As filed with the Securities and Exchange Commission on November 9, 2020

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, 2020
Commission File Number 001-14951

FARMER MAC

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)
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
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
5.750% Non-Cumulative Preferred Stock, Series E	AGM.PRE	New York Stock Exchange
5.250% Non-Cumulative Preferred Stock, Series F	AGM.PRF	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: Class B voting common stock

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

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

Yes ☒ No ☐

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

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

Yes ☐ No ☒

As of November 2, 2020, the registrant had outstanding 1,030,780 shares of Class A voting common stock, 500,301 shares of Class B voting common stock, and 9,204,911 shares of Class C non-voting common stock.

Table of Contents

PART I

Item 1. Financial Statements

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

	As of	
	September 30, 2020	December 31, 2019
	(in thousands)	
Assets:		
Cash and cash equivalents	$ 910,592	$ 604,381
Investment securities:		
Available-for-sale, at fair value (amortized cost of $3,522,674 and $2,961,430, respectively)	3,532,190	2,959,843
Held-to-maturity, at amortized cost	45,032	45,032
Total Investment Securities	3,577,222	3,004,875
Farmer Mac Guaranteed Securities:		
Available-for-sale, at fair value (amortized cost of $7,150,606 and $7,016,971, respectively)	7,511,638	7,143,025
Held-to-maturity, at amortized cost	1,200,570	1,447,451
Total Farmer Mac Guaranteed Securities	8,712,208	8,590,476
USDA Securities:		
Trading, at fair value	6,830	8,913
Held-to-maturity, at amortized cost	2,410,848	2,232,160
Total USDA Securities	2,417,678	2,241,073
Loans:		
Loans held for sale, at lower of cost or fair value	20,000	—
Loans held for investment, at amortized cost	6,825,061	5,390,977
Loans held for investment in consolidated trusts, at amortized cost	1,276,407	1,600,917
Allowance for losses	(15,821)	(10,454)
Total loans, net of allowance	8,105,647	6,981,440
Financial derivatives, at fair value	12,837	10,519
Interest receivable (includes $11,525 and $20,568, respectively, related to consolidated trusts)	153,170	199,195
Guarantee and commitment fees receivable	36,664	38,442
Deferred tax asset, net	29,288	16,510
Prepaid expenses and other assets	43,531	22,463
Total Assets	$ 23,998,837	$ 21,709,374
Liabilities and Equity:		
Liabilities:		
Notes payable	21,589,285	19,098,648
Debt securities of consolidated trusts held by third parties	1,292,416	1,616,504
Financial derivatives, at fair value	37,357	27,042
Accrued interest payable (includes $9,353 and $18,018, respectively, related to consolidated trusts)	92,648	106,959
Guarantee and commitment obligation	35,140	36,700
Accounts payable and accrued expenses	18,078	22,081
Reserve for losses	3,568	2,164
Total Liabilities	23,068,492	20,910,098
Commitments and Contingencies (Note 6)		
Equity:		
Preferred stock:		
Series A, par value $25 per share, 2,400,000 shares authorized, issued and outstanding as of December 31, 2019 (redemption value $60,000,000)	—	58,333
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	96,659
Series E, par value $25 per share, 3,180,000 shares authorized, issued and outstanding	77,003	—
Series F, par value $25 per share, 4,800,000 shares authorized, issued and outstanding	116,160	—
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, 9,204,724 shares and 9,180,744 shares outstanding, respectively	9,205	9,181
Additional paid-in capital	121,525	119,304
Accumulated other comprehensive loss, net of tax	(53,837)	(16,161)
Retained earnings	488,717	457,047
Total Equity	930,345	799,276
Total Liabilities and Equity	$ 23,998,837	$ 21,709,374

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, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	(in thousands, except per share amounts)			
Interest income:				
Investments and cash equivalents	$ 7,096	$ 22,855	$ 35,236	$ 61,718
Farmer Mac Guaranteed Securities and USDA Securities	45,335	81,649	178,644	252,629
Loans	56,204	56,992	172,230	167,792
Total interest income	108,635	161,496	386,110	482,139
Total interest expense	63,974	121,384	251,789	358,374
Net interest income	44,661	40,112	134,321	123,765
Provision for losses	(653)	(760)	(4,542)	(1,074)
Net interest income after provision for losses	44,008	39,352	129,779	122,691
Non-interest income/(expense):				
Guarantee and commitment fees	3,159	3,349	9,495	10,265
(Losses)/gains on financial derivatives	(564)	(7,360)	(3,339)	1,193
(Losses)/gains on trading securities	(258)	49	(173)	154
Gains on sale of real estate owned	—	—	485	—
(Provision)/release of reserve for losses	(547)	137	(540)	424
Other income	594	530	2,639	1,378
Non-interest income/(expense)	2,384	(3,295)	8,567	13,414
Operating expenses:				
Compensation and employee benefits	8,791	7,654	27,005	22,030
General and administrative	5,044	5,253	15,702	14,538
Regulatory fees	725	688	2,175	2,063
Real estate owned operating costs, net	—	—	—	64
Operating expenses	14,560	13,595	44,882	38,695
Income before income taxes	31,832	22,462	93,464	97,410
Income tax expense	6,340	4,629	19,516	20,362
Net income	25,492	17,833	73,948	77,048
Preferred stock dividends	(5,166)	(3,427)	(12,536)	(10,508)
Loss on retirement of preferred stock	(1,667)	—	(1,667)	(1,956)
Net income attributable to common stockholders	$ 18,659	$ 14,406	$ 59,745	$ 64,584
Earnings per common share:				
Basic earnings per common share	$ 1.74	$ 1.34	$ 5.57	$ 6.04
Diluted earnings per common share	$ 1.73	$ 1.33	$ 5.54	$ 5.99

