,233,971

⁽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).

⁽²⁾ Primarily part-time farm loans. Loans with original loan-to-value ratios of greater than 80% are required to have private mortgage insurance.

⁽³⁾ Includes multiple loans to the same borrower or borrower-related entities.

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.

6. GUARANTEES AND LONG-TERM STANDBY PURCHASE COMMITMENTS

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 September 30, 2019 and December 31, 2018, 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 September 30, 2019		As of December 31, 2018	
	<i>(in thousands)</i>			
Farm & Ranch:				
Guaranteed Securities	\$	115,306	\$	135,862
USDA Guarantees:				
Farmer Mac Guaranteed USDA Securities		404,052		367,684
Institutional Credit:				
AgVantage Securities		9,225		9,898
Revolving floating rate AgVantage facility ⁽¹⁾		300,000		300,000
Total off-balance sheet Farmer Mac Guaranteed Securities	\$	828,583	\$	813,444

⁽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 Nine Months Ended			
	September 30, 2019		September 30, 2018	
	<i>(in thousands)</i>			
Proceeds from new securitizations	\$	199,396	\$	305,391
Guarantee fees received		1,122		1,481

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 \$2.4 million and \$2.8 million as of September 30, 2019 and December 31, 2018, respectively. As of September 30, 2019 and December 31, 2018, the weighted-average remaining maturity of all loans underlying off-balance sheet Farmer Mac Guaranteed Securities, excluding AgVantage securities, was 9.9 years and 10.3 years, respectively. As of September 30, 2019 and December 31, 2018, the weighted-average remaining maturity of the off-balance sheet AgVantage securities was 2.4 years and 5.0 years, respectively.

Long-Term Standby Purchase Commitments

A 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.

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 and \$3.2 billion as of September 30, 2019 and December 31, 2018, respectively.

As of September 30, 2019 and December 31, 2018, the weighted-average remaining maturity of all loans underlying LTSPCs was 15.2 years and 15.3 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 \$35.0 million and \$35.9 million as of September 30, 2019 and December 31, 2018, respectively.

7. EQUITY

Preferred Stock

On May 13, 2019, Farmer Mac issued 4.0 million shares of 5.700% Non-Cumulative Preferred Stock, Series D ("Series D Preferred Stock"), which has a par value and liquidation preference of \$25.00 per share, or \$100.0 million aggregate outstanding. Farmer Mac incurred direct costs of \$3.3 million related to the issuance of the Series D Preferred Stock. The dividend rate on the Series D Preferred Stock is a fixed rate of 5.700% per year for the life of the security. Dividends on the Series D Preferred Stock are payable when, as, and if declared by the Board of Directors of Farmer Mac and are non-cumulative, so dividends that are not declared for a quarterly payment date will not accrue. The Series D Preferred Stock has no maturity date, but Farmer Mac has the option to redeem the preferred stock on any quarterly dividend payment date on and after July 17, 2024.

On June 12, 2019, Farmer Mac used part of the net proceeds from the sale of the Series D Preferred Stock to redeem and repurchase all \$75.0 million aggregate outstanding of Farmer Mac's 6.875% Non-Cumulative Preferred Stock, Series B ("Series B Preferred Stock"), plus any declared and unpaid dividends through and including the redemption date. As a result of the retirement of the Series B Preferred Stock, Farmer Mac recognized \$2.0 million of deferred issuance costs, which is presented as "Loss on retirement of preferred stock" on the consolidated statements of operations.

Common Stock

For the first, second, and third quarter 2019, Farmer Mac paid a quarterly dividend of \$0.70 per share on all classes of its common stock. For each quarter in 2018, Farmer Mac paid a quarterly dividend of \$0.58 per share on all classes of its common stock.

Farmer Mac's Board of Directors approved a share repurchase program during third quarter 2015 authorizing Farmer Mac to repurchase up to \$25.0 million of its outstanding Class C non-voting common

stock for two years. In August 2017, Farmer Mac's Board of Directors approved the continuation of the share repurchase program on its existing terms through August 2019 for the repurchase of up to \$5.4 million of Farmer Mac's outstanding Class C non-voting common stock. This is the amount that was remaining under the share repurchase program that Farmer Mac's Board of Directors originally authorized in third quarter 2015 for the repurchase of up to \$25.0 million of outstanding Class C non-voting common stock.

On March 14, 2019, Farmer Mac's Board of Directors modified the terms of the existing share repurchase program by increasing the authorization for the repurchase to up to \$10.0 million of Farmer Mac's outstanding Class C non-voting common stock and extending the term of the program through March 2021. Farmer Mac did not repurchase any shares during the first nine months of 2019 under this program. As of September 30, 2019, 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, and has not repurchased any shares since first quarter 2016.

Capital Requirements

Farmer Mac is required to comply with the higher of the minimum capital requirement and the risk-based capital requirement. As of both September 30, 2019 and December 31, 2018, 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 September 30, 2019, Farmer Mac's minimum capital requirement was \$608.4 million and its core capital level was \$793.3 million, which was \$184.9 million above the minimum capital requirement as of that date. As of December 31, 2018, Farmer Mac's minimum capital requirement was \$545.0 million and its core capital level was \$727.6 million, which was \$182.6 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 September 30, 2019, Farmer Mac's assets and liabilities recorded at fair value included financial instruments valued at \$7.2 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 34% of total assets and 70% of financial instruments measured at fair value as of September 30, 2019. As of December 31, 2018, Farmer Mac's assets and liabilities recorded at fair value included financial instruments valued at \$6.0 billion whose fair values were estimated by management in the absence of readily determinable fair values. These financial instruments measured as Level 3 represented 32% of total assets and 73% of financial instruments measured at fair value as of December 31, 2018.

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 nine months of both

2019 and 2018, 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.

The following tables present information about Farmer Mac's assets and liabilities measured at fair value on a recurring basis as of September 30, 2019 and December 31, 2018, 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 September 30, 2019

	Level 1	Level 2	Level 3	Total
	<i>(in thousands)</i>			
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ —	\$ —	\$ 19,208	\$ 19,208
Floating rate asset-backed securities	—	24,569	—	24,569
Floating rate Government/GSE guaranteed mortgage-backed securities	—	1,622,238	—	1,622,238
Fixed rate GSE guaranteed mortgage-backed securities	—	352	—	352
Fixed rate U.S. Treasuries	1,445,265	—	—	1,445,265
Total Investment Securities	1,445,265	1,647,159	19,208	3,111,632
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	7,182,541	7,182,541
Total Farmer Mac Guaranteed Securities	—	—	7,182,541	7,182,541
USDA Securities:				
Trading	—	—	8,943	8,943
Total USDA Securities	—	—	8,943	8,943
Financial derivatives	—	5,589	—	5,589
Total Assets at fair value	\$ 1,445,265	\$ 1,652,748	\$ 7,210,692	\$ 10,308,705
Liabilities:				
Financial derivatives	\$ 25	\$ 30,517	\$ —	\$ 30,542
Total Liabilities at fair value	\$ 25	\$ 30,517	\$ —	\$ 30,542

Assets and Liabilities Measured at Fair Value as of December 31, 2018

	Level 1	Level 2	Level 3	Total
	<i>(in thousands)</i>			
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ —	\$ —	\$ 18,715	\$ 18,715
Floating rate asset-backed securities	—	28,678	—	28,678
Floating rate Government/GSE guaranteed mortgage-backed securities	—	1,377,454	—	1,377,454
Fixed rate GSE guaranteed mortgage-backed securities	—	403	—	403
Fixed rate U.S. Treasuries	792,602	—	—	792,602
Total available-for-sale	792,602	1,406,535	18,715	2,217,852
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	5,974,497	5,974,497
Total Farmer Mac Guaranteed Securities	—	—	5,974,497	5,974,497
USDA Securities:				
Trading	—	—	9,999	9,999
Total USDA Securities	—	—	9,999	9,999
Financial derivatives	—	7,487	—	7,487
Total Assets at fair value	\$ 792,602	\$ 1,414,022	\$ 6,003,211	\$ 8,209,835
Liabilities:				
Financial derivatives	\$ 188	\$ 19,445	\$ —	\$ 19,633
Total Liabilities at fair value	\$ 188	\$ 19,445	\$ —	\$ 19,633

There were no significant assets or liabilities measured at fair value on a non-recurring basis as of September 30, 2019 or December 31, 2018.

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 and nine months ended September 30, 2019 and 2018.

Table 8.2

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended September 30, 2019

	Beginning Balance	Purchases	Sales	Settlements	Realized and Unrealized Gains included in Income	Unrealized Losses included in Other Comprehensive Income	Ending Balance
	<i>(in thousands)</i>						
Recurring:							
Assets:							
Investment Securities:							
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 19,208	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 19,208
Total available-for-sale	19,208	—	—	—	—	—	19,208
Farmer Mac Guaranteed Securities:							
Available-for-sale:							
AgVantage	7,035,668	340,148	—	(254,593)	84,164	(22,846)	7,182,541
Total available-for-sale	7,035,668	340,148	—	(254,593)	84,164	(22,846)	7,182,541
USDA Securities:							
Available-for-sale							
Trading	9,201	—	—	(307)	49	—	8,943
Total USDA Securities	9,201	9,506	(9,506)	(307)	49	—	8,943
Total Assets at fair value	<u>\$ 7,064,077</u>	<u>\$ 349,654</u>	<u>\$ (9,506)</u>	<u>\$ (254,900)</u>	<u>\$ 84,213</u>	<u>\$ (22,846)</u>	<u>\$ 7,210,692</u>

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended September 30, 2018

	Beginning Balance	Purchases	Sales	Settlements	Realized and Unrealized Losses included in Income	Unrealized Losses included in Other Comprehensive Income	Ending Balance
<i>(in thousands)</i>							
Recurring:							
Assets:							
Investment Securities:							
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 19,010	\$ —	\$ —	\$ —	\$ —	\$ (49)	\$ 18,961
Total available-for-sale	19,010	—	—	—	—	(49)	18,961
Farmer Mac Guaranteed Securities:							
Available-for-sale:							
AgVantage	5,985,806	687,381	—	(689,213)	(13,432)	(13,238)	5,957,304
Total available-for-sale	5,985,806	687,381	—	(689,213)	(13,432)	(13,238)	5,957,304
USDA Securities:							
Available-for-sale	—	26,321	(26,321)	—	—	—	—
Trading ⁽¹⁾	10,748	—	—	(508)	(3)	—	10,237
Total USDA Securities	10,748	26,321	(26,321)	(508)	(3)	—	10,237
Total Assets at fair value	\$ 6,015,564	\$ 713,702	\$ (26,321)	\$ (689,721)	\$ (13,435)	\$ (13,287)	\$ 5,986,502

⁽¹⁾ Includes unrealized losses of \$9,000 attributable to assets still held as of September 30, 2018 that are recorded in "Gains/(losses) on trading securities."

Level 3 Assets and Liabilities Measured at Fair Value for the Nine Months Ended September 30, 2019

	Beginning Balance	Purchases	Sales	Settlements	Realized and Unrealized Gains included in Income	Unrealized Gains/(Losses) included in Other Comprehensive Income	Ending Balance
<i>(in thousands)</i>							
Recurring:							
Assets:							
Investment Securities:							
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 18,715	\$ —	\$ —	\$ —	\$ —	\$ 493	\$ 19,208
Total available-for-sale	18,715	—	—	—	—	493	19,208
Farmer Mac Guaranteed Securities:							
Available-for-sale:							
AgVantage	5,974,497	1,730,244	—	(724,906)	258,155	(55,449)	7,182,541
Total available-for-sale	5,974,497	1,730,244	—	(724,906)	258,155	(55,449)	7,182,541
USDA Securities:							
Available-for-sale	—	57,853	(57,853)	—	—	—	—
Trading	9,999	—	—	(1,210)	154	—	8,943
Total USDA Securities	9,999	57,853	(57,853)	(1,210)	154	—	8,943
Total Assets at fair value	\$ 6,003,211	\$ 1,788,097	\$ (57,853)	\$ (726,116)	\$ 258,309	\$ (54,956)	\$ 7,210,692

Level 3 Assets and Liabilities Measured at Fair Value for the Nine Months Ended September 30, 2018

	Beginning Balance	Cumulative Effect from Change in Hedge Accounting	Purchases	Sales	Settlements	Realized and Unrealized (Losses)/ Gains/ included in Income	Unrealized Gains/ (Losses) included in Other Comprehen- sive Income	Ending Balance
<i>(in thousands)</i>								
Recurring:								
Assets:								
Investment Securities:								
Available-for-sale:								
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 18,814	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 147	\$ 18,961
Fixed rate GSE guaranteed mortgage-backed securities	4,333	—	—	—	(2,137)	(2,092)	(104)	—
Total available-for-sale	23,147	—	—	—	(2,137)	(2,092)	43	18,961
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	5,471,914	487	1,646,345	—	(1,128,674)	(43,230)	10,462	5,957,304
Total available-for-sale	5,471,914	487	1,646,345	—	(1,128,674)	(43,230)	10,462	5,957,304
USDA Securities:								
Available-for-sale	—	—	105,628	(105,628)	—	—	—	—
Trading ⁽¹⁾	13,515	—	—	—	(3,302)	24	—	10,237
Total USDA Securities	13,515	—	105,628	(105,628)	(3,302)	24	—	10,237
Total Assets at fair value	\$5,508,576	\$ 487	\$1,751,973	\$(105,628)	\$(1,134,113)	\$ (45,298)	\$ 10,505	\$5,986,502

⁽¹⁾ Includes unrealized gains of \$0.1 million attributable to assets still held as of September 30, 2018 that are recorded in "Gains/(losses) 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 September 30, 2019 and December 31, 2018:

Table 8.3

As of September 30, 2019				
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
<i>(in thousands)</i>				
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 19,208	Indicative bids	Range of broker quotes	97.5% - 97.5% (97.5%)
Farmer Mac Guaranteed Securities:				
AgVantage	\$ 7,182,541	Discounted cash flow	Discount rate	2.2% - 3.8% (2.6%)
USDA Securities	\$ 8,943	Discounted cash flow	Discount rate CPR	2.4% - 3.3% (3.3%) 11% - 21% (20%)
As of December 31, 2018				
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
<i>(in thousands)</i>				
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	\$ 18,715	Indicative bids	Range of broker quotes	95.0% - 95.0% (95.0%)
Farmer Mac Guaranteed Securities:				
AgVantage	\$ 5,974,497	Discounted cash flow	Discount rate	3.0% - 4.4% (3.3%)
USDA Securities	\$ 9,999	Discounted cash flow	Discount rate CPR	3.2% - 5.2% (4.9%) 7% - 17% (16%)

The significant unobservable input used in the fair value measurements of AgVantage Farmer Mac Guaranteed Securities is the discount rate commensurate with the risks involved. Typically, significant increases (decreases) in this input 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. Conversely, in a declining interest rate environment, Farmer Mac would expect average discount rates to decrease. Prepayment rates are not presented in the table above for AgVantage securities because they generally have fixed maturity dates when the secured general obligations are due and don't prepay.

The significant unobservable inputs used in the fair value measurements of USDA Securities are the prepayment rate and discount rate 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.

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 September 30, 2019 and December 31, 2018:

Table 8.4

	As of September 30, 2019		As of December 31, 2018	
	Fair Value	Carrying Amount	Fair Value	Carrying Amount
	<i>(in thousands)</i>			
Financial assets:				
Cash and cash equivalents	\$ 587,941	\$ 587,941	\$ 425,256	\$ 425,256
Investment securities	3,157,163	3,156,664	2,263,446	2,262,884
Farmer Mac Guaranteed Securities	8,651,085	8,635,157	8,061,903	8,071,115
USDA Securities	2,192,017	2,173,007	2,113,946	2,176,173
Loans	6,593,256	6,517,220	5,512,781	5,515,052
Financial derivatives	5,589	5,589	7,487	7,487
Guarantee and commitment fees receivable:				
LTSPCs	32,424	36,173	37,461	36,870
Farmer Mac Guaranteed Securities	2,647	2,963	3,424	3,496
Financial liabilities:				
Notes payable:				
Due within one year	9,886,555	9,885,633	7,744,388	7,757,050
Due after one year	9,086,048	8,940,989	8,473,558	8,486,647
Debt securities of consolidated trusts held by third parties	1,545,314	1,532,401	1,501,754	1,528,957
Financial derivatives	30,542	30,542	19,633	19,633
Guarantee and commitment obligations:				
LTSPCs	31,292	35,041	36,471	35,880
Farmer Mac Guaranteed Securities	2,091	2,408	2,731	2,803

The carrying value of cash and cash equivalents is a reasonable estimate of their approximate fair value and is classified as Level 1. The fair value of investments in U.S. Treasuries are valued based on unadjusted quoted prices in active markets and are classified as Level 1. A significant portion of Farmer Mac's investment portfolio is valued using a reputable nationally recognized third-party pricing service. The prices obtained are non-binding and generally representative of recent market trades and are classified as Level 2. 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. Financial derivatives primarily are valued using unadjusted counterparty valuations and are classified as Level 2. 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. 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. Because the cash flows of Farmer Mac's financial 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 and nine months ended September 30, 2019 and 2018:

Table 9.1

Core Earnings by Business Segment							
For the Three Months Ended September 30, 2019							
	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	<i>(in thousands)</i>						
Net interest income	\$ 15,345	\$ 4,491	\$ 2,602	\$ 14,853	\$ 2,821	\$ —	\$ 40,112
Less: reconciling adjustments ⁽¹⁾⁽²⁾⁽³⁾	(2,164)	(177)	1,900	2,954	(164)	(2,349)	—
Net effective spread	13,181	4,314	4,502	17,807	2,657	(2,349)	—
Guarantee and commitment fees ⁽²⁾	4,523	250	348	87	—	(1,859)	3,349
Other income/(expense) ⁽³⁾	390	92	17	—	(110)	(7,170)	(6,781)
Non-interest income/(loss)	4,913	342	365	87	(110)	(9,029)	(3,432)
Provision for loan losses	(760)	—	—	—	—	—	(760)
Release of reserve for losses	137	—	—	—	—	—	137
Other non-interest expense	(5,062)	(1,506)	(913)	(2,277)	(3,837)	—	(13,595)
Non-interest expense ⁽⁴⁾	(4,925)	(1,506)	(913)	(2,277)	(3,837)	—	(13,458)
Core earnings before income taxes	12,409	3,150	3,954	15,617	(1,290)	(11,378) ⁽⁵⁾	22,462
Income tax (expense)/benefit	(2,606)	(662)	(830)	(3,280)	360	2,389	(4,629)
Core earnings before preferred stock dividends	9,803	2,488	3,124	12,337	(930)	(8,989) ⁽⁵⁾	17,833
Preferred stock dividends	—	—	—	—	(3,427)	—	(3,427)
Segment core earnings/(losses)	\$ 9,803	\$ 2,488	\$ 3,124	\$ 12,337	\$ (4,357)	\$ (8,989) ⁽⁵⁾	\$ 14,406
Total assets at carrying value	\$ 4,934,887	\$ 2,238,558	\$ 1,692,835	\$ 8,651,264	\$ 3,797,690	\$ —	\$ 21,315,234
Total on- and off-balance sheet program assets at principal balance	\$ 7,393,728	\$ 2,567,763	\$ 2,232,602	\$ 8,738,266	\$ —	\$ —	\$ 20,932,359

- (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 "(Losses)/gains on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.
- (4) Includes directly attributable costs and an allocation of indirectly attributable costs based on employee headcount.
- (5) 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 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 September 30, 2018

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	<i>(in thousands)</i>						
Net interest income	\$ 16,425	\$ 5,304	\$ 3,081	\$ 17,600	\$ 2,648	\$ —	\$ 45,058
Less: reconciling adjustments ⁽¹⁾⁽²⁾⁽³⁾	(2,538)	(677)	(204)	(1,958)	(604)	5,981	—
Net effective spread	13,887	4,627	2,877	15,642	2,044	5,981	—
Guarantee and commitment fees ⁽²⁾	4,489	214	376	91	—	(1,680)	3,490
Other income/(expense) ⁽³⁾	294	5	15	—	(245)	880	949
Non-interest income/(loss)	4,783	219	391	91	(245)	(800)	4,439
Provision for loan losses	(99)	—	—	—	—	—	(99)
Release of reserve for losses	102	—	—	—	—	—	102
Other non-interest expense	(4,456)	(1,288)	(732)	(1,844)	(3,432)	—	(11,752)
Non-interest expense ⁽⁴⁾	(4,354)	(1,288)	(732)	(1,844)	(3,432)	—	(11,650)
Core earnings before income taxes	14,217	3,558	2,536	13,889	(1,633)	5,181 ⁽⁵⁾	37,748
Income tax (expense)/benefit	(2,986)	(747)	(533)	(2,917)	292	(1,088)	(7,979)
Core earnings before preferred stock dividends	11,231	2,811	2,003	10,972	(1,341)	4,093 ⁽⁵⁾	29,769
Preferred stock dividends	—	—	—	—	(3,295)	—	(3,295)
Segment core earnings/(losses)	<u>\$ 11,231</u>	<u>\$ 2,811</u>	<u>\$ 2,003</u>	<u>\$ 10,972</u>	<u>\$ (4,636)</u>	<u>\$ 4,093⁽⁵⁾</u>	<u>\$ 26,474</u>

Total assets at carrying value	\$ 4,438,128	\$ 2,212,515	\$ 956,204	\$ 8,103,181	\$ 2,764,006	\$ —	\$ 18,474,034
Total on- and off-balance sheet program assets at principal balance	\$ 7,072,018	\$ 2,471,251	\$ 1,632,037	\$ 8,365,280	\$ —	\$ —	\$ 19,540,586

- ⁽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 "(Losses)/gains on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.
- ⁽⁴⁾ Includes directly attributable costs and an allocation of indirectly attributable costs based on employee headcount.
- ⁽⁵⁾ 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 reconciled to net income; and segment core earnings reconciled to net income attributable to common stockholders.

Core Earnings by Business Segment
For the Nine Months Ended September 30, 2019

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	<i>(in thousands)</i>						
Net interest income	\$ 46,424	\$ 13,045	\$ 6,264	\$ 49,425	\$ 8,607	\$ —	\$ 123,765
Less: reconciling adjustments ⁽¹⁾⁽²⁾⁽³⁾	(7,171)	(670)	5,467	2,126	(900)	1,148	—
Net effective spread	39,253	12,375	11,731	51,551	7,707	1,148	—
Guarantee and commitment fees ⁽²⁾	13,861	712	1,069	261	—	(5,638)	10,265
Other income/(expense) ⁽³⁾	1,058	92	31	—	494	1,050	2,725
Non-interest income/(loss)	14,919	804	1,100	261	494	(4,588)	12,990
Provision for loan losses	(1,074)	—	—	—	—	—	(1,074)
Release of reserve for losses	424	—	—	—	—	—	424
Other non-interest expense	(14,448)	(4,279)	(2,595)	(6,470)	(10,903)	—	(38,695)
Non-interest expense ⁽⁴⁾	(14,024)	(4,279)	(2,595)	(6,470)	(10,903)	—	(38,271)
Core earnings before income taxes	39,074	8,900	10,236	45,342	(2,702)	(3,440) ⁽⁵⁾	97,410
Income tax (expense)/benefit	(8,206)	(1,870)	(2,149)	(9,522)	663	722	(20,362)
Core earnings before preferred stock dividends	30,868	7,030	8,087	35,820	(2,039)	(2,718) ⁽⁵⁾	77,048
Preferred stock dividends	—	—	—	—	(10,508)	—	(10,508)
Loss on retirement of preferred stock	—	—	—	—	—	(1,956)	(1,956)
Segment core earnings/(losses)	<u>\$ 30,868</u>	<u>\$ 7,030</u>	<u>\$ 8,087</u>	<u>\$ 35,820</u>	<u>\$ (12,547)</u>	<u>\$ (4,674) ⁽⁵⁾</u>	<u>\$ 64,584</u>
Total assets at carrying value	\$ 4,934,887	\$ 2,238,558	\$ 1,692,835	\$ 8,651,264	\$ 3,797,690	\$ —	\$ 21,315,234
Total on- and off-balance sheet program assets at principal balance	\$ 7,393,728	\$ 2,567,763	\$ 2,232,602	\$ 8,738,266	\$ —	\$ —	\$ 20,932,359

- ⁽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 "(Losses)/gains on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.
- ⁽⁴⁾ Includes directly attributable costs and an allocation of indirectly attributable costs based on employee headcount.
- ⁽⁵⁾ 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 reconciled to net income; and segment core earnings reconciled to net income attributable to common stockholders.

Core Earnings by Business Segment
For the Nine Months Ended September 30, 2018

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
	<i>(in thousands)</i>						
Net interest income	\$ 47,255	\$ 15,446	\$ 8,931	\$ 54,237	\$ 6,351	\$ —	\$ 132,220
Less: reconciling adjustments ⁽¹⁾⁽²⁾⁽³⁾	(7,481)	(2,021)	(181)	(8,551)	(1,646)	19,880	—
Net effective spread	39,774	13,425	8,750	45,686	4,705	19,880	—
Guarantee and commitment fees ⁽²⁾	13,356	570	1,227	271	—	(4,954)	10,470
Other income/(expense) ⁽³⁾	1,193	18	25	—	(594)	(54)	588
Non-interest income/(loss)	14,549	588	1,252	271	(594)	(5,008)	11,058
Provision for loan losses	(92)	—	—	—	—	—	(92)
Provision for reserve for losses	(77)	—	—	—	—	—	(77)
Other non-interest expense	(13,930)	(3,793)	(2,144)	(5,720)	(10,549)	—	(36,136)
Non-interest expense ⁽⁴⁾	(14,007)	(3,793)	(2,144)	(5,720)	(10,549)	—	(36,213)
Core earnings before income taxes	40,224	10,220	7,858	40,237	(6,438)	14,872 ⁽⁵⁾	106,973
Income tax (expense)/benefit	(8,447)	(2,146)	(1,651)	(8,450)	2,067	(3,122)	(21,749)
Core earnings before preferred stock dividends	31,777	8,074	6,207	31,787	(4,371)	11,750 ⁽⁵⁾	85,224
Preferred stock dividends	—	—	—	—	(9,886)	—	(9,886)
Segment core earnings/(losses)	<u>\$ 31,777</u>	<u>\$ 8,074</u>	<u>\$ 6,207</u>	<u>\$ 31,787</u>	<u>\$ (14,257)</u>	<u>\$ 11,750 ⁽⁵⁾</u>	<u>\$ 75,338</u>
Total assets at carrying value	\$ 4,438,128	\$ 2,212,515	\$ 956,204	\$ 8,103,181	\$ 2,764,006	\$ —	\$ 18,474,034
Total on- and off-balance sheet program assets at principal balance	\$ 7,072,018	\$ 2,471,251	\$ 1,632,037	\$ 8,365,280	\$ —	\$ —	\$ 19,540,586

- (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 "(Losses)/gains on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.
- (4) Includes directly attributable costs and an allocation of indirectly attributable costs based on employee headcount.
- (5) 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 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 two subsidiaries – Farmer Mac Mortgage Securities Corporation and Farmer Mac II LLC. 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, 2018 filed with the SEC on February 21, 2019.

FORWARD-LOOKING STATEMENTS

In this report, the words "Farmer Mac," "we," "our," and "us" refer to the Federal Agricultural Mortgage Corporation unless otherwise stated or unless the context otherwise requires.

Some statements made in this report, such as in the "Management's Discussion & Analysis of Financial Condition and Results of Operations" section, are "forward-looking statements" under the Private Securities Litigation Reform Act of 1995 about management's current expectations for 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 include terms such as "anticipates," "believes," "expects," "intends," "plans," "potential," "may," "could," "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 assumptions, 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, 2018 filed with the SEC on February 21, 2019, and uncertainties about:

- 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 and geopolitics, including fluctuations in interest rates, changes in U.S. trade policies, and fluctuations in export demand for U.S. agricultural products, on agricultural mortgage lending and on borrower repayment capacity;
- 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;
- developments in the financial markets, including possible investor, analyst, and rating agency reactions to events involving government-sponsored enterprises, including Farmer Mac;
- the effect of any changes in Farmer Mac's executive leadership; and
- other factors that could have a negative effect on agricultural mortgage lending or borrower repayment capacity, including volatility in commodity prices, the effects of flooding and other weather-related conditions and fluctuations in agricultural real estate values.

Considering these potential risks and uncertainties, no undue reliance should be placed on any forward-looking statements expressed in this report. Farmer Mac undertakes no obligation to release publicly the results of revisions to any forward-looking statements to reflect new information or any future events or circumstances, except as otherwise required by applicable law or regulation. The information in this report is not necessarily indicative of future results.

Overview

The discussion below of Farmer Mac's financial information includes "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

Our net income attributable to common stockholders for third quarter 2019 was \$14.4 million, compared to \$28.3 million in second quarter 2019 and \$26.5 million in third quarter 2018.

The \$13.9 million sequential decrease in net income attributable to common stockholders was primarily due to a \$12.9 million after-tax decrease in the fair value of undesignated financial derivatives due to fluctuations in long-term interest rates, a \$2.3 million after-tax decrease in net interest income, and an increase in operating expenses of \$1.1 million after tax. These sequential factors were offset in part by the absence of the second quarter recognition of \$2.0 million in deferred issuance costs for Series B Preferred Stock and a \$0.4 million decrease in preferred stock dividends.

The \$12.1 million year-over-year decrease in net income attributable to common stockholders was primarily due to a \$6.3 million after-tax decrease in the fair value of undesignated financial derivatives due to fluctuations in long-term interest rates, a \$3.9 million after-tax decrease in net interest income, a \$1.4 million after-tax increase in operating expenses, and a \$0.5 million after-tax provision for total loan losses.

Our non-GAAP core earnings for third quarter 2019 were \$23.4 million, compared to \$23.6 million in second quarter 2019 and \$22.4 million in third quarter 2018.

The \$0.2 million sequential decrease in core earnings was primarily due to a \$1.1 million after-tax increase in operating expenses, which was largely driven by costs associated with the departure of our former CFO. The increase in operating expenses was partially offset by a \$0.9 million after-tax increase in net effective spread.

The \$1.0 million year-over-year increase in core earnings was primarily due to a \$2.7 million after-tax increase in net effective spread that was partially offset by a \$1.5 million after-tax increase in operating expenses.

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 \$40.1 million for third quarter 2019, compared to \$43.1 million for second quarter 2019 and \$45.1 million for third quarter 2018. The overall net interest yield was 0.78% for third quarter 2019, compared to 0.87% for second quarter 2019 and 0.99% for third quarter 2018.

The \$3.0 million sequential decrease in net interest income was primarily due to a \$3.1 million decrease in net fair value changes from fair value hedge accounting relationships and a \$0.9 million decrease in cash basis interest income. The 9 basis point sequential decrease was primarily attributable to a 6 basis point decrease in net fair value changes from fair value hedge accounting relationships and a 2 basis point decrease from decreased cash basis interest income.

The \$5.0 million year-over-year decrease in net interest income was primarily due to a \$5.5 million decrease in net fair value changes from fair value hedge accounting relationships and a \$2.2 million increase in funding and liquidity costs. These factors were partially offset by a \$3.3 million increase in interest income generated from new business volume. The 21 basis point year-over-year decrease was primarily attributable to a 11 basis point decrease in net fair value changes from fair value hedge accounting relationships and a 9 basis point increase in funding and liquidity costs.

Net effective spread, a non-GAAP measure, was \$42.5 million in third quarter 2019, compared to \$41.4 million in second quarter 2019 and \$39.1 million in third quarter 2018. In percentage terms, net effective spread was 0.90% in third quarter 2019, compared to 0.91% in second quarter 2019 and 0.93% in third quarter 2018. Farmer Mac uses net effective spread as an alternative measure to net interest income because management believes it is a useful metric that 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 included in net interest income.

The \$1.1 million sequential increase in net effective spread in dollars was primarily due to a \$0.8 million increase in interest income generated from new business volume, a \$1.0 million increase in income from our investment portfolio, and \$0.2 million of interest accrual related to one additional day of interest in the current quarter. These factors were partially offset by a \$0.9 million decrease in cash basis interest income. In percentage terms, net effective spread decreased by 1 basis point primarily due to a 2 basis point decrease related to an increase in our investment portfolio to provide liquidity to support program asset growth, offset by a 1 basis point increase due to new business volume.

The \$3.4 million year-over-year increase in net effective spread in dollars was primarily due to a \$3.8 million increase in net effective spread from new business volume. Net effective spread in percentage terms decreased by 3 basis points year-over-year primarily due to a 3 basis point decrease in cash basis interest income.

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

Our outstanding business volume was \$20.9 billion as of September 30, 2019, a net increase of \$185.6 million from June 30, 2019, after taking into account all new business, maturities, and paydowns on existing assets. This net increase was across three lines of business: \$102.4 million in Farm & Ranch, \$76.9 million in Rural Utilities, and \$46.4 million in USDA Guarantees. These net increases were partially offset by a net decrease of \$40.1 million in the Institutional Credit line of business. Farmer Mac's outstanding business volume of \$20.9 billion as of September 30, 2019 is a \$1.2 billion increase from \$19.7 billion as of December 31, 2018.

For more information about Farmer Mac's business volume, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Business Volume."

Capital

As of September 30, 2019, our core capital level was \$793.3 million, which was \$184.9 million above the minimum capital level required by our statutory charter. As of December 31, 2018, our core capital level was \$727.6 million, which was \$182.6 million above the minimum capital requirement. The increase in capital above the minimum capital level was due to the Board-authorized issuance of the Series D Preferred Stock in May 2019 and the increase in retained earnings partially offset by growth in our outstanding business volume and the redemption of the Series B Preferred Stock in June 2019.

Credit Quality

As of September 30, 2019, Farmer Mac's allowance for losses was \$9.8 million (0.13% of the Farm & Ranch portfolio), compared to \$9.1 million (0.13% of the Farm & Ranch portfolio) as of June 30, 2019 and \$9.2 million (0.13% of the Farm & Ranch portfolio) as of December 31, 2018. The \$0.6 million increase in the total allowance for losses from second quarter 2019 was primarily due to a decrease in credit quality, primarily related to idiosyncratic factors of a few large loans and less related to systemic, macroeconomic factors. Idiosyncratic factors include death, divorce, or health issues experienced by a borrower or the borrower's family, or economic conditions unique to a single entity.

As of September 30, 2019, Farmer Mac's substandard assets were \$290.5 million (3.9% of the Farm & Ranch portfolio), compared to \$242.7 million (3.3% of the Farm & Ranch portfolio) as of June 30, 2019 and \$232.7 million (3.2% of the Farm & Ranch portfolio) as of December 31, 2018. The \$57.8 million increase in substandard assets in the first nine months of 2019 was due to the downgrade of more assets into the substandard category than those that paid off or migrated to a more favorable category, largely related to certain large loans migrating into the substandard category.

As of September 30, 2019, Farmer Mac's 90-day delinquencies were \$59.7 million (0.81% of the Farm & Ranch portfolio), compared to \$28.0 million (0.38% of the Farm & Ranch portfolio) as of June 30, 2019 and \$26.9 million (0.37% of the Farm & Ranch portfolio) as of December 31, 2018. Across all of Farmer Mac's lines of business, 90-day delinquencies represented 0.29% of total outstanding business volume as of September 30, 2019, compared to 0.14% as of both June 30, 2019 and December 31, 2018. The sequential increase in 90-day delinquencies 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 and

lower levels generally observed at the end of the second and fourth quarters of each year. As of September 30, 2019, 90-day delinquencies remained below our historical average.

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.

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 we believe 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 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; (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"; and (3) the fair value changes of financial derivatives and the corresponding assets or liabilities designated in a fair value hedge accounting relationship.

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 in determining Farmer Mac's core earnings. Farmer Mac also excludes from net effective spread the fair value changes of financial derivatives and the corresponding assets or liabilities designated in fair value hedge relationships because they are not expected to have an economic effect on Farmer Mac's financial performance, as we expect to hold the financial derivatives and corresponding hedged items to maturity.

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 "(Losses)/gains on financial derivatives" 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.

Net effective spread also differs from net interest income and net interest yield because it includes the net effects of terminations or net settlements on financial derivatives, which consist of: (1) the net effects of cash settlements on agency forward contracts on the debt of other GSEs and U.S. Treasury security futures that we use as short-term economic hedges on the issuance of debt; and (2) the net effects of initial cash payments that Farmer Mac receives upon the inception of certain swaps. The inclusion of these items in net effective spread is intended to reflect our view of the complete net spread between an asset and all of its related funding, including any associated derivatives, whether or not they are designated 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 the three months ended September 30, 2019 was \$14.4 million (\$1.33 per diluted common share), compared to \$26.5 million (\$2.46 per diluted common share) for the same period in 2018. For the nine months ended September 30, 2019, Farmer Mac's net income attributable to common stockholders was \$64.6 million (\$5.99 per diluted common share), compared to \$75.3 million (\$7.01 per diluted common share) for the same period in 2018. Farmer Mac's non-GAAP core earnings for the three months ended September 30, 2019 were \$23.4 million (\$2.17 per diluted common share), compared to \$22.4 million (\$2.08 per diluted common share) for the same period in 2018. Farmer Mac's non-GAAP core earnings for the nine months ended September 30, 2019 were \$69.3 million (\$6.43 per diluted common share), compared to \$63.6 million (\$5.92 per diluted common share) for the same period in 2018. 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."