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, 2020	September 30, 2019	September 30, 2020	September 30, 2019
			(in thousands)	
Net income	$ 25,492	$ 17,833	$ 73,948	$ 77,048
Other comprehensive income/(loss) before taxes:				
Net unrealized gains/(losses) on available-for-sale securities	47,235	(24,925)	(9,554)	(50,272)
Net changes in held-to-maturity securities	(2,523)	(6,543)	(10,707)	(13,406)
Net unrealized gains/(losses) on cash flow hedges	2,959	(6,736)	(27,429)	(22,373)
Other comprehensive income/(loss) before tax	47,671	(38,204)	(47,690)	(86,051)
Income tax (expense)/benefit related to other comprehensive income/(loss)	(10,011)	8,023	10,014	18,071
Other comprehensive income/(loss) net of tax	37,660	(30,181)	(37,676)	(67,980)
Comprehensive income/(loss)	$ 63,152	$ (12,348)	$ 36,272	$ 9,068

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	Accumulated Other Comprehensive	Retained	Total
	Shares	Amount	Shares	Amount	Capital	Income/(Loss)	Earnings	Equity
					(in thousands)			
Balance as of December 31, 2019	9,400	$ 228,374	10,712	$ 10,712	$ 119,304	$ (16,161)	$ 457,047	$ 799,276
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	—	—	—	—	(2,099)	(2,099)
Balance as of January 1, 2020	9,400	$ 228,374	10,712	$ 10,712	$ 119,304	$ (16,161)	$ 454,948	$ 797,177
Net income	—	—	—	—	—	—	12,830	12,830
Other comprehensive loss, net of tax	—	—	—	—	—	(105,276)	—	(105,276)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,431)	(3,431)
Common stock (cash dividend of $0.80 per share)	—	—	—	—	—	—	(8,571)	(8,571)
Issuance of Class C common stock	—	—	15	15	19	—	—	34
Repurchase of Class C Common Stock	—	—	(4)	(4)	—	—	(231)	(235)
Stock-based compensation cost	—	—	—	—	1,293	—		1,293
Other stock-based award activity	—	—	—	—	(204)	—	—	(204)
Balance as of March 31, 2020	9,400	$ 228,374	10,723	$ 10,723	$ 120,412	$ (121,437)	$ 455,545	$ 693,617
Net income	—	—	—	—	—	—	35,626	35,626
Other comprehensive income, net of tax	—	—	—	—	—	29,940	—	29,940
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(3,939)	(3,939)
Common stock (cash dividend of $0.80 per share)	—	—	—	—	—	—	(8,585)	(8,585)
Issuance of Series E preferred stock	3,180	77,003	—	—	—	—	—	77,003
Issuance of Class C common stock	—	—	10	10	17	—	—	27
Stock-based compensation cost	—	—	—	—	719	—	—	719
Other stock-based award activity	—	—	—	—	(292)	—	—	(292)
Balance as of June 30, 2020	12,580	$ 305,377	10,733	$ 10,733	$ 120,856	$ (91,497)	$ 478,647	$ 824,116
Net income	—	—	—	—	—	—	25,492	25,492
Other comprehensive income, net of tax	—	—	—	—	—	37,660	—	37,660
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(5,166)	(5,166)
Common stock (cash dividend of $0.80 per share)	—	—	—	—	—	—	(8,589)	(8,589)
Issuance of Series F preferred stock	4,800	116,160	—	—	—	—	—	116,160
Redemption of Series A preferred stock	(2,400)	(58,333)	—	—	—	—	—	(58,333)
Loss on retirement of preferred stock	—	—	—	—	—	—	(1,667)	(1,667)
Issuance of Class C common stock	—	—	3	3	8	—	—	11
Stock-based compensation cost	—	—	—	—	753	—	—	753
Other stock-based award activity	—	—	—	—	(92)	—	—	(92)
Balance as of September 30, 2020	14,980	$ 363,204	10,736	$ 10,736	$ 121,525	$ (53,837)	$ 488,717	$ 930,345

	Preferred Stock		Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Retained	Total
	Shares	Amount	Shares	Amount	Capital	Income/(Loss)	Earnings	Equity
					(in thousands)			
Balance as of December 31, 2018	8,400	$ 204,759	10,669	$ 10,669	$ 118,822	$ 24,956	$ 393,351	$ 752,557
Net Income	—	—	—	—	—	—	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	—	—	—	—	—	—	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	—	—	—	—	—	—	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