Reconciliations 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 information about the composition of core earnings:

Table 1

Reconciliation of Net Income Attributable to Common Stockholders to Core Earnings

	For the Three Months Ended	
	September 30, 2019	September 30, 2018
	<i>(in thousands, except per share amounts)</i>	
Net income attributable to common stockholders	\$ 14,406	\$ 26,474
Less reconciling items:		
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 8)	(7,117)	3,625
(Losses)/gains on hedging activities due to fair value changes	(4,535)	1,051
Unrealized gains/(losses) on trading securities	49	(3)
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(7)	(38)
Net effects of terminations or net settlements on financial derivatives	232	546
Income tax effect related to reconciling items	2,389	(1,088)
Sub-total	(8,989)	4,093
Core earnings	<u>\$ 23,395</u>	<u>\$ 22,381</u>
Composition of Core Earnings:		
Revenues:		
Net effective spread ⁽¹⁾	\$ 42,461	\$ 39,077
Guarantee and commitment fees ⁽²⁾	5,208	5,170
Other ⁽³⁾	389	110
Total revenues	<u>48,058</u>	<u>44,357</u>
Credit related expense (GAAP):		
Provision for/(release of) losses	623	(3)
Losses on sale of REO	—	41
Total credit related expense	<u>623</u>	<u>38</u>
Operating expenses (GAAP):		
Compensation and employee benefits	7,654	6,777
General and administrative	5,253	4,350
Regulatory fees	688	625
Total operating expenses	<u>13,595</u>	<u>11,752</u>
Net earnings	33,840	32,567
Income tax expense ⁽⁴⁾	7,018	6,891
Preferred stock dividends (GAAP)	3,427	3,295
Core earnings	<u>\$ 23,395</u>	<u>\$ 22,381</u>
Core earnings per share:		
Basic	\$ 2.19	\$ 2.10
Diluted	2.17	2.08
Weighted-average shares:		
Basic	10,706	10,668
Diluted	10,776	10,744

⁽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.
- (3) Reflects reconciling adjustments for the reclassification to exclude expenses related to interest rate swaps not designated as hedges and terminations or net settlements on financial derivatives, and reconciling adjustments to exclude fair value adjustments on financial derivatives and trading assets and the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities.
- (4) Includes the tax impact of non-GAAP reconciling items between net income attributable to common stockholders and core earnings.

Reconciliation of Net Income Attributable to Common Stockholders to Core Earnings

	For the Nine Months Ended	
	September 30, 2019	September 30, 2018
	<i>(in thousands, except per share amounts)</i>	
Net income attributable to common stockholders	\$ 64,584	\$ 75,338
Less reconciling items:		
Gains on undesignated financial derivatives due to fair value changes (see Table 8)	5,608	8,055
(Losses)/gains on hedging activities due to fair value changes	(8,790)	5,302
Unrealized gains on trading securities	154	24
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(162)	(528)
Net effects of terminations or net settlements on financial derivatives	(250)	2,020
Issuance costs on the retirement of preferred stock	(1,956)	—
Income tax effect related to reconciling items	722	(3,123)
Sub-total	(4,674)	11,750
Core earnings	<u>\$ 69,258</u>	<u>\$ 63,588</u>
Composition of Core Earnings:		
Revenues:		
Net effective spread ⁽¹⁾	\$ 122,617	\$ 112,340
Guarantee and commitment fees ⁽²⁾	15,903	15,424
Other ⁽³⁾	1,675	649
Total revenues	140,195	128,413
Credit related expense (GAAP):		
Provision for losses	650	169
REO operating expenses	64	16
Losses on sale of REO	—	7
Total credit related expense	714	192
Operating expenses (GAAP):		
Compensation and employee benefits	22,030	20,367
General and administrative	14,538	13,878
Regulatory fees	2,063	1,875
Total operating expenses	38,631	36,120
Net earnings	100,850	92,101
Income tax expense ⁽⁴⁾	21,084	18,627
Preferred stock dividends (GAAP)	10,508	9,886
Core earnings	<u>\$ 69,258</u>	<u>\$ 63,588</u>
Core earnings per share:		
Basic	\$ 6.48	\$ 5.97
Diluted	6.43	5.92
Weighted-average shares:		
Basic	10,691	10,650
Diluted	10,774	10,743

⁽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.
- (3) Reflects reconciling adjustments for the reclassification to exclude expenses related to interest rate swaps not designated as hedges and terminations or net settlements on financial derivatives, and reconciling adjustments to exclude fair value adjustments on financial derivatives and trading assets and the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities.
- (4) Includes the tax impact of non-GAAP reconciling items between net income attributable to common stockholders and core earnings.

Table 2

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

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands, except per share amounts)</i>			
GAAP - Basic EPS	\$ 1.34	\$ 2.48	\$ 6.04	\$ 7.07
Less reconciling items:				
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 8)	(0.66)	0.34	0.52	0.76
(Losses)/gains on hedging activities due to fair value changes	(0.42)	0.10	(0.82)	0.50
Unrealized gains on trading securities	—	—	0.01	—
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	—	—	(0.02)	(0.05)
Net effects of terminations or net settlements on financial derivatives	0.02	0.05	(0.02)	0.19
Issuance costs on the retirement of preferred stock	—	—	(0.18)	—
Income tax effect related to reconciling items	0.21	(0.11)	0.07	(0.30)
Sub-total	(0.85)	0.38	(0.44)	1.10
Core Earnings - Basic EPS	\$ 2.19	\$ 2.10	\$ 6.48	\$ 5.97
Shares used in per share calculation (GAAP and Core Earnings)	10,706	10,668	10,691	10,650

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

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands, except per share amounts)</i>			
GAAP - Diluted EPS	\$ 1.33	\$ 2.46	\$ 5.99	\$ 7.01
Less reconciling items:				
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 8)	(0.66)	0.33	0.52	0.75
(Losses)/gains on hedging activities due to fair value changes	(0.42)	0.10	(0.82)	0.49
Unrealized gains on trading securities	—	—	0.01	—
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	—	—	(0.02)	(0.05)
Net effects of terminations or net settlements on financial derivatives	0.02	0.05	(0.02)	0.19
Issuance costs on the retirement of preferred stock	—	—	(0.18)	—
Income tax effect related to reconciling items	0.22	(0.10)	0.07	(0.29)
Sub-total	(0.84)	0.38	(0.44)	1.09
Core Earnings - Diluted EPS	\$ 2.17	\$ 2.08	\$ 6.43	\$ 5.92
Shares used in per share calculation (GAAP and Core Earnings)	10,776	10,744	10,774	10,743

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

1. (Losses)/gains on financial derivatives due to fair value changes are presented by two reconciling items in Table 1 above: (1) Gains/(losses) on undesignated financial derivatives due to fair value changes; and (2) (Losses)/gains on hedging activities due to fair value changes. The table below calculates the non-GAAP reconciling item for (losses)/gains on hedging activities due to fair value changes:

Table 3

Non-GAAP Reconciling Items for (Losses)/Gains on Hedging Activities due to Fair Value Changes				
	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands)</i>			
(Losses)/gains due to fair value changes (see Table 4.2)	\$ (4,490)	\$ 1,051	\$ (8,617)	\$ 5,751
Initial cash payment received at inception of swap	(45)	—	(173)	(449)
(Losses)/gains on hedging activities due to fair value changes	\$ (4,535)	\$ 1,051	\$ (8,790)	\$ 5,302

2. Unrealized gains 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 effects of terminations or net settlements on financial derivatives. These terminations or net settlements relate to:

- Forward contracts on the debt of other GSEs and futures contracts on U.S. Treasury securities. These contracts are used as a short-term economic hedge of the issuance of debt. For GAAP purposes, realized gains or losses on settlements of these contracts are reported in the consolidated statements of operations in the period in which they occur. For core earnings purposes, these realized gains or losses are deferred and amortized as net yield adjustments over the term of the related debt, which generally ranges from 3 to 15 years.
- Initial cash payments received by Farmer Mac upon the inception of certain swaps. When there is no direct payment arrangement between a swap dealer counterparty and a debt dealer issuing Farmer Mac's medium-term notes for a particular transaction, Farmer Mac may receive an initial cash payment from the swap dealer at the inception of the swap to offset dollar-for-dollar the amount of the discount on the associated hedged debt. For GAAP purposes, changes in fair value of the swaps are recognized in "Gains on financial derivatives," while the economically offsetting discount on the associated hedged debt is amortized over the term of the debt as an adjustment to its yield. For core earnings purposes, these initial cash payments are deferred and amortized as net yield adjustments over the term of the related debt, which generally ranges from 3 to 15 years.

5. The recognition of deferred issuance costs on the retirement of the Series B Preferred Stock in second quarter 2019 has been excluded from core earnings because it is not a frequently occurring transaction, nor

is it indicative of future operating results. This is consistent with Farmer Mac's previous treatment of deferred issuance costs associated with the retirement of preferred stock.

The following sections provide more detail about specific components of Farmer Mac's results of operations.

Net Interest Income. The following table provides information about interest-earning assets and funding for the nine months ended September 30, 2019 and 2018. 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 Nine Months Ended					
	September 30, 2019			September 30, 2018		
	Average Balance	Income/Expense	Average Rate	Average Balance	Income/Expense	Average Rate
	<i>(dollars in thousands)</i>					
Interest-earning assets:						
Cash and investments	\$ 3,118,378	\$ 61,718	2.64%	\$ 2,750,402	\$ 38,681	1.88%
Loans, Farmer Mac Guaranteed Securities and USDA Securities ⁽¹⁾	15,019,083	374,767	3.33%	13,889,468	319,040	3.06%
Total interest-earning assets	18,137,461	436,485	3.21%	16,639,870	357,721	2.87%
Funding:						
Notes payable due within one year	3,785,429	67,930	2.39%	3,521,125	44,990	1.70%
Notes payable due after one year ⁽²⁾	13,760,960	250,428	2.43%	12,399,858	185,464	1.99%
Total interest-bearing liabilities ⁽³⁾	17,546,389	318,358	2.42%	15,920,983	230,454	1.93%
Net non-interest-bearing funding	591,072	—		718,887	—	
Total funding	18,137,461	318,358	2.34%	16,639,870	230,454	1.85%
Net interest income/yield prior to consolidation of certain trusts	18,137,461	118,127	0.87%	16,639,870	127,267	1.02%
Net effect of consolidated trusts ⁽⁴⁾	1,546,443	5,638	0.49%	1,427,560	4,953	0.46%
Net interest income/yield	\$ 19,683,904	\$ 123,765	0.84%	\$ 18,067,430	\$ 132,220	0.98%

⁽¹⁾ Excludes interest income of \$45.7 million and \$40.1 million in the first nine months of 2019 and 2018, 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 \$40.0 million and \$35.2 million in the first nine months of 2019 and 2018, 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.

For the first nine months of 2019 compared to the same period in 2018, the \$8.5 million decrease in net interest income was primarily due to a \$14.4 million decrease in net fair value changes from fair value hedge accounting relationships and a \$4.7 million increase in funding and liquidity costs. These factors were partially offset by a \$8.0 million increase in interest income generated from new business volume and the absence of a \$2.0 million premium amortization that occurred in the prior period related to the payoff of an interest-only security. The 14 basis point year-over-year decrease was primarily attributable to a 10 basis point decrease in net fair value changes from fair value hedge accounting relationships and a 6 basis point increase in funding and liquidity costs.

The following table sets forth information about 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 Nine Months Ended September 30, 2019 Compared to Same Period in 2018		
	Increase/(Decrease) Due to		
	Rate	Volume	Total
	<i>(in thousands)</i>		
Income from interest-earning assets:			
Cash and investments	\$ 17,341	\$ 5,696	\$ 23,037
Loans, Farmer Mac Guaranteed Securities and USDA Securities	28,693	27,034	55,727
Total	46,034	32,730	78,764
Expense from other interest-bearing liabilities			
Change in net interest income prior to consolidation of certain trusts ⁽¹⁾	\$ (16,630)	\$ 7,490	\$ (9,140)

⁽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 interest yield to net effective spread. Net effective spread is measured by: including (1) expenses related to undesignated financial derivatives, which consists of income or expense related to contractual amounts due on financial derivatives not designated in hedge relationships (the income or expense related to financial derivatives designated in hedge relationships is already included in net interest income), and (2) the amortization of losses due to terminations or net settlements of financial derivatives; and excluding (3) the amortization of premiums and discounts on assets consolidated at fair value, (4) the net effects of consolidated trusts with beneficial interests owned by third parties, and (5) the fair value changes of financial derivatives and corresponding financial assets or liabilities in fair value hedge relationships. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures—Net Effective Spread" for more information about the explanation of net effective spread.

Table 6

	For the Three Months Ended				For the Nine Months Ended			
	September 30, 2019		September 30, 2018		September 30, 2019		September 30, 2018	
	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield
	<i>(dollars in thousands)</i>							
Net interest income/yield	\$ 40,112	0.78%	\$ 45,058	0.99 %	\$ 123,765	0.84 %	\$ 132,220	0.98 %
Net effects of consolidated trusts	(1,859)	0.02%	(1,681)	0.05 %	(5,638)	0.03 %	(4,953)	0.04 %
Expense related to undesignated financial derivatives	(268)	—%	(3,223)	(0.08)%	(4,370)	(0.03)%	(9,523)	(0.08)%
Amortization of premiums/discounts on assets consolidated at fair value	28	—%	49	— %	341	— %	555	0.01 %
Amortization of losses due to terminations or net settlements on financial derivatives	(42)	—%	(75)	— %	(98)	— %	(207)	— %
Fair value changes on fair value hedge relationships	4,490	0.10%	(1,051)	(0.03)%	8,617	0.06 %	(5,752)	(0.05)%
Net effective spread	<u>\$ 42,461</u>	<u>0.90%</u>	<u>\$ 39,077</u>	<u>0.93 %</u>	<u>\$ 122,617</u>	<u>0.90 %</u>	<u>\$ 112,340</u>	<u>0.90 %</u>

For the three months ended September 30, 2019 compared to the same period in 2018, the \$3.4 million increase in net effective spread in dollars was primarily due to a \$3.8 million increase in net effective spread from new business volume. Net effective spread in percentage terms decreased by 3 basis points primarily due to a 3 basis point decrease in cash basis interest income.

For the first nine months of 2019 compared to the same period in 2018, the \$10.3 million increase in net effective spread in dollars was primarily due to a \$9.4 million increase in net effective spread from new business volume and the absence of a \$2.0 million premium amortization that occurred in the prior period related to the payoff of an interest-only security. In percentage terms, net effective spread remained the same.

See Note 9 to the consolidated financial statements for more information about net interest income and net effective spread from Farmer Mac's individual business segments. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—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 and nine months ended September 30, 2019 and 2018:

Table 7

	As of September 30, 2019			As of September 30, 2018		
	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Loan Losses	Reserve for Losses	Total Allowance for Losses
<i>(in thousands)</i>						
For the Three Months Ended:						
Beginning Balance	\$ 7,264	\$ 1,880	\$ 9,144	\$ 6,789	\$ 2,249	\$ 9,038
Provision for/(release of) losses	760	(137)	623	99	(102)	(3)
Charge-offs	—	—	—	(17)	—	(17)
Ending Balance	<u>\$ 8,024</u>	<u>\$ 1,743</u>	<u>\$ 9,767</u>	<u>\$ 6,871</u>	<u>\$ 2,147</u>	<u>\$ 9,018</u>
For the Nine Months Ended:						
Beginning Balance	\$ 7,017	\$ 2,167	\$ 9,184	\$ 6,796	\$ 2,070	\$ 8,866
Provision for/(release of) losses	1,074	(424)	650	92	77	169
Charge-offs	(67)	—	(67)	(17)	—	(17)
Ending Balance	<u>\$ 8,024</u>	<u>\$ 1,743</u>	<u>\$ 9,767</u>	<u>\$ 6,871</u>	<u>\$ 2,147</u>	<u>\$ 9,018</u>

The provision for the allowance for loan losses recorded during the three months ended September 30, 2019 was attributable to a decrease in the portfolio credit quality of loan purchases, primarily related to idiosyncratic factors of a few large loans and less related to systemic, macroeconomic factors. The provision for the allowance for loan losses during the nine months ended September 30, 2019 of \$1.1 million was because of the decrease in credit quality experienced in the first nine months of 2019. The release from the reserve for losses recorded during the three and nine months ended September 30, 2019 was primarily attributable to a net volume decrease in off-balance sheet Farm & Ranch LTSPCs.

As of September 30, 2019, Farmer Mac individually evaluated \$55.3 million of the \$221.4 million of recorded investment in impaired assets for collateral shortfalls against updated appraised values, other updated collateral valuations, or discounted values. For the remaining \$166.1 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 \$4.8 million for undercollateralized assets as of September 30, 2019. Farmer Mac's general allowance was \$5.0 million as of September 30, 2019.

The provision for the allowance for loan losses recorded during the three and nine months ended September 30, 2018 was attributable to an increase in the balance of on-balance sheet Farm & Ranch loans, which was partially offset by a modest improvement in overall portfolio credit quality. The release of the reserve for losses recorded during the three months ended September 30, 2018 was attributable to a decrease in the balance of loans underlying LTSPCs. The provision for the reserve for losses recorded during the nine months ended September 30, 2018 was primarily attributable to an increase in the balance of loans underlying LTSPCs.

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 \$3.3 million and \$10.3 million for the three and nine months ended September 30, 2019, compared to \$3.5 million and \$10.5 million for the same periods in 2018, respectively.

In Farmer Mac's presentation of core earnings, guarantee and commitment fees include interest income and interest expense related to consolidated trusts owned by third parties 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. As adjusted for the core earnings presentation, guarantee and commitment fees were \$5.2 million and \$15.9 million for the three and nine months ended September 30, 2019, compared to \$5.2 million and \$15.4 million for the same periods in 2018, respectively.

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."

(Losses)/gains on financial derivatives. The components of gains and losses on financial derivatives for the three and nine months ended September 30, 2019 and 2018 are summarized in the following table:

Table 8

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands)</i>			
(Losses)/gains on financial derivatives:				
(Losses)/gains due to fair value changes	\$ (7,117)	\$ 3,624	\$ 5,608	\$ 8,055
Accrual of contractual payments	(268)	(3,224)	(4,370)	(9,524)
Gains/(losses) due to terminations or net settlements	25	228	(45)	781
(Losses)/gains on financial derivatives	<u>\$ (7,360)</u>	<u>\$ 628</u>	<u>\$ 1,193</u>	<u>\$ (688)</u>

These changes in fair value are primarily the result of fluctuations in long-term interest rates. 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 security futures that are not designated in hedge accounting relationships and initial cash payments received upon the inception of certain swaps not designated in hedge accounting relationships are included in "Gains/(losses) due to terminations or net settlements" in the table above. For swaps not designated in a hedge accounting relationship, when there is no direct payment arrangement between a swap dealer counterparty and a debt dealer issuing Farmer Mac's medium-term notes for a particular transaction, Farmer Mac may receive an initial cash payment from the swap dealer at the inception of the swap to offset dollar-for-dollar the amount of the discount on the associated hedged debt. Changes in the fair value of these swaps are recognized immediately in "(Losses)/gains on financial derivatives," while the offsetting discount on the hedged debt is amortized over the term of the debt as an adjustment to its yield. The amounts of initial cash payments received by

Farmer Mac vary depending on the number of the aforementioned type of swaps it executes during a quarter.

Other Income. Other income totaled \$0.5 million and \$1.4 million for the three and nine months ended September 30, 2019, respectively, compared to \$0.4 million and \$1.3 million for the same periods in 2018, respectively. Other income includes late fees of \$0.4 million and \$0.9 million on Farm & Ranch loans, for the three and nine months ended September 30, 2019, compared to \$0.3 million and \$1.1 million for the same periods in 2018, respectively.

Compensation and Employee Benefits. Compensation and employee benefits were \$7.7 million and \$22.0 million for the three and nine months ended September 30, 2019, respectively, compared to \$6.8 million and \$20.4 million for the same periods in 2018, respectively. The increase in compensation and employee benefits in the nine months ended September 30, 2019 compared to the same period in 2018 was primarily due to an overall increase in headcount and related employee health insurance costs.

General and Administrative Expenses. General and administrative ("G&A") expenses were \$5.3 million and \$14.5 million for the three and nine months ended September 30, 2019, respectively, compared to \$4.4 million and \$13.9 million for the same periods in 2018, respectively. The increase in G&A expenses for the three and nine months ended September 30, 2019 compared to the same periods in 2018 was primarily due to various growth and strategic initiatives that began in 2019.

Regulatory Fees. Regulatory fees, which consist of the fees paid to the Farm Credit Administration ("FCA"), an independent agency in the executive branch of the United States government that regulates Farmer Mac, were \$0.7 million and \$2.1 million for the three and nine months ended September 30, 2019, respectively, compared to \$0.6 million and \$1.9 million for the same periods in 2018, respectively. FCA has advised Farmer Mac that its estimated fees for the federal government fiscal year ending September 30, 2020 would increase to \$2.9 million (\$0.725 million per federal government fiscal quarter). 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 was \$4.6 million and \$20.4 million for the three and nine months ended September 30, 2019, respectively, compared to \$8.0 million and \$21.7 million for the same periods in 2018, respectively. The effective federal tax rate for the first nine months of 2019 closely approximates the 21.0% statutory federal corporate tax rate. For the first nine months of 2018, the effective tax rate was 20.3% due to tax benefits associated with stock compensation exercises.

Business Volume. Our outstanding business volume was \$20.9 billion as of September 30, 2019, a net increase of \$185.6 million from June 30, 2019, after taking into account all new business, maturities, and paydowns on existing assets. This net increase was across three lines of business: \$102.4 million in Farm & Ranch, \$76.9 million in Rural Utilities, and \$46.4 million in USDA Guarantees. These net increases were partially offset by a net decrease of \$40.1 million in the Institutional Credit line of business.

The \$102.4 million net increase in our Farm & Ranch line of business was comprised of an \$82.7 million net increase in outstanding loan purchase volume and a \$19.7 million net increase in loans under LTSPCs. Our net growth of 9.4% in Farm & Ranch loan purchases over the twelve months ended September 30, 2019 compared favorably to the 3.8% net growth of the overall agricultural mortgage loan market over the

twelve months ended June 30, 2019 (based on our analysis of bank and Farm Credit System call report data). Our gross purchase volume increased slightly during the first nine months of 2019.

The net growth in our Rural Utilities line of business in third quarter 2019 was primarily due to the purchase of multiple loans that totaled \$117.3 million. These purchases were partially offset by repayments of \$40.3 million during the quarter.

Our USDA Guarantees line of business grew by \$46.4 million in third quarter 2019, compared to net growth of \$36.6 million in second quarter 2019. This increase in growth reflects our ability to more effectively meet customer demands in an increasingly competitive environment and increased loan limits mandated by the 2018 farm bill described in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Outlook" in this report.

Our Institutional Credit line of business decreased by \$40.1 million in third quarter 2019, which was primarily related to the maturity of one \$75.0 million AgVantage security that did not renew. This maturity was partially offset by net growth of \$52.6 million from two of our financial fund counterparties.

For more information about potential growth opportunities in Farmer Mac's lines of business, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Outlook" in this report.

The following table sets forth gross purchase volumes 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. The table also sets forth the net growth or decrease under Farmer Mac's lines of business, after maturities, principal paydowns, and sales:

Table 9

	New Business Volume – Farmer Mac Loan Purchases, Guarantees, LTSPCs, and AgVantage Securities							
	For the Three Months Ended				For the Nine Months Ended			
	September 30, 2019		September 30, 2018		September 30, 2019		September 30, 2018	
	Gross volume	Net growth/ (decrease)	Gross Volume	Net growth/ (decrease)	Gross volume	Net growth/ (decrease)	Gross Volume	Net growth/ (decrease)
	<i>(in thousands)</i>							
Farm & Ranch:								
Loans	\$ 309,805	\$ 82,707	\$ 192,628	\$ 41,660	\$ 761,113	\$ 248,643	\$ 675,840	\$ 221,886
LTSPCs	125,022	19,668	64,100	(15,040)	273,558	(88,888)	349,231	(17,454)
USDA Guarantees:								
USDA Securities	104,158	41,027	90,018	32,098	231,370	15,775	264,196	26,564
Farmer Mac Guaranteed USDA Securities	9,506	5,342	26,321	21,038	57,852	36,368	105,628	92,473
Rural Utilities:								
Loans	117,279	85,623	—	(29,116)	768,477	673,930	8,645	(113,589)
LTSPCs	—	(8,692)	—	(8,286)	—	(33,444)	—	(137,007)
Institutional Credit:								
AgVantage securities	402,611	(40,051)	785,953	(26,605)	1,887,475	355,450	2,424,493	460,402
AgVantage revolving line of credit facility	—	—	300,000	—	—	—	300,000	—
Total purchases, guarantees, LTSPCs, and AgVantage securities	<u>\$1,068,381</u>	<u>\$ 185,624</u>	<u>\$1,459,020</u>	<u>\$ 15,749</u>	<u>\$3,979,845</u>	<u>\$1,207,834</u>	<u>\$4,128,033</u>	<u>\$ 533,275</u>

During the first nine months of 2019, we purchased 1,553 Farm & Ranch term loans and revolving line of credit draws. These purchases consisted of 598 term loans with an average unpaid principal balance of \$1,015,000 and 955 revolving line of credit draws with an average unpaid principal balance of \$162,000. During the first nine months of 2018, we purchased 1,600 Farm & Ranch term loans and revolving line of credit draws. These purchases consisted of 676 term loans with an average unpaid principal balance of \$879,000 and 924 revolving line of credit draws with an average unpaid principal balance of \$109,000.

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 third quarter 2019 and 2018 was less than one year. Of those loans, 57% and 63% had principal amortization periods longer than the maturity date, resulting in balloon payments at maturity, with a weighted-average remaining term to maturity of 15.7 years and 22.4 years, respectively.

During third quarter 2019 and 2018, Farmer Mac securitized some of the Farm & Ranch loans it had purchased and sold the resulting Farmer Mac Guaranteed Securities, as shown below. During the three and nine months ended September 30, 2019 and 2018, Farmer Mac realized no gains or losses from the sale of Farmer Mac Guaranteed Securities or USDA Securities. Farmer Mac consolidates these loans and presents them as "Loans held for investment in consolidated trusts, at amortized cost" on the consolidated

balance sheets. For the three and nine months ended September 30, 2019, none and \$63.1 million, respectively, of Farmer Mac Guaranteed Securities were sold to a related party to Farmer Mac (which is related by virtue of its owning more than 10% of Farmer Mac's Class A voting common stock), compared to \$38.9 million and \$68.7 million for the same periods in 2018, respectively.

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

Table 10

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
	<i>(in thousands)</i>			
Loans securitized and sold as Farm & Ranch Guaranteed Securities	\$ 23,539	\$ 82,781	\$ 141,543	\$ 199,764
Farmer Mac Guaranteed USDA Securities	9,506	26,321	57,853	105,628
AgVantage securities	402,611	785,953	1,887,475	2,424,493
Total Farmer Mac Guaranteed Securities issuances	<u>\$ 435,656</u>	<u>\$ 895,055</u>	<u>\$ 2,086,871</u>	<u>\$ 2,729,885</u>

The following table sets forth information about 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 September 30, 2019		As of December 31, 2018	
	<i>(in thousands)</i>			
Farm & Ranch:				
Loans	\$	3,310,248	\$	3,071,222
Loans held in trusts:				
Beneficial interests owned by third party investors		1,526,718		1,517,101
LTSPCs		2,441,456		2,509,787
Guaranteed Securities		115,306		135,862
USDA Guarantees:				
USDA Securities		2,131,066		2,120,553
Farmer Mac Guaranteed USDA Securities		436,697		395,067
Rural Utilities:				
Loans		1,612,773		938,843
LTSPCs ⁽¹⁾		619,829		653,272
Institutional Credit				
AgVantage Securities		8,438,266		8,082,817
Revolving floating rate AgVantage facility ⁽²⁾		300,000		300,000
Total	<u>\$</u>	<u>20,932,359</u>	<u>\$</u>	<u>19,724,524</u>

⁽¹⁾ As of September 30, 2019 and December 31, 2018, includes \$20.0 million and \$17.0 million, respectively, related to one-year loan purchase commitments on which Farmer Mac receives a nominal unused commitment fee.

⁽²⁾ During the first nine months of both 2019 and 2018, \$100.0 million of this facility was drawn and subsequently repaid. 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 September 30, 2019:

Table 12

Schedule of Principal Amortization as of September 30, 2019

	Loans Held	Loans Underlying Off-Balance Sheet Farmer Mac Guaranteed Securities and LTSPCs	USDA Securities and Farmer Mac Guaranteed USDA Securities	Total
	<i>(in thousands)</i>			
2019	\$ 53,709	\$ 53,633	\$ 27,567	\$ 134,909
2020	291,325	248,778	112,252	652,355
2021	299,996	283,251	112,197	695,444
2022	260,440	224,745	116,295	601,480
2023	273,177	201,030	120,484	594,691
Thereafter	5,271,092	2,165,154	2,078,968	9,515,214
Total	\$ 6,449,739	\$ 3,176,591	\$ 2,567,763	\$ 12,194,093

Of the \$20.9 billion outstanding principal balance of volume included in Farmer Mac's four lines of business as of September 30, 2019, \$8.7 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 September 30, 2019:

Table 13

AgVantage Balances by Year of Maturity

	As of September 30, 2019
	<i>(in thousands)</i>
2019	\$ 133,268
2020	1,324,310
2021	1,710,126
2022 ⁽¹⁾	1,670,512
2023	799,410
Thereafter ⁽²⁾	3,100,640
Total	\$ 8,738,266

⁽¹⁾ Includes the expiration of the \$300.0 million revolving floating rate AgVantage facility.

⁽²⁾ Includes various maturities ranging from 2024 to 2044.

The weighted-average remaining maturity of the outstanding AgVantage securities shown in the table above was 5.4 years as of September 30, 2019.

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 lending institutions in the agriculture and rural financing business, Farmer Mac foresees opportunities for continued growth across our lines of business, driven by several key factors:

- As agricultural and rural utilities lenders seek to manage equity capital and return on equity capital requirements or seek to reduce exposure due to lending limits or concentration limits, Farmer Mac can provide relief for those institutions through loan purchases, participations, guarantees, LTSPCs, or wholesale funding.
- While overall loan growth within the rural utilities industry appears to be moderate in the near term due to generally flat demand for capital, future growth opportunities may increase in Farmer Mac's Rural Utilities line of business from transacting business with new counterparties and exploring new types of loan products. These opportunities may be limited by sector growth, credit quality, and the competitiveness of Farmer Mac's products.
- As a result of business development efforts, targeted marketing and brand awareness initiatives, product development efforts, and continued interest in the agricultural asset class from institutional investors, Farmer Mac's customer base and product set continue to expand, which may generate more demand for Farmer Mac's products from new sources.
- Consolidation within the agricultural finance industry, coupled with Farmer Mac's relationships with larger regional and national lenders, continue to provide opportunities that could influence Farmer Mac's loan demand and the average transaction size within Farmer Mac's Farm & Ranch line of business.
- Expansion opportunities for agricultural producers that have benefited from a decrease in interest rates have resulted in increased financing requirements for mergers and acquisitions, consolidation, and vertical integration across many sectors of the agricultural industry, which may also generate demand for Farmer Mac's loan products.

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

Expense Outlook. Farmer Mac continues to expand its investments in human capital, technology, and business infrastructure to increase capacity and efficiency as it seeks to accommodate its growth opportunities and achieve its long-term strategic objectives. Accordingly, Farmer Mac expects the annual increases in its operating expenses to be above historical averages over the next several years and we will further refine these estimates as we move forward. Our operating expenses (compensation and employee benefits, G&A expenses, and regulatory fees) for the nine months ended September 30, 2019 increased by about 7% over the comparable prior year period. We continue to believe that aggregate operating expenses will increase by approximately 8% to 9% in 2019 relative to 2018 due to the timing of various growth and strategic initiatives planned that will be continuing during fourth quarter 2019.

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 while others are not. The profitability of agricultural sectors is also affected by the demand for and supply of

agricultural commodities and products on a domestic and global basis, which can vary largely as a result of global production trends, international trade policies, weather patterns, access to water supply, and harvest conditions.

Net cash income, one of the USDA's benchmark measures of economic activity in the agricultural industry, has declined significantly since reaching a cyclical peak in 2013. However, changes in farm income levels are largely localized and depend on producer region and commodity production type. The USDA forecasts that aggregate net cash income levels increased slightly year-over-year in 2018 due to falling farm production expenses, higher farm cash receipts, and higher government support payments. The USDA projects that net cash income growth will continue to climb by 7.3% in 2019 due to slight improvements in farm-related income and higher government payments. Farmland values appear to have held steady in 2019, even in the Midwest region where producers are most exposed to changes in the grain markets. Data released in 2019 by the USDA indicates an average decrease in farm real estate values of only 0.2% in 2019 in Corn Belt states (Illinois, Indiana, Iowa, Missouri, and Ohio), but an increase of 2.8% in Northern Plains states (Kansas, Nebraska, North Dakota, and South Dakota). In all other regions, farmland value averages are reported to be flat to increasing. While regional averages for farmland values provide a good barometer for the overall movement in U.S. farmland values, economic forces affecting land markets are highly localized and some markets may experience greater volatility than state or national averages indicate.

Over the past few decades, the U.S. agricultural industry has become increasingly connected to global trade, and agricultural export demand depends significantly on trading relationships in numerous foreign markets, as well as on foreign exchange rates. A slowdown in global economic growth or continued tightening in trade policies and agreements could adversely affect the demand for certain U.S. agricultural exports, which may result in downward pressure on commodity prices. For example, the series of reciprocal import tariffs placed on various agricultural products by China and the U.S. during 2018 and 2019 has materially affected the export sales for these products, particularly soybeans produced in the U.S.

In 2018 and 2019, the USDA has used direct financial aid to try to dampen the effects of market disruption due to retaliatory tariffs placed by trading partners on agricultural exports. In August 2018, the USDA announced details on a \$12 billion aid package for U.S. agricultural producers designed to help offset expected market losses resulting from trade disruptions. The USDA reports that nearly \$8.6 billion has been directly distributed to producers through the USDA's 2018 Market Facilitation Program (MFP), the largest and most direct component of the trade aid package. The 2018 MFP payments constitute approximately 8.2% of producers' 2018 net cash income. Farmer Mac estimates that about 50% of outstanding Farm & Ranch loan volume as of September 30, 2019 was to borrowers who were eligible for a payment under the 2018 MFP. In May 2019, the USDA released initial details on a new relief package totaling up to \$16 billion in aid, \$14.5 billion of which could come from direct MFP payments. The USDA expects payments to occur in three tranches from August 2019 through January 2020, and any future payments would be cancelable if market conditions improve. Farmer Mac estimates that roughly 65% of outstanding Farm & Ranch loan volume as of September 30, 2019 was to borrowers who would be eligible for a payment under the 2019 MFP. Coincident with the trade stresses, the U.S. dollar (as measured by the U.S. Dollar Index) strengthened by approximately 5% during 2018. This decreased the competitiveness of U.S. agricultural exports and thereby diminished their global demand and contributed to reduced producer profitability. Through third quarter 2019, the U.S. dollar strengthened another 1.4%. We believe that our portfolio is sufficiently diverse by product and production region to be able to withstand any short-term market volatility that may arise because of changes in trade policy or sentiment. However, a prolonged trade dispute between one or more primary agricultural markets without substantial

and committed offsetting relief could put significant financial stress on the U.S. agricultural industry, which could have an adverse effect on Farmer Mac's portfolio.

In recent months, there have been several positive developments affecting the U.S. agricultural sector. In May 2019, Canada and Mexico removed retaliatory tariffs from U.S. agricultural imports, which improved export demand from the U.S.'s largest agricultural trading partners. In September 2019, the U.S. and Japan signed a trade-enhancement agreement, potentially lowering tariffs on U.S. agricultural exports such as beef, pork, fruits, and nuts among other goods. This could have a positive effect on exports to Japan into 2020. In October 2019, the World Trade Organization (WTO) ruled in favor of the U.S. in a 15-year-long trade dispute with the European Union (EU) over aircraft subsidies. The ruling allows the U.S. to add tariffs on goods from the EU up to \$7.5 billion. Many of the goods targeted for tariffs are agricultural, raising the price of foreign imports and making many domestic products more price-competitive to consumers.

In addition to global trade disruptions, many U.S. farmers and ranchers experienced difficult weather conditions during the first half of 2019. Due to excessive soil moisture, record-setting precipitation, and cool temperatures early in the growing cycle, many corn and soybean growers throughout the Midwest were either significantly delayed or prevented from planting their intended crop for 2019. Delays in corn and soybean planting reduce crop yield potential and, ultimately, total grain production. USDA has reported that, through October 21, 2019, corn harvesting progress was at the slowest pace in the last ten years. Farmer Mac estimates that 27% of outstanding Farm & Ranch loan volume as of September 30, 2019 was to borrowers growing corn and soybeans in the affected area. The clear majority of corn and soybean acres are enrolled in federally-subsidized crop insurance programs. According to USDA data, nearly 90% of all U.S. corn and soybean acres planted between 2016 and 2018 were enrolled in federal crop insurance programs, and most policies include a provision that allows for insurance payment claims on acres that were prevented from planting due to inclement weather. Farmer Mac estimates that about 85% of outstanding Farm & Ranch loan volume to borrowers growing some corn or soybeans in the affected states likely maintain federal crop insurance coverage. Although planting conditions were difficult in 2019, Farmer Mac believes that there are enough risk mitigators in its grain portfolio to offset the short-term pressure to grain profitability related to adverse weather.

In recent years, the 90-day delinquencies and credit losses in Farmer Mac's portfolio have remained low compared to historical averages. However, the volume of Farmer Mac's substandard assets has generally increased since 2015. To date, the fluctuations in 90-day delinquencies and the increase in substandard assets have not yet 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. Farmer Mac, therefore, 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 and weather 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 September 30, 2019, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

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. The Agricultural Improvement Act of 2018, also referred to as the "farm bill," was signed into law in December 2018. Many provisions in the new farm bill are a continuation of existing federal agricultural policies in effect under the previous farm bill, including those affecting crop insurance, commodity support programs, and other aspects of agricultural production. We will continue to monitor the effects of any altered federal agricultural policies as the USDA adopts final regulations implementing the new farm bill.