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, 2020	For the Nine Months Ended September 30, 2019
	(in thousands)	
Cash flows from operating activities:		
Net income	$ 73,948	$ 77,048
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	3,800	(8,032)
Amortization of debt premiums, discounts, and issuance costs	18,502	37,794
Net change in fair value of trading securities, hedged assets, and financial derivatives	(342,380)	(326,537)
Gain on sale of real estate owned	(485)	—
Total provision for allowance for losses	5,083	650
Excess tax benefits related to stock-based awards	(421)	442
Deferred income taxes	(2,763)	637
Stock-based compensation expense	2,765	1,664
Purchases of loans held for sale	(59,150)	—
Proceeds from the sale of loans held for sale	15,000	—
Proceeds from repayment of loans purchased as held for sale	54,661	44,857
Net change in:		
Interest receivable	44,706	21,395
Guarantee and commitment fees receivable	218	(4)
Other assets	(20,169)	1,875
Accrued interest payable	(14,311)	7,597
Other liabilities	(4,412)	2,538
Net cash used in operating activities	(225,408)	(138,076)
Cash flows from investing activities:		
Purchases of available-for-sale investment securities	(2,177,560)	(1,871,957)
Purchases of Farmer Mac Guaranteed Securities and USDA Securities	(1,798,028)	(2,167,801)
Purchases of loans held for investment	(2,245,958)	(1,528,789)
Purchases of defaulted loans	(6,272)	(469)
Proceeds from repayment of available-for-sale investment securities	1,612,075	991,423
Proceeds from repayment of Farmer Mac Guaranteed Securities and USDA Securities	1,725,500	1,746,948
Proceeds from repayment of loans purchased as held for investment	1,272,603	568,280
Proceeds from sale of Farmer Mac Guaranteed Securities	64,612	199,396
Proceeds from sale of real estate owned	2,191	—
Net cash used in investing activities	(1,550,837)	(2,062,969)
Cash flows from financing activities:		
Proceeds from issuance of discount notes	51,936,788	47,036,038
Proceeds from issuance of medium-term notes	10,561,149	7,632,425
Payments to redeem discount notes	(51,785,666)	(46,502,105)
Payments to redeem medium-term notes	(8,293,765)	(5,646,107)
Payments to third parties on debt securities of consolidated trusts	(431,093)	(143,491)
Proceeds from common stock issuance	44	25
Retirement of preferred stock	(60,000)	(75,000)
Proceeds from preferred stock issuance, net of stock issuance costs	193,163	96,659
Tax payments related to share-based awards	(560)	(1,750)
Purchases of common stock	(235)	—
Dividends paid on common and preferred stock	(37,369)	(32,964)
Net cash provided by financing activities	2,082,456	2,363,730
Net change in cash and cash equivalents	306,211	162,685
Cash and cash equivalents at beginning of period	604,381	425,256
Cash and cash equivalents at end of period	$ 910,592	$ 587,941
Non-cash activity:		
Loans acquired and securitized as Farmer Mac Guaranteed Securities	64,612	199,396
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	64,612	141,543
Reclassification of defaulted loans from loans held for investment in consolidated trusts to loans held for investment	42,393	5,392
Reclassification of loans held for sale to loans held for investment	24,150	—
Capitalized interest	937	—
Purchases of securities - traded, not yet settled	—	8,680

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

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, 2019 consolidated balance sheet presented in this report has been derived from Farmer Mac's audited 2019 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 2019 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, 2019, as filed with the SEC on February 25, 2020. 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, 2020.

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, 2020			
	Farm & Ranch	USDA Guarantees	Corporate	Total
	(in thousands)			
On-Balance Sheet:				
Consolidated VIEs:				
Loans held for investment in consolidated trusts, at amortized cost	$ 1,276,407	$ —	$ —	$ 1,276,407
Debt securities of consolidated trusts held by third parties (1)	1,292,416	—	—	1,292,416
Unconsolidated VIEs:				
Farmer Mac Guaranteed Securities:				
Carrying value (2)	—	36,505	—	36,505
Maximum exposure to loss (3)	—	36,414	—	36,414
Investment securities:				
Carrying value (4)	—	—	1,835,688	1,835,688
Maximum exposure to loss (3) (4)	—	—	1,829,604	1,829,604
Off-Balance Sheet:				
Unconsolidated VIEs:				
Farmer Mac Guaranteed Securities:				
Maximum exposure to loss (3) (5)	85,767	310,682	—	396,449

(1) Includes borrower remittances of $16.0 million. The borrower remittances had not been passed through to third party investors as of September 30, 2020.
(2) Includes $0.1 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, 2019			
	Farm & Ranch	USDA Guarantees	Corporate	Total
	(in thousands)			
On-Balance Sheet:				
Consolidated VIEs:				
Loans held for investment in consolidated trusts, at amortized cost	$ 1,600,917	$ —	$ —	$ 1,600,917
Debt securities of consolidated trusts held by third parties (1)	1,616,504	—	—	1,616,504
Unconsolidated VIEs:				
Farmer Mac Guaranteed Securities:				
Carrying value (2)	—	32,041	—	32,041
Maximum exposure to loss (3)	—	31,887	—	31,887
Investment securities:				
Carrying value (4)	—	—	1,117,203	1,117,203
Maximum exposure to loss (3) (4)	—	—	1,120,765	1,120,765
Off-Balance Sheet:				
Unconsolidated VIEs:				
Farmer Mac Guaranteed Securities:				
Maximum exposure to loss (3) (5)	107,322	389,216	—	496,538

(1) Includes borrower remittances of $15.6 million. The borrower remittances had not been passed through to third party investors as of December 31, 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.