The farm bill included a provision that amends Farmer Mac's charter to expand the acreage exception to the loan amount limitation on Farm & Ranch loans (currently \$13.1 million) from 1,000 acres to 2,000 acres, subject to FCA's assessment of the feasibility of the change. FCA submitted its assessment to Congress on June 18, 2019. In that assessment, FCA concluded that increasing the acreage exception from 1,000 to 2,000 acres is feasible, would not raise any safety and soundness concerns, and would provide additional farming operations unconstrained access to Farmer Mac's secondary market. Accordingly, the acreage exception will increase to 2,000 acres on June 18, 2020, meaning that the statutory loan amount limitation will not apply to Farm & Ranch loans secured by 2,000 acres of agricultural real estate or less. Farmer Mac will continue to evaluate this future increase in the acreage limitation to determine the potential benefits to Farmer Mac's customers and the related effects on our business.

Under the farm bill, the authorized limit for the amount of new guarantees issued by the USDA under the Consolidated Farm and Rural Development Act (which are eligible for Farmer Mac's USDA Guarantees line of business) was increased from \$3.026 billion to \$7.0 billion for each government fiscal year through September 2023. Also, the limit for the size of individual loans to which these guarantees are applied was increased from \$1.399 million to \$1.75 million, which thereby increases the authorized amount of the USDA-guaranteed portion for an individual loan. These higher loan limits have aided in additional growth in the USDA Guarantees purchased by Farmer Mac during 2019, and they could result in more increases in new business volume in our USDA Guarantees line of business in the future.

Farmer Mac continues to monitor the impact of state legislation and regulations that could impact U.S. agriculture. For example, groundwater management regulations, including in California, may result in tighter restrictions on groundwater usage that could affect agricultural producers in the future. Farmer Mac will monitor the effects that any changes in legislation or regulation (federal or state) could have on Farmer Mac or its customers.

Farmer Mac's marketing and brand awareness initiatives 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 conducts 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. Farmer Mac's initiatives to increase the awareness of Farmer Mac and its products within the agricultural lender community and the larger agricultural industry have included hosting events on relevant agricultural lending topics, participating on speaker panels at agriculture-related regional and national conferences, and distributing original content about conditions in the agricultural economy. Demand for Farmer Mac's secondary market tools also depends on the fluctuating needs of rural lenders as they seek to maintain liquidity and adequate capital levels.

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, all of whom can pledge loans as collateral to obtain financing as part of Farmer Mac's Institutional Credit line of business. Farmer Mac offers other AgVantage products tailored to fund investors in agricultural mortgages. 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 an 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 believes there is opportunity to expand this type of business as both the trend toward institutional investment in agricultural assets and awareness of Farmer Mac's AgVantage and other secondary loan product offerings continue to grow. For more information about the AgVantage products, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Institutional."

Rural Utilities Industry. Prospects for loan growth within the rural utilities industry appear to be moderate in the near term due to generally flat demand for capital, as capital expenditures for large generation assets have decreased and increased revenues for electrical cooperatives have driven a de-leveraging trend. Future growth opportunities for lending to the electrical cooperative industry may be impacted by the demand for electric power in rural areas, capital expenditures by electric cooperatives driven by regulatory or technological changes, and competitive dynamics within the rural utilities cooperative finance industry. In the coming years, the retirement of coal generation assets, growth in renewable energy generation, deployment of energy storage technologies, expansion of broadband service in rural areas, and the deepening of relationships with new and existing counterparties, all may provide new business opportunities for Farmer Mac. To address some of these trends, Farmer Mac has begun to deploy new financing products tailored to the renewable energy sector, which represents a new market opportunity for Farmer Mac.

Balance Sheet Review

Assets. Farmer Mac's total assets as of September 30, 2019 were \$21.3 billion, compared to \$18.7 billion as of December 31, 2018. The increase in total assets was primarily attributable to the net growth in our outstanding business volume across all lines of business.

As of September 30, 2019, Farmer Mac had \$0.6 billion of cash and cash equivalents and \$3.2 billion of investment securities, compared to \$0.4 billion of cash and cash equivalents and \$2.3 billion of investment securities as of December 31, 2018. The increase in investment securities was primarily due to an increase in the liquidity investment portfolio to support our program asset growth and due to the early reinvestment of maturing U.S. Treasury Securities.

As of September 30, 2019, Farmer Mac had \$8.6 billion of Farmer Mac Guaranteed Securities, \$6.5 billion of loans, net of allowance, and \$2.2 billion of USDA Securities. This compares to \$8.1 billion of Farmer Mac Guaranteed Securities, \$5.5 billion of loans, net of allowance, and \$2.2 billion of USDA Securities as of December 31, 2018.

Liabilities. Farmer Mac's total liabilities were \$20.6 billion as of September 30, 2019, compared to \$17.9 billion as of December 31, 2018. The increase in total liabilities was primarily due to an increase in total notes payable to support our program asset growth.

Equity. As of September 30, 2019, Farmer Mac had total equity of \$750.3 million, compared to \$752.6 million as of December 31, 2018. The decrease in total equity was primarily due to the redemption of the Series B preferred stock and other comprehensive losses, net of tax, partially offset by the issuance of Series D preferred stock and net income attributable to Farmer Mac.

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 where Farmer Mac is the primary beneficiary, the trust assets and liabilities are included on Farmer Mac's consolidated balance sheet. For securitization trusts where Farmer Mac is not the primary beneficiary and in the event of de-consolidation, both of these alternatives create 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's direct credit exposure to Farm & Ranch loans held and loans underlying Farm & Ranch Guaranteed Securities and LTSPCs as of September 30, 2019 was \$7.4 billion across 48 states. 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, 2018 filed with the SEC on February 21, 2019.

Farmer Mac's direct credit exposure to Rural Utilities loans held and loans underlying LTSPCs as of September 30, 2019 was \$2.2 billion across 43 states, of which \$1.8 billion were loans to electric distribution cooperatives and \$0.4 billion were loans to generation & transmission cooperatives. For more information about Farmer Mac's underwriting and collateral valuation standards for Rural Utilities loans, 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, 2018 filed with the SEC on February 21, 2019. As of September 30, 2019, there were no delinquencies in Farmer Mac's portfolio of Rural Utilities loans, and Farmer Mac had 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. For more information about Farmer Mac's underwriting and collateral valuation standards for Institutional Credit securities, see "Business—Farmer Mac's Lines of Business—Institutional Credit" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

As of September 30, 2019, 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 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 we have little or no credit risk exposure in the USDA Guarantees line of business because of the USDA guarantee. As of September 30, 2019, Farmer Mac had not experienced any credit losses on any business under the USDA Guarantees line of business and does not expect to incur any such losses in the future.

Farmer Mac considers a loan's original loan-to-value ratio as one of many factors in evaluating loss severity. Loan-to-value ratios depend on the market value of a property, as determined in accordance with Farmer Mac's collateral valuation standards. As of September 30, 2019 and December 31, 2018, the average unpaid loan balances for loans outstanding in the Farm & Ranch line of business was \$649,000 and \$640,000, respectively. Farmer Mac calculates the original loan-to-value ratio of a loan by dividing the original loan principal balance by the original appraised property value. This calculation does not reflect any amortization of the original loan balance or any adjustment to the original appraised value to provide a current market value. The original loan-to-value ratio of any cross-collateralized loans is calculated on a consolidated basis rather than on a loan-by-loan basis. The weighted-average original loan-to-value ratio for Farm & Ranch loans purchased during third quarter 2019 was 51%, compared to 54% for loans purchased during third quarter 2018. 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 51% as of both September 30, 2019 and December 31, 2018. The weighted-average original loan-to-value ratio for all 90-day delinquencies was 52% as of both September 30, 2019 and December 31, 2018.

The weighted-average current loan-to-value ratio (the loan-to-value ratio based on original appraised value and current outstanding loan amount adjusted to reflect loan amortization) for Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs was 44% and 45% as of September 30, 2019 and December 31, 2018, respectively. See Table 16 for more information.

For more information about the credit quality of Farmer Mac's Farm & Ranch portfolio and the associated allowance for losses please refer to Note 5 to the consolidated financial statements.

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."

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 September 30, 2019, Farmer Mac's 90-day delinquencies were \$59.7 million (0.81% of the Farm & Ranch portfolio), compared to \$26.9 million (0.37% of the Farm & Ranch portfolio) as of December 31, 2018 and \$37.5 million (0.53% of the Farm & Ranch portfolio) as of September 30, 2018. Those 90-day delinquencies were comprised of 61 delinquent loans as of September 30, 2019, compared to 47 delinquent loans as of December 31, 2018 and 64 delinquent loans as of September 30, 2018. The increase in 90-day delinquencies as a percentage of the Farm & Ranch portfolio compared to December 31, 2018 is

primarily related to idiosyncratic factors of a few large loans and less related to systemic, macroeconomic factors.

Farmer Mac's 90-day delinquencies have historically fluctuated 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 and lower levels generally observed at the end of the second and fourth quarters of each year as a result of the annual (January 1st) and semi-annual (January 1st and July 1st) payment terms of most Farm & Ranch loans. Farmer Mac believes that it remains adequately collateralized on its delinquent loans. Farmer Mac expects that over time its 90-day delinquency rate will revert closer to Farmer Mac's historical average, and possibly exceed it (which it did in third quarter 2017), due to macroeconomic factors and the cyclical nature of the agricultural economy. Farmer Mac's average 90-day delinquency rate as a percentage of its Farm & Ranch portfolio over the last 15 years is approximately 1%. The highest 90-day delinquency rate observed during that period occurred in 2009 at approximately 2%, which coincided with increased delinquencies in loans within Farmer Mac's then-held ethanol loan portfolio that Farmer Mac no longer holds.

The following table presents historical information about 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 14

	Farm & Ranch Line of Business	90-Day Delinquencies	Percentage
	<i>(dollars in thousands)</i>		
As of:			
September 30, 2019	\$ 7,393,728	\$ 59,691	0.81%
June 30, 2019	7,291,352	28,045	0.38%
March 31, 2019	7,215,585	52,366	0.73%
December 31, 2018	7,233,971	26,881	0.37%
September 30, 2018	7,072,018	37,545	0.53%
June 30, 2018	7,045,397	43,076	0.61%
March 31, 2018	6,932,002	47,560	0.69%
December 31, 2017	6,867,586	48,444	0.71%
September 30, 2017	6,557,030	66,381	1.01%

When analyzing the overall risk profile of its lines of business, Farmer Mac considers 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 0.29% of total outstanding business volume as of September 30, 2019, compared to 0.14% as of December 31, 2018 and 0.19% as of September 30, 2018. 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 September 30, 2019 by year of origination, geographic region, commodity/collateral type, original loan-to-value ratio, and range in the size of borrower exposure:

Table 15

Farm & Ranch 90-Day Delinquencies as of September 30, 2019

	Distribution of Farm & Ranch Line of Business	Farm & Ranch Line of Business	90-Day Delinquencies ⁽¹⁾	Percentage
		<i>(dollars in thousands)</i>		
By year of origination:				
2009 and prior	9%	\$ 690,477	\$ 5,850	0.85%
2010	2%	122,088	—	—%
2011	2%	179,234	61	0.03%
2012	6%	455,614	—	—%
2013	9%	660,197	3,019	0.46%
2014	7%	530,204	17,969	3.39%
2015	10%	707,599	470	0.07%
2016	14%	1,054,434	14,268	1.35%
2017	16%	1,211,002	11,332	0.94%
2018	14%	1,006,271	6,722	0.67%
2019	11%	776,608	—	—%
Total	100%	\$ 7,393,728	\$ 59,691	0.81%
By geographic region⁽²⁾:				
Northwest	12%	\$ 850,862	\$ 18,297	2.15%
Southwest	33%	2,417,144	11,042	0.46%
Mid-North	31%	2,297,159	12,245	0.53%
Mid-South	12%	917,889	2,113	0.23%
Northeast	4%	325,674	2,711	0.83%
Southeast	8%	585,000	13,283	2.27%
Total	100%	\$ 7,393,728	\$ 59,691	0.81%
By commodity/collateral type:				
Crops	51%	\$ 3,795,614	\$ 25,605	0.67%
Permanent plantings	22%	1,614,897	16,501	1.02%
Livestock	19%	1,391,679	15,963	1.15%
Part-time farm	7%	508,260	1,622	0.32%
Ag. Storage and Processing	1%	78,941	—	—%
Other	—	4,337	—	—%
Total	100%	\$ 7,393,728	\$ 59,691	0.81%
By original loan-to-value ratio:				
0.00% to 40.00%	18%	\$ 1,332,719	\$ 4,723	0.35%
40.01% to 50.00%	25%	1,864,787	18,236	0.98%
50.01% to 60.00%	35%	2,557,798	29,649	1.16%
60.01% to 70.00%	18%	1,300,301	6,457	0.50%
70.01% to 80.00% ⁽³⁾	4%	318,671	330	0.10%
80.01% to 90.00% ⁽³⁾	—%	19,452	296	1.52%
Total	100%	\$ 7,393,728	\$ 59,691	0.81%
By size of borrower exposure⁽⁴⁾:				
Less than \$1,000,000	33%	\$ 2,436,975	\$ 12,489	0.51%
\$1,000,000 to \$4,999,999	37%	2,731,458	28,580	1.05%
\$5,000,000 to \$9,999,999	13%	957,901	6,400	0.67%
\$10,000,000 to \$24,999,999	9%	644,231	12,222	1.90%
\$25,000,000 and greater	8%	623,163	—	—%
Total	100%	\$ 7,393,728	\$ 59,691	0.81%

⁽¹⁾ Includes loans held 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.

⁽²⁾ 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).

⁽³⁾ Primarily part-time farm loans. Loans with an original loan-to-value ratio of greater than 80% are required to have private mortgage insurance.

⁽⁴⁾ Includes aggregated loans to single borrowers or borrower-related entities.

Another indicator that Farmer Mac considers in analyzing the credit quality of its Farm & Ranch portfolio is the level of internally-rated "substandard" assets, both in dollars and as a percentage of the outstanding Farm & Ranch portfolio. Assets categorized as "substandard" 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 September 30, 2019, Farmer Mac's substandard assets were \$290.5 million (3.9% of the Farm & Ranch portfolio), compared to \$232.7 million (3.2% of the Farm & Ranch portfolio) as of December 31, 2018. Those substandard assets were comprised of 344 loans as of September 30, 2019 and 318 loans as of December 31, 2018. The \$57.8 million increase in substandard assets during the first nine months of 2019 compared to December 31, 2018 was due to the downgrade of more assets into the substandard category than those that paid off or migrated to a more favorable category, largely related to certain large loans migrating into the substandard category. Farmer Mac did not experience a significant change in the concentration of its substandard assets among commodities during third quarter 2019 compared to December 31, 2018. Quarterly fluctuations in the total amount of substandard assets continue to be driven by idiosyncratic factors of a few large loans migrating into and out of the substandard asset pool and less related to systemic, macroeconomic factors. Idiosyncratic factors include death, divorce, or health issues experienced by a borrower or the borrower's family, or economic conditions unique to a single entity.

Farmer Mac's average substandard assets as a percentage of its Farm & Ranch portfolio over the last 15 years is approximately 4%. Due to macroeconomic factors and the cyclical nature of the agricultural economy, we believe that the substandard rate will remain near or even slightly above the historical average of 4% in the short-term. The highest substandard asset rate observed during that period occurred in 2010 at approximately 8%, which coincided with an increase in substandard loans within Farmer Mac's then-held ethanol portfolio that Farmer Mac no longer holds. If Farmer Mac's substandard asset rate increases from current levels, it is likely that Farmer Mac's provision to the allowance for loan losses and the reserve for losses will also increase.

Although some credit losses are inherent to the business of agricultural lending, Farmer Mac believes that 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.

The following table presents the current loan-to-value ratios for the Farm & Ranch portfolio, as disaggregated by internally assigned risk grades:

Table 16

Farm & Ranch current loan-to-value ratio by internally assigned grade as of September 30, 2019

	Acceptable	Special Mention	Substandard	Total
	<i>(in thousands)</i>			
Current loan-to-value ratio ⁽¹⁾ :				
0.00% to 40.00%	\$ 2,503,182	\$ 86,329	\$ 72,563	\$ 2,662,074
40.01% to 50.00%	1,872,945	88,250	88,444	2,049,639
50.01% to 60.00%	1,504,912	111,867	75,849	1,692,628
60.01% to 70.00%	661,138	16,429	32,130	709,697
70.01% to 80.00%	228,337	14,831	3,004	246,172
80.01% and greater	10,719	4,279	18,520	33,518
Total	\$ 6,781,233	\$ 321,985	\$ 290,510	\$ 7,393,728

⁽¹⁾ The current loan-to-value ratio is based on original appraised value and current outstanding loan amount adjusted to reflect loan amortization.

The following table presents Farmer Mac's cumulative net credit losses relative to the cumulative original balance for all Farm & Ranch loans purchased and loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities as of September 30, 2019 by year of origination, geographic region, and commodity/collateral type. The purpose of this information is to present information about losses relative to original Farm & Ranch purchases, guarantees, and commitments.

Table 17

Farm & Ranch Credit Losses Relative to Cumulative
Original Loans, Guarantees, and LTSPCs as of September 30, 2019

	Cumulative Original Loans, Guarantees and LTSPCs	Cumulative Net Credit Losses/ (Recoveries)	Cumulative Loss Rate
	<i>(dollars in thousands)</i>		
By year of origination:			
2009 and prior	\$ 14,665,479	\$ 30,146	0.21 %
2010	664,342	5	— %
2011	779,084	3,661	0.47 %
2012	1,161,015	—	— %
2013	1,431,681	—	— %
2014	988,440	—	— %
2015	1,128,994	(473)	(0.04)%
2016	1,427,729	—	— %
2017	1,526,955	—	— %
2018	1,231,198	—	— %
2019	844,933	—	— %
Total	<u>\$ 25,849,850</u>	<u>\$ 33,339</u>	0.13 %
By geographic region ⁽¹⁾ :			
Northwest	\$ 3,366,698	\$ 11,191	0.33 %
Southwest	9,139,432	8,167	0.09 %
Mid-North	6,482,567	12,897	0.20 %
Mid-South	3,080,850	(211)	(0.01)%
Northeast	1,498,521	323	0.02 %
Southeast	2,281,782	972	0.04 %
Total	<u>\$ 25,849,850</u>	<u>\$ 33,339</u>	0.13 %
By commodity/collateral type:			
Crops	\$ 11,803,525	\$ 2,887	0.02 %
Permanent plantings	5,700,974	9,368	0.16 %
Livestock	5,972,730	3,877	0.06 %
Part-time farm	1,504,064	1,534	0.10 %
Ag. Storage and Processing	717,496	15,673	2.18 %
Other	151,061	—	— %
Total	<u>\$ 25,849,850</u>	<u>\$ 33,339</u>	0.13 %

⁽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).

Analysis of portfolio performance indicates that commodity type is the primary determinant of Farmer Mac's exposure to loss on a given loan. The following tables present concentrations of Farm & Ranch loans held and loans underlying LTSPCs and off-balance sheet Farm & Ranch Guaranteed Securities by commodity type within geographic region and cumulative credit losses by origination year and commodity type:

Table 18

As of September 30, 2019

Farm & Ranch Concentrations by Commodity Type within Geographic Region							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total	
<i>(dollars in thousands)</i>							
By geographic region⁽¹⁾:							
Northwest	\$ 399,784	\$ 134,283	\$ 235,006	\$ 81,348	\$ —	\$ 441	\$ 850,862
	5.4%	1.8%	3.2%	1.1%	—%	—%	11.5%
Southwest	553,450	1,251,575	473,588	84,394	53,405	732	2,417,144
	7.5%	17.0%	6.4%	1.1%	0.7%	—%	32.7%
Mid-North	1,931,866	15,659	201,561	138,588	7,099	2,386	2,297,159
	26.1%	0.2%	2.7%	2.0%	0.1%	0.1%	31.2%
Mid-South	557,412	24,921	267,600	59,326	8,296	334	917,889
	7.5%	0.3%	3.6%	0.8%	0.1%	—%	12.3%
Northeast	151,723	31,126	68,807	70,008	4,010	—	325,674
	2.1%	0.4%	0.9%	0.9%	0.1%	—%	4.4%
Southeast	201,379	157,333	145,117	74,596	6,131	444	585,000
	2.7%	2.1%	2.0%	1.0%	0.1%	—%	7.9%
Total	\$ 3,795,614	\$ 1,614,897	\$1,391,679	\$ 508,260	\$ 78,941	\$ 4,337	\$7,393,728
	51.3%	21.8%	18.8%	6.9%	1.1%	0.1%	100.0%

⁽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).

Table 19

As of September 30, 2019

Farm & Ranch Cumulative Credit Losses by Origination Year and Commodity Type							
Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Total		
<i>(in thousands)</i>							
By year of origination:							
2009 and Prior	\$ 3,427	\$ 9,368	\$ 3,872	\$ 1,467	\$ 12,012	\$ 30,146	
2010	—	—	5	—	—	5	
2011	—	—	—	—	3,661	3,661	
2012	—	—	—	—	—	—	
2013	—	—	—	—	—	—	
2014	—	—	—	—	—	—	
2015	(540)	—	—	67	—	(473)	
2016	—	—	—	—	—	—	
2017	—	—	—	—	—	—	
2018	—	—	—	—	—	—	
2019	—	—	—	—	—	—	
Total	\$ 2,887	\$ 9,368	\$ 3,877	\$ 1,534	\$ 15,673	\$ 33,339	

Farmer Mac requires most approved lenders to make representations and warranties about the conformity of eligible agricultural mortgage and rural utilities loans to Farmer Mac's standards, the accuracy of loan data provided to Farmer Mac, and other requirements related to the loans. Sellers who make these representations and warranties are responsible to Farmer Mac for breaches of those representations and warranties. Farmer Mac has the ability to require a seller to cure, replace, or repurchase a loan sold or transferred to Farmer Mac if any breach of a representation or warranty is discovered that was material to Farmer Mac's decision to purchase the loan or that directly or indirectly causes a default or potential loss on a loan sold or transferred by the seller to Farmer Mac. During the previous three years ended September 30, 2019, there have been no breaches of representations and warranties by sellers. In addition to relying on the representations and warranties of sellers, Farmer Mac also underwrites the agricultural real estate mortgage loans (other than rural housing and part-time farm mortgage loans) and rural utilities loans on which it has direct credit exposure. For rural housing and part-time farm mortgage loans, Farmer Mac relies on representations and warranties from the seller that those loans conform to Farmer Mac's specified underwriting criteria without exception. For more information about Farmer Mac's loan eligibility requirements and underwriting standards, see "Business—Farmer Mac's Lines of Business—Farm & Ranch—Loan Eligibility," "Business—Farmer Mac's Lines of Business—Farm & Ranch—Underwriting and Collateral Valuation (Appraisal) Standards," "Business—Farmer Mac's Lines of Business—Rural Utilities—Loan Eligibility," and "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, 2018 filed with the SEC on February 21, 2019.

Under contracts with Farmer Mac and in consideration for servicing fees, Farmer Mac-approved central servicers service loans in accordance with Farmer Mac's requirements. Central servicers are responsible to Farmer Mac for serious errors in the servicing of those loans. If a central servicer materially breaches the terms of its servicing agreement with Farmer Mac, such as failing to forward payments received or releasing collateral without Farmer Mac's consent, or experiences insolvency or bankruptcy, the central servicer is responsible for any corresponding damages to Farmer Mac and, in most cases, Farmer Mac has the right to terminate the servicing relationship for a particular loan or the entire portfolio serviced by the central servicer. Farmer Mac also can proceed against the central servicer in arbitration or exercise

any remedies available to it under law. During the previous three years ended September 30, 2019, Farmer Mac had not exercised any remedies or taken any formal action against any central servicers. For more information about Farmer Mac's servicing requirements, see "Business—Farmer Mac's Lines of Business—Farm & Ranch—Servicing" and "Business—Farmer Mac's Lines of Business—Rural Utilities—Servicing" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

Credit Risk – Institutional. Farmer Mac is exposed to credit risk arising from its business relationships with other institutions, which include:

- issuers of AgVantage securities;
- approved lenders and servicers; and
- interest rate swap counterparties.

Farmer Mac approves AgVantage counterparties and manages institutional credit risk related to those AgVantage counterparties by requiring them to meet Farmer Mac's standards for creditworthiness for the particular counterparty type and transaction. The required collateralization level is established when the AgVantage facility is entered into with the counterparty and does not change during the life of the AgVantage securities issued under the facility without Farmer Mac's consent. In AgVantage transactions, the corporate obligor is required to remove from the pool of pledged collateral any loan that becomes more than 30 days delinquent in the payment of principal or interest and to substitute an eligible loan that is current in payment to maintain the minimum required collateralization level. In the event of a default on the general obligation, Farmer Mac would have recourse to the pledged collateral and have rights to the ongoing borrower payments of principal and interest. For Farm Equity AgVantage counterparties and smaller financial funds or entities, Farmer Mac also requires that the counterparty generally (1) maintain a higher collateralization level, through lower loan-to-value ratio thresholds and higher overcollateralization than required for traditional AgVantage securities and (2) comply with specified financial covenants for the life of the related AgVantage security to avoid default. For a more detailed description of AgVantage securities, see "Business—Farmer Mac's Lines of Business—Institutional Credit—AgVantage Securities" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

The unpaid principal balance of outstanding on-balance sheet AgVantage securities secured by loans eligible for the Farm & Ranch line of business totaled \$5.5 billion as of September 30, 2019 and \$5.3 billion as of December 31, 2018. The unpaid principal balance of on-balance sheet AgVantage securities secured by loans eligible for the Rural Utilities line of business totaled \$2.9 billion as of September 30, 2019 and \$2.8 billion as of December 31, 2018. The unpaid principal balance of outstanding off-balance sheet AgVantage securities totaled \$0.3 billion as of September 30, 2019 and \$0.3 billion as of December 31, 2018.

The following table provides information about the issuers of AgVantage securities, as well as the required collateralization levels for those transactions as of September 30, 2019 and December 31, 2018:

Table 20

Counterparty	As of September 30, 2019			As of December 31, 2018		
	Balance	Credit Rating	Required Collateralization	Balance	Credit Rating	Required Collateralization
<i>(dollars in thousands)</i>						
AgVantage:						
CFC ⁽¹⁾	\$ 3,268,707	A	100%	\$ 3,070,455	A	100%
MetLife	2,550,000	AA-	103%	2,550,000	AA-	103%
Rabo AgriFinance	2,225,000	None	110%	2,075,000	None	110%
Other ⁽²⁾	415,305	None	106% to 125%	407,572	None	106% to 125%
Farm Equity AgVantage ⁽³⁾	279,254	None	110%	279,790	None	110%
Total outstanding	\$ 8,738,266			\$ 8,382,817		

⁽¹⁾ Includes \$300.0 million related to a revolving floating rate AgVantage facility. Farmer Mac receives a fixed fee based on the full dollar amount of the facility.

⁽²⁾ Consists of AgVantage securities issued by 5 different issuers as of September 30, 2019 and 6 different issuers as of December 31, 2018.

⁽³⁾ Consists of AgVantage securities from 5 different issuers as of both September 30, 2019 and December 31, 2018.

Farmer Mac manages institutional credit risk related to lenders and servicers by requiring those institutions to meet Farmer Mac's standards for creditworthiness. Farmer Mac monitors the financial condition of those institutions by evaluating financial statements and bank credit rating agency reports. For more information about Farmer Mac's lender eligibility requirements, see "Business—Farmer Mac's Lines of Business—Farm & Ranch—Approved Lenders" and "Business—Farmer Mac's Lines of Business—Rural Utilities—Approved Lenders" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

Farmer Mac manages institutional credit risk related to its interest rate swap counterparties through collateralization provisions contained in each of its swap agreements that varies based on the market value of its swaps portfolio with each counterparty. Farmer Mac and its interest rate swap counterparties are required to fully collateralize their derivatives positions without any minimum threshold for cleared swap transactions, as well as for non-cleared swap transactions entered into after March 1, 2017 (the effective date of new rules that established zero threshold requirements for the exchange of variation margin between Farmer Mac and its swap dealer counterparties in those transactions). Farmer Mac transacts interest rate swaps with multiple counterparties to reduce any counterparty credit exposure concentration. Farmer Mac also uses the clearing process for cleared swap transactions as another mechanism for managing its derivative counterparty risk. Credit risk related to interest rate swap contracts is discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Interest Rate Risk" and Note 4 to the consolidated financial statements.

Credit Risk – Other Investments. As of September 30, 2019, Farmer Mac had \$0.6 billion of cash and cash equivalents and \$3.2 billion of investment securities. The management of the credit risk inherent in these investments is governed by Farmer Mac's internal policies as well as the liquidity and investment regulations for Farmer Mac, which were issued by FCA and which establish criteria for investments that are eligible for Farmer Mac's investment portfolio, including limitations on asset class, dollar amount, issuer concentration, and credit quality. In addition to establishing a portfolio of highly liquid investments as an available source of cash, the goals of Farmer Mac's investment policies are designed to minimize Farmer Mac's exposure to financial market volatility, preserve capital, and support Farmer Mac's access to the debt markets.

Farmer Mac's liquidity and investment regulations and internal policies require that investments held in Farmer Mac's investment portfolio meet the following creditworthiness standards: (1) at a minimum, at least one obligor of the investment must have a very strong capacity to meet financial commitments for the life of the investment, even under severely adverse or stressful conditions, and generally present a very low risk of default; (2) if the obligor whose capacity to meet financial commitments is being relied upon to meet the standard set forth in subparagraph (1) is located outside of the United States, the investment must also be fully guaranteed by a U.S. government agency; and (3) the investment must exhibit low credit risk and other risk characteristics consistent with the purpose or purposes for which it is held.

Farmer Mac's liquidity and investment regulations and internal policies also establish concentration limits, which are intended to limit exposure to any single entity, issuer, or obligor. Farmer Mac's liquidity and investment regulations limit Farmer Mac's total credit exposure to any single entity, issuer, or obligor of securities to 10% of Farmer Mac's regulatory capital (\$80.3 million as of September 30, 2019). However, Farmer Mac's current policy limits this total credit exposure to 5% of its regulatory capital (\$40.2 million as of September 30, 2019). These exposure limits do not apply to obligations of U.S. government agencies or GSEs, although Farmer Mac's current policy restricts investing more than 100% of regulatory capital in the senior non-convertible debt securities of any one GSE.

Although the Liquidity and Investments Regulations do not establish limits on the maximum amount, expressed as a percentage of Farmer Mac's investment portfolio, that can be invested in each eligible asset class, Farmer Mac's internal policies set forth asset class limits as part of Farmer Mac's overall risk management framework.

Interest Rate Risk. Farmer Mac is subject to interest rate risk on all assets retained on its balance sheet because of possible timing differences in the cash flows of the assets and related liabilities. This risk is primarily related to loans held, Farmer Mac Guaranteed Securities (excluding AgVantage securities), and USDA Securities due to the ability of borrowers to prepay their loans before the scheduled maturities, thereby increasing the risk of asset and liability cash flow mismatches. Cash flow mismatches in a changing interest rate environment can reduce the earnings of Farmer Mac if assets repay sooner than expected and the resulting cash flows must be reinvested in lower-yielding investments when Farmer Mac's funding costs cannot be correspondingly reduced, or if assets repay more slowly than expected and the associated debt must be replaced by higher-cost debt. As discussed below, Farmer Mac manages this interest rate risk by funding assets purchased with liabilities matching the duration and convexity of the assets purchased.

Interest Rate Risk Management

The goal of interest rate risk management at Farmer Mac is to create and maintain a portfolio that generates stable earnings and value across a variety of interest rate environments. Recognizing that interest rate sensitivity may change with the passage of time and as interest rates change, Farmer Mac assesses this exposure regularly and, if necessary, readjusts its portfolio of assets and liabilities by:

- purchasing assets in the ordinary course of business;
- refinancing existing liabilities; or
- using financial derivatives to alter the characteristics of existing assets or liabilities.

Farmer Mac's primary strategy for managing interest rate risk is to fund asset purchases with liabilities that have similar duration and cash flow characteristics so that they will perform similarly as interest rates change. To match these characteristics, Farmer Mac issues discount notes and both callable and non-callable medium-term notes across a spectrum of maturities. Farmer Mac issues callable debt to offset the prepayment risk associated with some loans. By using a blend of liabilities that includes callable debt, the interest rate sensitivities of the liabilities tend to increase or decrease as interest rates change in a manner similar to changes in the interest rate sensitivities of the assets. Farmer Mac also uses financial derivatives to better match the durations of Farmer Mac's assets and liabilities, thereby reducing overall interest rate sensitivity.

Taking into consideration the prepayment provisions and the default probabilities associated with its loan assets, Farmer Mac uses prepayment models when projecting and valuing cash flows associated with these assets. Because borrowers' behaviors in various interest rate environments may change over time, Farmer Mac periodically evaluates the effectiveness of these models compared to actual prepayment experience and adjusts and refines the models as necessary to improve the precision of future prepayment forecasts.

Generally, the values of Farmer Mac's eligible loan assets, and the debt issued to fund these assets, increase when interest rates decline, and their values decrease as interest rates rise. Furthermore, changes in interest rates may affect loan prepayment rates which may, in turn, affect durations and values of the loans. Declining interest rates generally increase prepayment rates, which shortens the duration of these assets, while rising interest rates tend to slow loan prepayments, thereby extending the duration of the loans.

Farmer Mac is also subject to interest rate risk on loans that Farmer Mac has committed to acquire but has not yet purchased, other than delinquent loans purchased through LTSPCs or loans designated for securitization under a forward purchase agreement. When Farmer Mac commits to purchase these loans, it is exposed to interest rate risk between the time it commits to purchase the loans and the time it issues debt to fund the purchase of those loans.

Farmer Mac manages the interest rate risk related to these loans by using futures contracts involving U.S. Treasury securities and/or forward sale contracts on the debt securities of other GSEs. Farmer Mac uses U.S. Treasury futures contracts as a hedge against the level of interest rates, while forward sale contracts on GSE securities reduce its interest rate exposure to changes in both U.S. Treasury rates and spreads on Farmer Mac debt and certain Farmer Mac Guaranteed Securities. Issuing debt to fund the loans as investments does not fully eliminate interest rate risk due to the possible timing differences in the cash flows of the assets and related liabilities, as discussed above.

Farmer Mac's \$0.6 billion of cash and cash equivalents mature within three months and are funded with discount notes having similar maturities. As of September 30, 2019, \$3.04 billion of the \$3.16 billion of investment securities (96%) were floating rate securities with rates that adjust within one year or fixed rate securities with original maturities between three months and one year. Those securities are funded with effectively floating rate debt that closely matches the rate adjustment dates of the associated investments.

Interest Rate Risk Metrics

Farmer Mac regularly stress tests its portfolio for interest rate risk and uses a variety of metrics to quantify and manage its interest rate risk. These metrics include sensitivity to interest rate movements of market value of equity ("MVE") and projected net effective spread ("NES") as well as duration gap analysis.

MVE represents management's estimate of the present value of all future cash flows from on- and off-balance sheet assets, liabilities, and financial derivatives, discounted at current interest rates and appropriate spreads. However, MVE is not indicative of the market value of Farmer Mac as a going concern because these market values are theoretical and do not reflect future business activities. MVE sensitivity analysis is used to measure the degree to which the market values of Farmer Mac's assets and liabilities change for a given change in interest rates. Because this analysis evaluates the impact of interest rate movements on the value of all future cash flows, this measure provides an evaluation of Farmer Mac's long-term interest rate risk.

Farmer Mac's NES simulation represents the difference between projected income from interest-earning assets and interest expense produced by the related funding, including associated derivatives. Farmer Mac's NES may be affected by changes in market interest rates resulting from timing differences between maturities and re-pricing characteristics of assets and liabilities. The direction and magnitude of any such effect depends on the direction and magnitude of the change in interest rates as well as the composition of Farmer Mac's portfolio. The NES forecast represents an estimate of the net effective spread income that Farmer Mac's current portfolio is expected to produce over a twelve-month horizon. As a result, NES sensitivity statistics provide a short-term view of Farmer Mac's interest rate sensitivity.

Duration is a measure of a financial instrument's sensitivity to small changes in interest rates. Duration gap is the difference between the estimated durations of Farmer Mac's assets and liabilities. Because duration is a measure of market value sensitivity, duration gap summarizes the extent to which estimated market value sensitivities for assets and liabilities are matched. Duration gap provides a relatively concise measure of the interest rate risk inherent in Farmer Mac's outstanding portfolio.

A positive duration gap denotes that the duration of Farmer Mac's assets is greater than the duration of its liabilities. A positive duration gap indicates that the market value of Farmer Mac's assets is more sensitive to small interest rate movements than is the market value of its liabilities. Conversely, a negative duration gap indicates that Farmer Mac's assets are less sensitive to small interest rate movements than are its liabilities.

Each of the metrics is produced using asset/liability models and is derived based on management's best estimates of factors such as projected interest rates, interest rate volatility, and prepayment speeds. Accordingly, these metrics should be understood as estimates rather than as precise measurements. Actual results may differ to the extent there are material changes to Farmer Mac's portfolio or changes in strategies undertaken to mitigate unfavorable sensitivities to interest rate changes.

The following schedule summarizes the results of Farmer Mac's MVE and NES sensitivity analysis as of September 30, 2019 and December 31, 2018 to an immediate and instantaneous uniform or "parallel" shift in the yield curve:

Table 21

Interest Rate Scenario	Percentage Change in MVE from Base Case	
	As of September 30, 2019	As of December 31, 2018
+100 basis points	3.0 %	(0.7)%
-100 basis points	(8.6)%	(5.9)%

Interest Rate Scenario	Percentage Change in NES from Base Case	
	As of September 30, 2019	As of December 31, 2018
+100 basis points	2.8 %	3.0 %
-100 basis points	(0.5)%	(3.0)%

As of September 30, 2019, Farmer Mac's effective duration gap was negative 2.2 months, compared to negative 0.8 months as of December 31, 2018. Interest rates decreased during 2019. This rate movement reduced the duration of Farmer Mac's assets relative to its liabilities, thereby widening Farmer Mac's duration gap.