(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, 2020 and 2019:

Table 1.2

	For the Three Months Ended					
	September 30, 2020			September 30, 2019		
	Net Income	Weighted-Average Shares	$ per Share	Net Income	Weighted-Average Shares	$ per Share
	(in thousands, except per share amounts)					
Basic EPS						
Net income attributable to common stockholders	$ 18,659	10,734	$ 1.74	$ 14,406	10,706	$ 1.34
Effect of dilutive securities[1]						
SARs and restricted stock	—	51	(0.01)	—	70	(0.01)
Diluted EPS	$ 18,659	10,785	$ 1.73	$ 14,406	10,776	$ 1.33

[1] For the three months ended September 30, 2020 and 2019, SARs and restricted stock of 66,445 and 26,768, 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, 2020 and 2019, contingent shares of unvested restricted stock of 12,680 and 8,414, 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, 2020			September 30, 2019		
	Net Income	Weighted-Average Shares	$ per Share	Net Income	Weighted-Average Shares	$ per Share
	(in thousands, except per share amounts)					
Basic EPS						
Net income attributable to common stockholders	$ 59,745	10,725	$ 5.57	$ 64,584	10,691	$ 6.04
Effect of dilutive securities[1]						
SARs and restricted stock	—	56	(0.03)	—	83	(0.05)
Diluted EPS	$ 59,745	10,781	$ 5.54	$ 64,584	10,774	$ 5.99

[1] For the nine months ended September 30, 2020 and 2019, SARs and restricted stock of 78,963 and 48,801, 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, 2020 and 2019, contingent shares of unvested restricted stock of 12,680 and 10,994, 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, 2020 and 2019:

Table 1.3

	As of September 30, 2020				As of September 30, 2019			
	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total
				(in thousands)				
For the Three Months Ended:								
Beginning Balance	$ (88,261)	$ 26,379	$ (29,615)	$ (91,497)	$ (45,384)	$ 38,021	$ (5,480)	$ (12,843)
Other comprehensive income/(loss) before reclassifications	38,099	—	904	39,003	(18,915)	—	(5,071)	(23,986)
Amounts reclassified from AOCI	(783)	(1,993)	1,433	(1,343)	(776)	(5,169)	(250)	(6,195)
Net comprehensive income/(loss)	37,316	(1,993)	2,337	37,660	(19,691)	(5,169)	(5,321)	(30,181)
Ending Balance	$ (50,945)	$ 24,386	$ (27,278)	$ (53,837)	$ (65,075)	$ 32,852	$(10,801)	$ (43,024)
For the Nine Months Ended:								
Beginning Balance	$ (43,397)	$ 32,845	$ (5,609)	$ (16,161)	$ (25,360)	$ 43,443	$ 6,873	$ 24,956
Other comprehensive loss before reclassifications	(5,210)	—	(24,684)	(29,894)	(37,308)	—	(16,679)	(53,987)
Amounts reclassified from AOCI	(2,338)	(8,459)	3,015	(7,782)	(2,407)	(10,591)	(995)	(13,993)
Net comprehensive loss	(7,548)	(8,459)	(21,669)	(37,676)	(39,715)	(10,591)	(17,674)	(67,980)
Ending Balance	$ (50,945)	$ 24,386	$ (27,278)	$ (53,837)	$ (65,075)	$ 32,852	$(10,801)	$ (43,024)

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, 2020 and 2019:

Table 1.4

	For the Three Months Ended					
	September 30, 2020			September 30, 2019		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	(in thousands)					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding gains/(losses) on available-for-sale securities	$ 48,226	$ 10,127	$ 38,099	$ (23,943)	$ (5,028)	$ (18,915)
Less reclassification adjustments included in:						
Net interest income[1]	(976)	(205)	(771)	(961)	(202)	(759)
Other income[2]	(15)	(3)	(12)	(21)	(4)	(17)
Total	$ 47,235	$ 9,919	$ 37,316	$ (24,925)	$ (5,234)	$ (19,691)
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income[3]	(2,523)	(530)	(1,993)	(6,543)	(1,374)	(5,169)
Total	$ (2,523)	$ (530)	$ (1,993)	$ (6,543)	$ (1,374)	$ (5,169)
Cash flow hedges						
Unrealized gains/(losses) on cash flow hedges	$ 1,145	$ 241	$ 904	$ (6,419)	$ (1,348)	$ (5,071)
Less reclassification adjustments included in:						
Net interest income[4]	1,814	381	1,433	(317)	(67)	(250)
Total	$ 2,959	$ 622	$ 2,337	$ (6,736)	$ (1,415)	$ (5,321)
Other comprehensive income/(loss)	$ 47,671	$ 10,011	$ 37,660	$ (38,204)	$ (8,023)	$ (30,181)

(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, 2020			September 30, 2019		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	(in thousands)					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding losses on available-for-sale securities	$ (6,596)	$ (1,386)	$ (5,210)	$ (47,225)	$ (9,917)	$ (37,308)
Less reclassification adjustments included in:						
Net interest income(1)	(2,916)	(612)	(2,304)	(2,870)	(603)	(2,267)
Other income(2)	(42)	(8)	(34)	(177)	(37)	(140)
Total	$ (9,554)	$ (2,006)	$ (7,548)	$ (50,272)	$ (10,557)	$ (39,715)
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income(3)	(10,707)	(2,248)	(8,459)	(13,406)	(2,815)	(10,591)
Total	$ (10,707)	$ (2,248)	$ (8,459)	$ (13,406)	$ (2,815)	$ (10,591)
Cash flow hedges						
Unrealized losses on cash flow hedges	$ (31,246)	$ (6,562)	$ (24,684)	$ (21,113)	$ (4,434)	$ (16,679)
Less reclassification adjustments included in:						
Net interest income(4)	3,817	802	3,015	(1,260)	(265)	(995)
Total	$ (27,429)	$ (5,760)	$ (21,669)	$ (22,373)	$ (4,699)	$ (17,674)
Other comprehensive loss	$ (47,690)	$ (10,014)	$ (37,676)	$ (86,051)	$ (18,071)	$ (67,980)

(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) Allowance for Losses and Reserve for Losses

On January 1, 2020, Farmer Mac adopted Accounting Standards Update 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, ("CECL"). Under CECL, Farmer Mac's allowance for credit losses represents the difference between the carrying amount of the related financial instruments and the present value of their expected cash flows discounted at their effective interest rates, as of the respective balance sheet date. Under CECL, Farmer Mac's reserve for credit losses represents the difference between the outstanding amount of off-balance sheet credit exposures and the present value of their expected cash flows discounted at their effective interest rates.

Farmer Mac maintains an allowance for credit losses to cover current expected credit losses as of the balance sheet date for on-balance sheet investment securities, loans held for investment, and Farmer Mac Guaranteed Securities (collectively referred to as "allowance for losses"). Additionally, Farmer Mac maintains a reserve for credit losses to cover current expected credit losses as of the balance sheet date for off-balance sheet loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities (collectively referred to as "reserve for losses"). Both the allowance for losses and reserve for losses are based on historical information and reasonable and supportable forecasts.

Farmer Mac has never experienced a credit loss in its Rural Utilities line of business. Upon the adoption of CECL, Farmer Mac is now required to measure its expected credit losses for the expected life of all financial instruments, including its Rural Utilities loans. To estimate expected credit losses on these loans, Farmer Mac relies upon industry historical credit loss data from ratings agencies and publicly available information as disclosed in the securities filings of other major lenders who serve the utilities industry.

The allowance for losses increases through periodic provisions for loan losses that are charged against net interest income and the reserve for losses increases through provisions for losses that are charged to non-interest expense. Both the allowance for losses and reserve for losses are decreased by charge-offs for realized losses, net of recoveries. Releases from the allowance for losses or reserve for losses occur when the estimate of expected credit losses as of the end of a period is less than the estimate at the beginning of the period.

The total allowance for losses consists of the allowance for losses and the reserve for losses.

Charge-offs

Farmer Mac records a charge-off against the allowance for losses principally when a loss has been confirmed through the receipt of assets, generally the underlying collateral, in full satisfaction of the loan. The loss equals the excess of the recorded investment in the loan over the fair value of the collateral less estimated selling costs.

Estimation Methodology

Farmer Mac bases its methodology for determining its current estimate of expected losses on a statistical model, which incorporates credit loss history and reasonable and supportable forecasts. Farmer Mac's estimation methodology is comprised of the following key components:

- An economic model for each portfolio, including Farm & Ranch, Rural Utilities, and Institutional Credit;
- A migration matrix for each portfolio that reasonably predicts the movement of each financial asset among various risk categories over the course of each asset's expected life. The migration matrix forms the basis for our estimate of the probability of default of each financial asset;
- A loss-given-default ("LGD") model that reasonably predicts the amount of loss that Farmer Mac would incur upon the default of each financial asset;
- An economic factor forecast that updates the migration matrix model and the LGD model with current assumptions for the economic indicators that Farmer Mac has determined are most correlated with or relevant to the performance of each portfolio of assets; including Gross Domestic Product ("GDP"), credit spreads, unemployment rates, land values, and commodity prices; and
- A discounted cash flow analysis, which relies upon each of the above model outputs, plus the contractual terms of each financial asset, and the effective interest rate of each financial asset.

Management evaluates these assumptions by considering many relevant factors, including:

- economic conditions;
- geographic and agricultural commodity/product concentrations in the portfolio;
- the credit profile of the portfolio, including risk ratings and financial metrics;
- delinquency trends of the portfolio;
- historical charge-off and recovery activities of the portfolio; and

- other factors to capture current portfolio trends and characteristics that differ from historical experience.

Management believes that its methodology produces a reasonable estimate of expected credit losses, as of the balance sheet date, for the expected life of all of its financial assets.

Allowance for Loss on Available-for-Sale (AFS) Securities

To measure current expected credit losses on impaired AFS securities, Farmer Mac first considers those impaired securities that: 1) Farmer Mac does not intend to sell, and 2) it is not more likely than not that Farmer Mac will be required to sell before recovering its amortized cost basis. In assessing whether a credit loss exists, Farmer Mac compares the present value, discounted at the security's effective interest rate, of cash flows expected to be collected from an impaired AFS debt security to its amortized cost basis. If the present value of cash flows expected to be collected is less than the amortized cost basis of the impaired security, a credit loss exists and Farmer Mac records an allowance for loss for that credit loss. However, the amount of that allowance is limited by the amount that the security’s fair value is less than its amortized cost basis. Accrued interest receivable is recorded separately on the Consolidated Balance Sheet, and the allowance for credit losses excludes uncollectible accrued interest receivable.

Collateral Dependent Assets ("CDAs")

CDAs are loans, loans underlying LTSPCs, or off-balance sheet credit exposures in which the borrower is either in foreclosure or is experiencing financial difficulty and repayment is expected to be provided substantially through the sale or operation of the collateral by Farmer Mac. Farmer Mac estimates the current expected credit loss on CDAs based upon the appraised value of the collateral, the costs to sell it, and any applicable credit protection such as a guarantee.