Financial Derivatives Transactions

The economic effects of financial derivatives are included in Farmer Mac's MVE, NES, and duration gap analyses. Farmer Mac enters into the following financial derivative transactions principally to protect against risk from the effects of market price or interest rate movements on the value of assets, future cash flows, credit exposure, and debt issuance, not for trading or speculative purposes:

- "pay-fixed" interest rate swaps, in which Farmer Mac pays fixed rates of interest to, and receives floating rates of interest from, counterparties;
- "receive-fixed" interest rate swaps, in which Farmer Mac receives fixed rates of interest from, and pays floating rates of interest to, counterparties; and
- "basis swaps," in which Farmer Mac pays variable rates of interest based on one index to, and receives variable rates of interest based on another index from, counterparties.

As of September 30, 2019, Farmer Mac had \$13.8 billion combined notional amount of interest rate swaps, with terms ranging from less than one year to thirty years, of which \$5.7 billion were pay-fixed interest rate swaps, \$5.3 billion were receive-fixed interest rate swaps, and \$2.8 billion were basis swaps.

Farmer Mac enters into interest rate swap contracts to synthetically adjust the characteristics of its debt to match more closely the cash flow and duration characteristics of its loans and other assets, thereby reducing interest rate risk and often deriving an overall lower effective cost of borrowing than would otherwise be available to Farmer Mac in the conventional debt market. Specifically, interest rate swaps synthetically convert the variable cash flows related to the forecasted issuance of short-term debt into effectively fixed rate medium-term notes that match the anticipated duration and interest rate characteristics of the corresponding assets. Farmer Mac evaluates the overall cost of using the swap market as a funding alternative and uses interest rate swaps to manage specific interest rate risks for specific transactions. Certain financial derivatives are designated as fair value hedges of fixed rate assets

classified as available for sale or liabilities to protect against fair value changes in the assets or liabilities related to a benchmark interest rate (e.g., LIBOR). Furthermore, certain financial derivatives are designated as cash flow hedges to mitigate the volatility of future interest rate payments on floating rate debt.

As discussed in Note 4 to the consolidated financial statements, all financial derivatives are recorded on the balance sheet at fair value as derivative assets or as derivative liabilities. Changes in the fair values of financial derivatives are reported in "(Losses)/gains on financial derivatives" 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 related to the risk being hedged are reported in "Net interest income" in the consolidated statements of operations. Interest accruals on derivatives designated in fair value hedge relationships are also recorded in "Net interest income" in the consolidated statements of operations. For financial derivatives designated in cash flow hedge accounting relationships, the unrealized gain or loss on the derivative is recorded in other comprehensive income. 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. All of Farmer Mac's financial derivatives transactions are conducted under standard collateralized agreements that limit Farmer Mac's potential credit exposure to any counterparty. As of September 30, 2019, Farmer Mac had \$257,000 of uncollateralized net exposures to two counterparties. As of December 31, 2018, Farmer Mac had uncollateralized net exposures of \$1.4 million to three counterparties.

Basis Risk

In addition to being exposed to the risk of asset and liability cash flow mismatches, Farmer Mac is exposed to the risk related to changes in its cost of funds relative to floating rate market indexes (such as LIBOR) on some of the floating rate assets it holds. This exposure is referred to as "basis risk." Some of Farmer Mac's floating rate assets reset on rate adjustment dates based on a floating rate market index, while the related debt that Farmer Mac issued to fund those assets until their maturities may be refinanced based on Farmer Mac's cost of funds at a particular time. Basis risk arises from the potential variability between the rates at which those floating rate assets reset and the rates at which Farmer Mac can issue debt to fund those assets. Farmer Mac can fund these floating rate assets in several ways, including:

- issuing short-term discount notes with maturities that match the reset period of the assets;
- issuing floating rate medium-term notes with maturities that match the maturities of the assets;
- issuing non-maturity matched, floating rate medium-term notes; or
- issuing non-maturity matched, fixed-rate discount notes or medium-term notes swapped to match the interest rate reset dates of the assets as an alternative source of effectively floating rate funding.

Farmer Mac primarily uses the last two options in the list above to fund floating rate assets because these options generally provide a lower cost of funding while generating an effective interest rate match. As funding for these floating rate assets matures, Farmer Mac seeks to refinance the debt associated with these assets in a similar fashion to achieve an appropriate interest rate match for the remaining life of the assets. However, for example, if the rates on Farmer Mac's discount notes or medium-term notes deteriorate relative to LIBOR during the time between when these floating rate assets were first funded and when Farmer Mac refinances the associated debt, Farmer Mac is exposed to a commensurate reduction in its net effective spread on the associated assets. Conversely, if the rates on Farmer Mac's

discount notes or medium-term notes improve relative to LIBOR during that time, Farmer Mac would benefit from a commensurate increase in its net effective spread on those assets.

Farmer Mac is also subject to basis risk on some of its fixed rate assets as a result of its use of pay-fixed interest rate swaps, combined with a series of discount note or medium-term note issuances, as an alternative source of effectively fixed rate funding. This risk arises because the rates at which Farmer Mac refinances its funding for some fixed rate assets through the issuance of discount notes or medium-term notes may vary from the agreed-upon rates based on the floating rate market index received by Farmer Mac on the associated swaps. In these cases, for example, if the rates on Farmer Mac's discount notes or medium-term notes were to deteriorate relative to LIBOR, Farmer Mac would be exposed to a commensurate reduction in its net interest income and net effective spread. Conversely, if the rates on Farmer Mac's discount notes or medium-term notes were to improve relative to LIBOR, Farmer Mac would benefit from a commensurate increase in its net interest income and net effective spread.

To mitigate this basis risk, Farmer Mac seeks to issue debt of sufficient maturity to reduce the frequency of required refinancing of that debt over the life of the associated asset. As of September 30, 2019, Farmer Mac held \$6.4 billion of floating rate assets in its lines of business and its investment portfolio that reset based on floating rate market indexes, primarily one-month and three-month LIBOR. As of the same date, Farmer Mac also had \$5.7 billion of interest rate swaps outstanding where Farmer Mac pays a fixed rate of interest and receives a floating rate of interest.

For the first nine months of 2018, funding costs relative to LIBOR were at levels generally more favorable than Farmer Mac's historical experience. Throughout 2019, these levels had deteriorated to levels less favorable than Farmer Mac's historical experience. Farmer Mac adjusts its funding strategies to mitigate the effects of this variability from time to time and seeks to maintain an effective funding cost.

Discontinuation of LIBOR

As described in "Risk Factors—Market Risk" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019, Farmer Mac faces risks associated with the reform, replacement, or discontinuation of the LIBOR benchmark interest rate and the transition to an alternative benchmark interest rate. We are currently evaluating the potential effect on our business of the replacement of the LIBOR benchmark interest rate, including the possibility of the Secured Overnight Financing Rate ("SOFR") as a dominant replacement. As of September 30, 2019, Farmer Mac held \$5.2 billion of floating rate assets in its lines of business and its investment portfolio, \$4.2 billion of floating rate debt, and \$13.6 billion notional amount of interest rate swaps, each of which reset based on LIBOR. The market transition away from LIBOR and towards SOFR, or any other alternative benchmark interest rate that may be developed, is expected to be complicated and require significant work, possibly requiring the development of term and credit adjustments to accommodate for differences between the benchmark interest rates. The transition may also result in different financial performance for previously booked transactions, require different hedging strategies, or require renegotiation of previously booked transactions. During the first nine months of 2019, we issued \$755 million in SOFR-based medium-term notes.

Liquidity and Capital Resources

Farmer Mac's primary sources of funds to meet its liquidity and funding needs are the proceeds of its debt issuances, guarantee and commitment fees, net effective spread, loan repayments, and maturities of

AgVantage securities. Farmer Mac regularly accesses the capital markets for funding, and Farmer Mac has maintained access to the capital markets at favorable rates throughout 2018 and 2019. Farmer Mac funds its purchases of eligible loan assets, USDA Securities, Farmer Mac Guaranteed Securities, and investment assets and finances its operations primarily by issuing debt obligations of various maturities in the public capital markets. As of September 30, 2019, Farmer Mac had outstanding discount notes of \$2.2 billion, medium-term notes that mature within one year of \$7.7 billion, and medium-term notes that mature after one year of \$8.9 billion. Farmer Mac's Board of Directors has authorized the issuance of up to \$20.0 billion of discount notes and medium-term notes, of which \$18.8 billion was outstanding as of September 30, 2019.

Assuming continued access to the capital markets, Farmer Mac believes it has sufficient liquidity and capital resources to support its operations for the next 12 months and for the foreseeable future. Farmer Mac also has a liquidity contingency plan to manage unanticipated disruptions in its access to the capital markets. That plan involves borrowing through repurchase agreement arrangements and the sale of liquid assets. Farmer Mac must maintain a minimum of 90 days of liquidity under its liquidity and investment regulations. Under the methodology for calculating available days of liquidity prescribed by those regulations, Farmer Mac maintained an average of 186 days of liquidity during third quarter 2019 and had 199 days of liquidity as of September 30, 2019.

Farmer Mac maintains cash, cash equivalents (including U.S. Treasury securities and other short-term money market instruments), and other investment securities that can be drawn upon for liquidity needs. The following table presents these assets as of September 30, 2019 and December 31, 2018:

Table 22

	<u>As of September 30, 2019</u>	<u>As of December 31, 2018</u>
	<i>(in thousands)</i>	
Cash and cash equivalents	\$ 587,941	\$ 425,256
Investment securities:		
Guaranteed by U.S. Government and its agencies	1,999,920	1,216,911
Guaranteed by GSEs	1,125,026	1,013,281
Asset-backed securities	31,718	32,692
Total	<u>\$ 3,744,605</u>	<u>\$ 2,688,140</u>

The increase in the investment portfolio since December 31, 2018 was to provide liquidity to support program asset growth and due to the early reinvestment of maturing U.S. Treasury Securities.

Capital Requirements. Farmer Mac is subject to the following statutory capital requirements – minimum, critical, and risk-based. Farmer Mac must comply with the higher of the minimum capital requirement and the risk-based capital requirement. As of September 30, 2019, Farmer Mac was in compliance with its statutory capital requirements and was classified as within "level I" (the highest compliance level).

In accordance with FCA's rule on capital planning, Farmer Mac's Board of Directors 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). That policy restricts Tier 1-eligible dividends and any discretionary bonus payments if Tier 1 capital falls below specified thresholds. As of September 30, 2019 and December 31, 2018, Farmer Mac's Tier 1 capital ratio was 13.2% and 13.4%, respectively. The decrease in our Tier 1 capital ratio was due to the fact that growth in risk-weighted assets outpaced capital

growth during the first nine months of 2019. As of September 30, 2019, Farmer Mac was in compliance with its capital adequacy policy.

For more information about the capital requirements applicable to Farmer Mac, its capital adequacy policy, and FCA's rule on capital planning, see Note 9 to the consolidated financial statements and "Business—Government Regulation of Farmer Mac—Capital Standards" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019 for more information on the capital requirements applicable to Farmer Mac.

Regulatory Matters

The Agricultural Improvement Act of 2018, known as the "Farm Bill," was signed into law on December 20, 2018 and contains provisions that affect Farmer Mac, as discussed in more detail in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Regulatory Matters" in Farmer Mac's Annual Report on Form 10-K for the fiscal period ended December 31, 2018 filed with the SEC on February 21, 2019. The Farm Bill requires FCA to prepare a study with two components related to Farmer Mac: (1) an analysis and comparison of the financial risks inherent in loans made, held, securitized, or purchased by Farm Credit System ("FCS") banks and associations and Farmer Mac, and how those risks are required to be capitalized under statutes and regulations currently in effect; and (2) an assessment of the feasibility of an increase to the acreage limitation applicable to Farmer Mac's maximum loan size that includes FCA's opinion on alternatives other than the current acreage limitation to adequately address any safety and soundness issues. FCA submitted its assessment to Congress on June 18, 2019.

In the first component of the study, FCA analyzed the loan risk and capital requirements of Farmer Mac compared to FCS banks and associations. FCA concluded that "compared with the System, Farmer Mac has a significantly lower risk profile from a total portfolio perspective" (footnote omitted explaining statistical significance) and that "[t]his difference in the two GSEs' risk profiles is appropriate given their differing statutory authorities, business models, and large proportions of volume in lines of business that the other is not engaged in." In comparing capital requirements, FCA concluded that "[t]here are important differences in capital requirements that are driven by the two GSEs' differing statutory purposes, lending authorities, and asset composition, among other factors"; that Farmer Mac's Basel approach was "appropriate for Farmer Mac's unique rural-focused secondary market business model and the product mix in its program portfolio"; and that "[d]ifferences in authorities, business mode[ls], and business practices, as well as the magnitude of those differences as measured by credit metrics, support the GSEs' differing capital requirements, both statutory and regulatory." Overall, FCA noted that "the major differences between the two GSEs' statutory authorities, business models, and portfolio contents result in different risk profiles"; that "the practical reality of both GSEs' capital requirements is that they generally follow the Basel framework"; and that "both GSEs' capital provisions make appropriate adjustments to the Basel framework consistent with the differences in their business models and risk profiles."

In the second component of the study, FCA concluded that increasing the acreage exception from 1,000 to 2,000 acres is feasible, would not raise any safety and soundness concerns, and would provide additional farming operations unconstrained access to Farmer Mac's secondary market. Accordingly, the acreage exception will increase to 2,000 acres on June 18, 2020, meaning that the statutory loan amount limitation will not apply to Farm & Ranch loans secured by 2,000 acres of agricultural real estate or less. Farmer Mac will continue to evaluate this future increase in the acreage limitation to determine the potential benefits to Farmer Mac's customers and the related effects on our business.

Consistent with Congress' guidance in the 2018 Farm Bill Conference Report, FCA also examined alternatives to the acreage rule (whether 1,000 or 2,000 acres). FCA concluded that the acreage rule does not result in Farmer Mac safety and soundness protections and considered alternatives focused on the risk of exposure concentrations in individual borrowers. FCA's report recommends that Congress direct FCA to use its regulatory authorities to establish exposure concentration limits to replace both the dollar limit and the acreage exception to the limit in Farmer Mac's charter.

Other Matters

Common Stock Dividends. For first, second, and third quarter 2019, Farmer Mac paid a quarterly dividend of \$0.70 per share on all classes of its common stock. For each quarter in 2018, Farmer Mac paid a quarterly dividend of \$0.58 per share on all classes of its common stock. Farmer Mac's ability to declare and pay dividends on common stock could be restricted if it fails to comply with applicable capital requirements. See "Business—Government Regulation of Farmer Mac—Capital Standards—Enforcement Levels" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 21, 2019.

Preferred Stock Dividends. For the first and second quarters 2019 and for each quarter of 2018, Farmer Mac paid the following quarterly dividends on its outstanding preferred stock:

- \$0.3672 per share on its 5.875% Non-Cumulative Preferred Stock, Series A;
- \$0.4297 per share on its 6.875% Non-Cumulative Preferred Stock, Series B; and
- \$0.3750 per share on its 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C.

For second quarter 2019, Farmer Mac also paid \$0.2626 per share on the Series B Preferred Stock for the period from but not including April 17, 2019 to and including the June 12, 2019 redemption date.

For the third quarter 2019, Farmer Mac paid the following quarterly dividends on its outstanding preferred stock:

- \$0.3672 per share on its 5.875% Non-Cumulative Preferred Stock, Series A;
- \$0.3750 per share on its 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C; and
- \$0.35625 per share on its 5.700% Non-Cumulative Preferred Stock, Series D.

Supplemental Information

The following tables present quarterly and annual information about new business volume, repayments, and outstanding business volume:

Table 23

	New Business Volume						
	Farm & Ranch		USDA Guarantees	Rural Utilities		Institutional Credit	Total
	Loans	LTSPCs	USDA Securities	Loans	LTSPCs	AgVantage	
<i>(in thousands)</i>							
For the quarter ended:							
September 30, 2019	\$ 309,805	\$ 125,022	\$ 113,664	\$ 117,279	\$ —	\$ 402,611	\$ 1,068,381
June 30, 2019	248,152	57,321	118,335	105,000	—	659,447	1,188,255
March 31, 2019	203,156	91,215	57,223	546,198	—	825,417	1,723,209
December 31, 2018	285,008	80,840	90,297	3,000	—	585,814	1,044,959
September 30, 2018	192,628	64,100	116,339	—	—	1,085,953	1,459,020
June 30, 2018	224,101	126,066	129,960	—	—	825,203	1,305,330
March 31, 2018	259,111	159,065	123,525	8,645	—	813,337	1,363,683
December 31, 2017	204,917	282,809	100,024	15,000	—	234,753	837,503
September 30, 2017	298,274	102,774	131,298	70,000	—	290,995	893,341
For the year ended:							
December 31, 2018	960,848	430,071	460,121	11,645	—	3,310,307	5,172,992
December 31, 2017	1,129,545	554,743	531,684	137,341	—	2,383,912	4,737,225