COVID-19 Payment Deferments

The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") was signed into law on March 27, 2020. Section 4013 of the CARES Act titled “Temporary Relief from Troubled Debt Restructurings” provides financial institutions the option to temporarily suspend certain requirements under U.S. GAAP related to troubled debt restructurings (“TDRs”) for a limited period of time to account for the effects of the novel coronavirus disease 2019 ("COVID-19"). On April 10, 2020, Farmer Mac’s prudential regulator, the Office of Secondary Market Oversight (OSMO) within the Farm Credit Administration (FCA), issued guidance to Farmer Mac on loan servicing and reporting TDRs for lines of business affected by the COVID-19 outbreak. This guidance was consistent with the guidance provided by other financial regulatory agencies and the Financial Accounting Standards Board that short-term modifications made on a good faith basis in response to the COVID-19 national emergency are not TDRs when the borrower was not past due on loan payments before the March 13, 2020 presidential proclamation declaring the COVID-19 outbreak a national emergency.

During second quarter 2020, Farmer Mac implemented the guidance from FCA by granting up to 6-month payment deferments to borrowers who have been economically impacted by COVID-19. Farmer Mac deems loans under a COVID-19 payment deferment not to be past due and continues to accrue interest on those loans. Furthermore, Farmer Mac does not consider a payment deferment on any such loan to be a troubled debt restructuring. For the purpose of estimating expected credit losses on Farm & Ranch loans held for investment, Farmer Mac does consider payment deferments along with other available credit and economic information that pertains to that portfolio.

(d) New Accounting Standards

Recently Adopted Accounting Guidance

Standard	Description	Date of Adoption	Effect on Consolidated Financial Statements
ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	This Update required entities to measure all expected credit losses for financial assets held at amortized cost at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts, as well as requiring entities to use forward-looking information to form their credit loss estimates.	January 1, 2020	In first quarter 2020 Farmer Mac adopted the new guidance. The cumulative-effect adjustment to retained earnings as of January 1, 2020 reflected application of the new guidance and did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows. For more information on the transition adjustment see Table 1.5 below.
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	The adoption of this Update did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows.
ASU 2018-13, 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	The adoption of this Update did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows.

The following table presents the impact of adopting CECL on January 1, 2020 on our allowance and retained earnings:

Table 1.5

	December 31, 2019	Transition Adjustment	January 1, 2020
		(in thousands)	
Allowance:			
Farm & Ranch:			
Loans	$ 10,454	$ (3,909)	$ 6,545
Long-term standby purchase commitments and guarantees	2,164	(148)	2,016
Rural Utilities:			
Loans	—	5,378	5,378
Long-term standby purchase commitments	—	1,011	1,011
Farmer Mac Guaranteed Securities:			
AgVantage	—	315	315
Investment Securities	—	9	9
Total Allowance	$ 12,618	$ 2,656	$ 15,274
Retained Earnings	$ 457,047	$ (2,099)	$ 454,948

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

Standard	Description	Date of Planned Adoption	Effect on Consolidated Financial Statements
ASU 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting	The amendments in this Update provide optional guidance for a limited period of time to ease the potential burden in accounting for reference rate reform on financial reporting. They provide optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met.	The amendments in this Update are effective for all entities as of March 12, 2020 through December 31, 2022.	Farmer Mac is currently evaluating the impact of the discontinuation of LIBOR on the consolidated financial statements and the applicability of the optional guidance provided by this Update.

(e) Reclassifications

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

2. INVESTMENT SECURITIES

The following tables set forth information about Farmer Mac's investment securities as of September 30, 2020 and December 31, 2019:

Table 2.1

	As of September 30, 2020						
	Amount Outstanding	Unamortized Premium/ (Discount)	Amortized Cost[1]	Allowance for losses[2]	Unrealized Gains	Unrealized Losses	Fair Value
				(in thousands)			
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 19,700	$ —	$ 19,700	$ (37)	$ —	$ (591)	$ 19,072
Floating rate asset-backed securities	9,205	—	9,205	—	—	(4)	9,201
Floating rate Government/GSE guaranteed mortgage-backed securities	2,279,737	33	2,279,770	—	9,415	(3,152)	2,286,033
Fixed rate GSE guaranteed mortgage-backed securities	285	—	285	—	33	—	318
Fixed rate U.S. Treasuries	1,204,308	9,406	1,213,714	—	3,861	(9)	1,217,566
Total available-for-sale	3,513,235	9,439	3,522,674	(37)	13,309	(3,756)	3,532,190
Held-to-maturity:							
Floating rate Government/GSE guaranteed mortgage-backed securities[3]	45,032	—	45,032	—	1,153	—	46,185
Total investment securities	$ 3,558,267	$ 9,439	$ 3,567,706	$ (37)	$ 14,462	$ (3,756)	$ 3,578,375

(1) Amounts presented exclude $5.7 million of accrued interest receivable on investment securities as of September 30, 2020.

(2) Represents the amount of impairment that has resulted from credit-related factors, and therefore was recognized in the consolidated statement of operations as a provision for losses. Amount excludes unrealized losses relating to non-credit factors.

(3) The held-to-maturity investment securities had a weighted average yield of 1.5% as of September 30, 2020.