Table 24

Repayments of Assets by Line of Business

	Repayments of Assets by Line of Business							Total
	Farm & Ranch			USDA Guarantees	Rural Utilities		Institutional Credit	
	Loans	Guaranteed Securities	LTSPCs	USDA Securities	Loans	LTSPCs	AgVantage	
	<i>(in thousands)</i>							
For the quarter ended:								
Scheduled	\$ 97,421	\$ 3,095	\$ 22,713	\$ 27,853	\$ 31,656	\$ 8,692	\$ 441,575	\$ 633,005
Unscheduled	129,676	2,663	76,883	39,442	—	—	1,088	249,752
September 30, 2019	<u>\$ 227,097</u>	<u>\$ 5,758</u>	<u>\$ 99,596</u>	<u>\$ 67,295</u>	<u>\$ 31,656</u>	<u>\$ 8,692</u>	<u>\$ 442,663</u>	<u>\$ 882,757</u>
Scheduled	\$ 39,879	\$ 3,758	\$ 58,779	\$ 38,676	\$ 6,951	\$ 17,092	\$ 612,964	\$ 778,099
Unscheduled	64,912	3,399	58,979	43,044	—	—	—	170,334
June 30, 2019	<u>\$ 104,791</u>	<u>\$ 7,157</u>	<u>\$ 117,758</u>	<u>\$ 81,720</u>	<u>\$ 6,951</u>	<u>\$ 17,092</u>	<u>\$ 612,964</u>	<u>\$ 948,433</u>
Scheduled	\$ 112,973	\$ 5,843	\$ 74,054	\$ 41,266	\$ 31,492	\$ 7,660	\$ 470,812	\$ 744,100
Unscheduled	67,608	1,798	50,482	46,798	24,448	—	5,587	196,721
March 31, 2019	<u>\$ 180,581</u>	<u>\$ 7,641</u>	<u>\$ 124,536</u>	<u>\$ 88,064</u>	<u>\$ 55,940</u>	<u>\$ 7,660</u>	<u>\$ 476,399</u>	<u>\$ 940,821</u>
Scheduled	\$ 36,006	\$ 8,331	\$ 35,682	\$ 24,793	\$ 6,321	\$ 16,062	\$ 568,277	\$ 695,472
Unscheduled	56,299	9,257	33,319	21,135	20,538	—	—	140,548
December 31, 2018	<u>\$ 92,305</u>	<u>\$ 17,588</u>	<u>\$ 69,001</u>	<u>\$ 45,928</u>	<u>\$ 26,859</u>	<u>\$ 16,062</u>	<u>\$ 568,277</u>	<u>\$ 836,020</u>
Scheduled	\$ 73,476	\$ 5,677	\$ 21,742	\$ 28,135	\$ 25,640	\$ 8,286	\$ 1,102,798	\$ 1,265,754
Unscheduled	77,492	4,562	47,159	35,068	3,476	—	9,760	177,517
September 30, 2018	<u>\$ 150,968</u>	<u>\$ 10,239</u>	<u>\$ 68,901</u>	<u>\$ 63,203</u>	<u>\$ 29,116</u>	<u>\$ 8,286</u>	<u>\$ 1,112,558</u>	<u>\$ 1,443,271</u>
Scheduled	\$ 33,075	\$ 8,391	\$ 31,067	\$ 36,983	\$ 353	\$ 8,699	\$ 759,223	\$ 877,791
Unscheduled	86,426	8,273	69,539	66,601	51,306	—	—	282,145
June 30, 2018	<u>\$ 119,501</u>	<u>\$ 16,664</u>	<u>\$ 100,606</u>	<u>\$ 103,584</u>	<u>\$ 51,659</u>	<u>\$ 8,699</u>	<u>\$ 759,223</u>	<u>\$ 1,159,936</u>
Scheduled	\$ 110,733	\$ 14,085	\$ 70,057	\$ 40,811	\$ 26,507	\$ —	\$ 392,310	\$ 654,503
Unscheduled	73,502	4,929	81,204	43,189	14,952	120,022	—	337,798
March 31, 2018	<u>\$ 184,235</u>	<u>\$ 19,014</u>	<u>\$ 151,261</u>	<u>\$ 84,000</u>	<u>\$ 41,459</u>	<u>\$ 120,022</u>	<u>\$ 392,310</u>	<u>\$ 992,301</u>
Scheduled	\$ 25,848	\$ 14,371	\$ 36,806	\$ 22,381	\$ 315	\$ 13,621	\$ 231,717	\$ 345,059
Unscheduled	49,229	6,941	43,975	24,385	4,876	—	—	129,406
December 31, 2017	<u>\$ 75,077</u>	<u>\$ 21,312</u>	<u>\$ 80,781</u>	<u>\$ 46,766</u>	<u>\$ 5,191</u>	<u>\$ 13,621</u>	<u>\$ 231,717</u>	<u>\$ 474,465</u>
Scheduled	\$ 61,961	\$ 6,735	\$ 21,409	\$ 24,163	\$ 27,191	\$ 39,816	\$ 100,571	\$ 281,846
Unscheduled	49,894	5,861	124,676	45,192	457	—	—	226,080
September 30, 2017	<u>\$ 111,855</u>	<u>\$ 12,596</u>	<u>\$ 146,085</u>	<u>\$ 69,355</u>	<u>\$ 27,648</u>	<u>\$ 39,816</u>	<u>\$ 100,571</u>	<u>\$ 507,926</u>
For the year ended:								
Scheduled	\$ 253,290	\$ 36,484	\$ 158,548	\$ 130,722	\$ 58,821	\$ 33,047	\$ 2,822,608	\$ 3,493,520
Unscheduled	293,719	27,021	231,221	165,993	90,272	120,022	9,760	938,008
December 31, 2018	<u>\$ 547,009</u>	<u>\$ 63,505</u>	<u>\$ 389,769</u>	<u>\$ 296,715</u>	<u>\$ 149,093</u>	<u>\$ 153,069</u>	<u>\$ 2,832,368</u>	<u>\$ 4,431,528</u>
Scheduled	\$ 179,890	\$ 46,406	\$ 148,411	\$ 118,035	\$ 54,415	\$ 72,256	\$ 1,660,661	\$ 2,280,074
Unscheduled	265,376	35,524	280,399	155,810	6,147	—	106,059	849,315
December 31, 2017	<u>\$ 445,266</u>	<u>\$ 81,930</u>	<u>\$ 428,810</u>	<u>\$ 273,845</u>	<u>\$ 60,562</u>	<u>\$ 72,256</u>	<u>\$ 1,766,720</u>	<u>\$ 3,129,389</u>

Table 25

Lines of Business - Outstanding Business Volume

	Farm & Ranch		USDA Guarantees	Rural Utilities		Institutional Credit	Total	
	Loans	Guaranteed Securities	USDA Securities	Loans	LTSPCs	AgVantage		
	<i>(in thousands)</i>							
As of:								
September 30, 2019	\$4,836,966	\$ 115,306	\$2,441,456	\$ 2,567,763	\$ 1,612,773	\$ 619,829	\$ 8,738,266	\$ 20,932,359
June 30, 2019	4,754,258	121,064	2,416,030	2,521,394	1,527,150	628,521	8,778,318	20,746,735
March 31, 2019	4,610,897	128,221	2,476,467	2,484,779	1,429,101	645,613	8,731,835	20,506,913
December 31, 2018	4,588,322	135,862	2,509,787	2,515,620	938,843	653,273	8,382,817	19,724,524
September 30, 2018	4,420,619	287,594	2,363,805	2,471,251	962,702	669,335	8,365,280	19,540,586
June 30, 2018	4,378,958	297,833	2,368,606	2,418,115	991,819	677,621	8,391,885	19,524,837
March 31, 2018	4,274,359	314,497	2,343,146	2,391,739	1,043,477	686,320	8,325,905	19,379,443
December 31, 2017	4,198,733	333,511	2,335,342	2,352,214	1,076,291	806,342	7,904,878	19,007,311
September 30, 2017	4,068,893	354,823	2,133,314	2,298,956	1,066,482	819,963	7,901,842	18,644,273

Table 26

On-Balance Sheet Outstanding Business Volume

	Fixed Rate	5- to 10-Year ARMs & Resets	1-Month to 3-Year ARMs	Total Held in Portfolio
	<i>(in thousands)</i>			
	As of:			
September 30, 2019	\$ 9,642,802	\$ 2,850,000	\$ 4,549,689	\$ 17,042,491
June 30, 2019	9,446,117	2,825,151	4,601,917	16,873,185
March 31, 2019	9,206,082	2,720,639	4,643,506	16,570,227
December 31, 2018	8,325,347	2,717,505	4,705,169	15,748,021
September 30, 2018	7,945,007	2,629,612	4,986,987	15,561,606
June 30, 2018	7,551,149	2,594,399	5,398,021	15,543,569
March 31, 2018	7,507,581	2,498,985	5,432,923	15,439,489
December 31, 2017	7,158,014	2,499,203	5,309,126	14,966,343
September 30, 2017	6,921,477	2,447,923	5,426,757	14,796,157

The following table presents the quarterly net effective spread (a non-GAAP measure) by segment:

Table 27

	Net Effective Spread by Line of Business											
	Farm & Ranch		USDA Guarantees		Rural Utilities		Institutional Credit		Corporate		Net Effective Spread	
	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield
	<i>(dollars in thousands)</i>											
For the quarter ended:												
September 30, 2019 ⁽¹⁾	\$ 13,181	1.66%	\$ 4,314	0.79%	\$ 4,502	1.16%	\$ 17,807	0.84%	\$ 2,657	0.30%	\$ 42,461	0.90%
June 30, 2019	13,335	1.72%	4,097	0.76%	3,996	1.10%	17,371	0.82%	2,556	0.34%	41,355	0.91%
March 31, 2019	12,737	1.70%	3,964	0.74%	3,233	1.12%	16,373	0.79%	2,494	0.35%	38,801	0.89%
December 31, 2018	13,288	1.79%	4,630	0.85%	2,833	1.19%	15,751	0.80%	2,353	0.36%	38,855	0.93%
September 30, 2018 ⁽¹⁾	13,887	1.91%	4,627	0.86%	2,877	1.18%	15,642	0.78%	2,044	0.30%	39,077	0.93%
June 30, 2018	13,347	1.86%	4,398	0.83%	2,923	1.15%	15,220	0.76%	274	0.04%	36,162	0.86%
March 31, 2018	12,540	1.80%	4,400	0.82%	2,950	1.12%	14,824	0.78%	2,387	0.36%	37,101	0.91%
December 31, 2017	12,396	1.80%	4,979	0.93%	3,057	1.14%	14,800	0.78%	2,235	0.35%	37,467	0.93%
September 30, 2017	11,303	1.73%	4,728	0.90%	2,765	1.07%	14,455	0.78%	2,725	0.41%	35,976	0.91%

⁽¹⁾ See Note 9 to the consolidated financial statements for a reconciliation of GAAP net interest income by line of business to net effective spread by line of business for the three months ended September 30, 2019 and 2018.

The following table presents quarterly core earnings (a non-GAAP measure) reconciled to net income attributable to common stockholders:

Table 28

Core Earnings by Quarter End

	September 2019	June 2019	March 2019	December 2018	September 2018	June 2018	March 2018	December 2017	September 2017
Revenues:									
Net effective spread	\$ 42,461	\$ 41,355	\$ 38,801	\$ 38,855	\$ 39,077	\$ 36,162	\$ 37,101	\$ 37,467	\$ 35,976
Guarantee and commitment fees	5,208	5,276	5,419	5,309	5,170	5,171	5,083	5,157	4,935
Other	389	777	509	(129)	110	111	428	69	274
Total revenues	48,058	47,408	44,729	44,035	44,357	41,444	42,612	42,693	41,185
Credit related expense/(income):									
Provision for/(release of) losses	623	420	(393)	166	(3)	582	(410)	464	384
REO operating expenses	—	64	—	—	—	—	16	—	—
Losses/(gains) on sale of REO	—	—	—	—	41	(34)	—	(964)	(32)
Total credit related expense/(income)	623	484	(393)	166	38	548	(394)	(500)	352
Operating expenses:									
Compensation and employee benefits	7,654	6,770	7,606	7,167	6,777	6,936	6,654	5,247	5,987
General and administrative	5,253	4,689	4,596	5,829	4,350	5,202	4,326	4,348	3,890
Regulatory fees	688	687	688	687	625	625	625	625	625
Total operating expenses	13,595	12,146	12,890	13,683	11,752	12,763	11,605	10,220	10,502
Net earnings	33,840	34,778	32,232	30,186	32,567	28,133	31,401	32,973	30,331
Income tax expense	7,018	7,351	6,715	6,431	6,891	5,477	6,259	11,796	10,268
Preferred stock dividends	3,427	3,785	3,296	3,296	3,295	3,296	3,295	3,296	3,295
Core earnings	\$ 23,395	\$ 23,642	\$ 22,221	\$ 20,459	\$ 22,381	\$ 19,360	\$ 21,847	\$ 17,881	\$ 16,768
Reconciling items:									
(Losses)/gains on undesignated financial derivatives due to fair value changes	(7,117)	10,485	2,240	(96)	3,625	6,709	(2,279)	(261)	995
(Losses)/gains on hedging activities due to fair value changes	(4,535)	(1,438)	(2,817)	(853)	1,051	1,687	2,564	(3)	1,742
Unrealized gains/(losses) on trading assets	49	61	44	57	(3)	11	16	60	—
Amortization of premiums/ discounts and deferred gains on assets consolidated at fair value	(7)	(139)	(16)	67	(38)	196	(686)	(129)	(954)
Net effects of terminations or net settlements on financial derivatives	232	(592)	110	(312)	546	232	1,242	632	862
Issuance costs on the retirement of preferred stock	—	(1,956)	—	—	—	—	—	—	—
Re-measurement of net deferred tax asset due to enactment of new tax legislation	—	—	—	—	—	—	—	(1,365)	—
Income tax effect related to reconciling items	2,389	(1,759)	92	238	(1,088)	(1,855)	(180)	(105)	(926)
Net income attributable to common stockholders	\$ 14,406	\$ 28,304	\$ 21,874	\$ 19,560	\$ 26,474	\$ 26,340	\$ 22,524	\$ 16,710	\$ 18,487

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Farmer Mac is exposed to market risk from changes in interest rates. Farmer Mac manages this market risk by entering into various financial transactions, including financial derivatives, and by monitoring and measuring its exposure to changes in interest rates. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Interest Rate Risk" for more information about Farmer Mac's exposure to interest rate risk and its strategies to manage that risk. For information about Farmer Mac's use of financial derivatives and related accounting policies, see Note 4 to the consolidated financial statements.

Item 4. Controls and Procedures

Management's Evaluation of Disclosure Controls and Procedures. Farmer Mac maintains disclosure controls and procedures designed to ensure that information required to be disclosed in its periodic filings under the Securities Exchange Act of 1934 (the "Exchange Act"), including this Quarterly Report on Form 10-Q, is recorded, processed, summarized, and reported on a timely basis. These disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed under the Exchange Act is accumulated and communicated to Farmer Mac's management on a timely basis to allow decisions about required disclosure. Management, including Farmer Mac's principal executive officer and principal financial officer, has evaluated the effectiveness of the design and operation of Farmer Mac's disclosure controls and procedures (as defined under Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of September 30, 2019.

Farmer Mac carried out the evaluation of the effectiveness of its disclosure controls and procedures, required by paragraph (b) of Exchange Act Rules 13a-15 and 15d-15, under the supervision and with the participation of management, including the principal executive officer and principal financial officer. Based upon this evaluation, the principal executive officer and principal financial officer concluded that Farmer Mac's disclosure controls and procedures were effective as of September 30, 2019.

Changes in Internal Control Over Financial Reporting. There were no changes in Farmer Mac's internal control over financial reporting during the three months ended September 30, 2019 that have materially affected, or are reasonably likely to materially affect, Farmer Mac's internal control over financial reporting.

PART II

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

There were no material changes from the risk factors previously disclosed in Farmer Mac's Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on February 21, 2019.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a) Farmer Mac is a federally chartered instrumentality of the United States whose debt and equity securities are exempt from registration under Section 3(a)(2) of the Securities Act of 1933. During third quarter 2019, the following transactions occurred related to Farmer Mac's equity securities that were not registered under the Securities Act of 1933 and were not otherwise reported on a Current Report on Form 8-K:

Class C Non-Voting Common Stock. Under Farmer Mac's policy that permits directors of Farmer Mac to elect to receive shares of Class C non-voting common stock in lieu of their cash retainers, Farmer Mac issued an aggregate of 261 shares of its Class C non-voting common stock on July 3, 2019 to the four directors who elected to receive stock in lieu of their cash retainers. Farmer Mac calculated the number of shares issued to the directors based on a price of \$72.66 per share, which was the closing price of the Class C non-voting common stock on June 28, 2019 (the last trading day of the previous quarter) as reported by the New York Stock Exchange.

(b) Not applicable.

(c) None.

Item 3. Defaults Upon Senior Securities

(a) None.

(b) None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

(a) None.

(b) None.

Item 6. Exhibits

*	3.1	—	Title VIII of the Farm Credit Act of 1971, as most recently amended by the Agricultural Improvement Act of 2018 (Previously filed as Exhibit 3.1 to Form 10-K filed February 21, 2019).
*	3.2	—	Amended and Restated By-Laws of the Registrant (Previously filed as Exhibit 3.1 to Form 8-K filed May 9, 2019).
*	4.1	—	Specimen Certificate for Farmer Mac Class A Voting Common Stock (Previously filed as Exhibit 4.1 to Form 10-Q filed May 15, 2003).
*	4.2	—	Specimen Certificate for Farmer Mac Class B Voting Common Stock (Previously filed as Exhibit 4.2 to Form 10-Q filed May 15, 2003).
*	4.3	—	Specimen Certificate for Farmer Mac Class C Non-Voting Common Stock (Previously filed as Exhibit 4.3 to Form 10-Q filed May 15, 2003).
*	4.4	—	Specimen Certificate for 5.875% Non-Cumulative Preferred Stock, Series A (Previously filed as Exhibit 4.4.1 to Form 10-Q filed May 9, 2013).
*	4.4.1	—	Certificate of Designation of Terms and Conditions of 5.875% Non-Cumulative Preferred Stock, Series A (Previously filed as Exhibit 4.1 to Form 8-A filed January 17, 2013).
*	4.5	—	Specimen Certificate for 6.875% Non-Cumulative Preferred Stock, Series B (Previously filed as Exhibit 4.5 to Form 10-Q filed May 12, 2014).
*	4.5.1	—	Certificate of Designation of Terms and Conditions of 6.875% Non-Cumulative Preferred Stock, Series B (Previously filed as Exhibit 4.1 to Form 8-A filed March 25, 2014).
*	4.6	—	Specimen Certificate for 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C (Previously filed as Exhibit 4.6 to Form 10-Q filed August 11, 2014).
*	4.6.1	—	Certificate of Designation of Terms and Conditions of 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C (Previously filed as Exhibit 4.1 to Form 8-A filed June 20, 2014).
*	4.7	—	Specimen Certificate for 5.700% Non-Cumulative Preferred Stock, Series D (Previously filed as Exhibit 4.7 to Form 10-Q filed August 1, 2019).
*	4.7.1	—	Certificate of Designation of Terms and Conditions of 5.700% Non-Cumulative Preferred Stock, Series D (Previously filed as Exhibit 4.1 to Form 8-A filed May 13, 2019).
*	10.1	—	Loan Participation Servicing Agreement between National Rural Utilities Cooperative Finance Corporation, National Cooperative Services Corporation, and the Registrant, dated as of September 26, 2019 (Previously filed as Exhibit 10 to Form 8-K filed October 09, 2019).
**	31.1	—	Certification of Registrant's principal executive officer relating to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
**	31.2	—	Certification of Registrant's principal financial officer relating to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
**	32	—	Certification of Registrant's principal executive officer and principal financial officer relating to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
**	101.INS	—	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
**	101.SCH	—	Inline XBRL Taxonomy Extension Schema
**	101.CAL	—	Inline XBRL Taxonomy Extension Calculation
**	101.DEF	—	Inline XBRL Taxonomy Extension Definition
**	101.LAB	—	Inline XBRL Taxonomy Extension Label
**	101.PRE	—	Inline XBRL Taxonomy Extension Presentation
**	104	—	Cover Page Inline Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document included as Exhibit 101

* Incorporated by reference to the indicated prior filing.

** Filed with this report.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

FEDERAL AGRICULTURAL MORTGAGE CORPORATION

/s/ Bradford T. Nordholm

November 6, 2019

By: Bradford T. Nordholm
President and Chief Executive Officer
(Principal Executive Officer)

Date

/s/ Gregory N. Ramsey

November 6, 2019

By: Gregory N. Ramsey
Vice President – Controller
(Principal Financial Officer)

Date