	As of December 31, 2019					
	Amount Outstanding	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)					
Available-for-sale:						
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 19,700	$ —	$ 19,700	$ —	$ (788)	$ 18,912
Floating rate asset-backed securities	11,092	—	11,092	—	(7)	11,085
Floating rate Government/GSE guaranteed mortgage-backed securities	1,633,731	1,174	1,634,905	2,414	(4,736)	1,632,583
Fixed rate GSE guaranteed mortgage-backed securities	315	—	315	25	—	340
Fixed rate U.S. Treasuries	1,295,210	208	1,295,418	1,520	(15)	1,296,923
Total available-for-sale	2,960,048	1,382	2,961,430	3,959	(5,546)	2,959,843
Held-to-maturity:						
Floating rate Government/GSE guaranteed mortgage-backed securities[1]	45,032	—	45,032	953	—	45,985
Total investment securities	$ 3,005,080	$ 1,382	$ 3,006,462	$ 4,912	$ (5,546)	$ 3,005,828

(1) The held-to-maturity investment securities had a weighted average yield of 3.3% as of December 31, 2019.

Farmer Mac did not sell any securities from its available-for-sale investment portfolio during the three and nine months ended September 30, 2020 and 2019.

As of September 30, 2020 and December 31, 2019, unrealized losses on available-for-sale investment securities were as follows:

Table 2.2

	As of September 30, 2020			
	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
	(dollars in thousands)			
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 19,072	$ (591)
Floating rate asset-backed securities	—	—	6,873	(4)
Floating rate Government/GSE guaranteed mortgage-backed securities	154,452	(464)	403,469	(2,688)
Fixed rate U.S. Treasuries	50,861	(9)	—	—
Total	$ 205,313	$ (473)	$ 429,414	$ (3,283)
Number of securities in loss position		27		63

	As of December 31, 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
	(dollars in thousands)			
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 18,912	$ (788)
Floating rate asset-backed securities	2,583	(1)	8,502	(6)
Floating rate Government/GSE guaranteed mortgage-backed securities	841,993	(2,244)	436,621	(2,492)
Fixed rate U.S. Treasuries	35,107	(15)	—	—
Total	$ 879,683	$ (2,260)	$ 464,035	$ (3,286)
Number of securities in loss position		57		62

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, 2020 and December 31, 2019, 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 both September 30, 2020 and December 31, 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+."

Securities in unrealized loss positions for 12 months or longer have a fair value as of September 30, 2020 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.

The amortized cost, fair value, and weighted-average yield of available-for-sale investment securities by remaining contractual maturity as of September 30, 2020 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, 2020		
	Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$ 1,142,369	$ 1,146,222	2.01%
Due after one year through five years	361,971	362,065	0.76%
Due after five years through ten years	1,129,147	1,134,255	0.67%
Due after ten years	889,187	889,648	0.69%
Total	$ 3,522,674	$ 3,532,190	1.12%

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, 2020 and December 31, 2019:

Table 3.1

	As of September 30, 2020						
	Unpaid Principal Balance	Unamortized Premium/ (Discount)	Amortized Cost[(1)]	Allowance for losses[(2)]	Unrealized Gains	Unrealized Losses	Fair Value
			(in thousands)				
Held-to-maturity:							
AgVantage	$ 1,164,353	$ (73)	$ 1,164,280	$ (216)	$ 25,969	$ (99)	$ 1,189,934
Farmer Mac Guaranteed USDA Securities	36,414	92	36,506	—	1,026	(1)	37,531
Total Farmer Mac Guaranteed Securities	1,200,767	19	1,200,786	(216)	26,995	(100)	1,227,465
USDA Securities	2,381,416	29,432	2,410,848	—	105,721	(1,398)	2,515,171
Total held-to-maturity	$ 3,582,183	$ 29,451	$ 3,611,634	$ (216)	$ 132,716	$ (1,498)	$ 3,742,636
Available-for-sale:							
AgVantage	$ 7,149,082	$ 1,524	$ 7,150,606	$ (330)	$ 394,280	$ (32,918)	$ 7,511,638
Trading:							
USDA Securities[(3)]	$ 6,617	$ 352	$ 6,969	$ —	$ 10	$ (149)	$ 6,830

(1) Amounts presented exclude $32.7 million, $41.1 million, and $0.1 million of accrued interest receivable on available-for-sale, held-to-maturity, and trading securities, respectively, as of September 30, 2020.
(2) Represents the amount of impairment that has resulted from credit-related factors, and therefore was recognized in the statement of financial operations as a provision for losses. Amount excludes unrealized losses relating to non-credit factors.
(3) The trading USDA securities had a weighted average yield of 5.09% as of September 30, 2020.

	As of December 31, 2019					
	Unpaid Principal Balance	Unamortized Premium/ (Discount)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
			(in thousands)			
Held-to-maturity:						
AgVantage	$ 1,415,584	$ (174)	$ 1,415,410	$ 15,300	$ (164)	$ 1,430,546
Farmer Mac Guaranteed USDA Securities	31,887	154	32,041	839	—	32,880
Total Farmer Mac Guaranteed Securities	1,447,471	(20)	1,447,451	16,139	(164)	1,463,426
USDA Securities	2,190,671	41,489	2,232,160	54,356	(758)	2,285,758
Total held-to-maturity	$ 3,638,142	$ 41,469	$ 3,679,611	$ 70,495	$ (922)	$ 3,749,184
Available-for-sale:						
AgVantage	$ 7,017,095	$ (124)	$ 7,016,971	$ 161,316	$ (35,262)	$ 7,143,025
Trading:						
USDA Securities[(1)]	$ 8,400	$ 479	$ 8,879	$ 61	$ (27)	$ 8,913

(1) The trading USDA securities had a weighted average yield of 5.20% as of December 31, 2019.

As of September 30, 2020 and December 31, 2019, 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, 2020			
	Held-to-Maturity and Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(in thousands)			
Held-to-maturity:				
AgVantage	$ 49,901	$ (99)	$ —	$ —
Farmer Mac Guaranteed USDA Securities	45	(1)	—	—
USDA Securities	$ —	$ —	$ 21,521	$ (1,398)
Total held-to-maturity	$ 49,946	$ (100)	$ 21,521	$ (1,398)
Available-for-sale:				
AgVantage	$ 333,544	$ (445)	$ 972,161	$ (32,473)

	As of December 31, 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
	(in thousands)			
Held-to-maturity:				
AgVantage	$ —	$ —	$ 301,836	$ (164)
USDA Securities	—	—	27,089	(758)
Total held-to-maturity	$ —	$ —	$ 328,925	$ (922)
Available-for-sale:				
AgVantage	$ 225,239	$ (2,203)	$ 1,394,802	$ (33,059)

The unrealized losses presented above are principally due to changes in interest rates from the date of acquisition to September 30, 2020 and December 31, 2019, as applicable. The unrealized losses on the held-to-maturity USDA Securities as of both September 30, 2020 and December 31, 2019 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 of America. As of September 30, 2020, Farmer Mac had executed COVID-19 payment deferments on loans with unpaid principal balances of $83.8 million underlying USDA Securities.

The unrealized losses from AgVantage securities were on 12 and 17 available-for-sale securities as of September 30, 2020 and December 31, 2019, respectively. There were 2 and 4 held-to-maturity AgVantage securities with an unrealized loss as of September 30, 2020 and December 31, 2019, respectively. As of September 30, 2020 and December 31, 2019, 7 and 13 available-for-sale AgVantage securities, respectively, had been in a loss position for more than 12 months.

During the three and nine months ended September 30, 2020 and 2019, Farmer Mac had no sales of Farmer Mac Guaranteed Securities or USDA Securities and, therefore, Farmer Mac realized no gains or losses.

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, 2020 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, 2020		
	Available-for-Sale Securities		
	Amortized Cost[1]	Fair Value	Weighted-Average Yield
		(dollars in thousands)	
Due within one year	$ 1,461,551	$ 1,468,084	1.48 %
Due after one year through five years	3,102,003	3,214,595	2.24 %
Due after five years through ten years	1,073,248	1,157,450	2.42 %
Due after ten years	1,513,804	1,671,509	2.57 %
Total	$ 7,150,606	$ 7,511,638	2.18 %

(1) Amounts presented exclude $32.7 million of accrued interest receivable.

	As of September 30, 2020		
	Held-to-Maturity Securities		
	Amortized Cost[1]	Fair Value	Weighted-Average Yield
		(dollars in thousands)	
Due within one year	$ 482,593	$ 486,460	2.75 %
Due after one year through five years	765,529	790,138	3.15 %
Due after five years through ten years	226,396	234,799	2.96 %
Due after ten years	2,137,116	2,231,239	3.25 %
Total	$ 3,611,634	$ 3,742,636	3.11 %

(1) Amounts presented exclude $41.1 million of accrued interest receivable.

4. FINANCIAL DERIVATIVES

Farmer Mac enters into financial derivative transactions 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, 2019 filed with the SEC on February 25, 2020.

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, 2020 and December 31, 2019:

Table 4.1

	As of September 30, 2020						
		Fair Value					
	Notional Amount	Asset	(Liability)	Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Term (in years)
				(dollars in thousands)			
Fair value hedges:							
Interest rate swaps:							
Pay fixed non-callable	$ 5,410,407	$ 5,530	$ (4,106)	2.26%	0.24%		12.02
Receive fixed non-callable	2,435,729	—	(11,532)	0.35%	1.75%		2.26
Receive fixed callable	343,500	4,460	—	0.18%	1.78%		3.41
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	482,000	1,597	(10,739)	2.02%	0.56%		6.17
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	356,864	—	(10,879)	2.38%	0.24%		4.26
Receive fixed non-callable	2,622,182	—	—	0.16%	0.98%		0.73
Receive fixed callable	200,000	1	(5)	0.07%	0.08%		0.97
Basis swaps	3,268,500	1,242	(188)	0.22%	0.25%		1.29
Treasury futures	4,400	9	—			139.73	
Credit valuation adjustment		(2)	92				
Total financial derivatives	$ 15,123,582	$ 12,837	$ (37,357)				
Collateral (held)/pledged		(600)	225,646				
Net amount		$ 12,237	$ 188,289				

	As of December 31, 2019						
		Fair Value					
	Notional Amount	Asset	(Liability)	Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Term (in years)
	(dollars in thousands)						
Fair value hedges:							
Interest rate swaps:							
Pay fixed non-callable	$ 4,955,686	$ 7,163	$ (3,281)	2.47%	1.93%		11.26
Receive fixed non-callable	1,413,200	76	(5,329)	1.88%	2.13%		1.25
Receive fixed callable	524,000	476	(772)	1.52%	1.91%		2.83
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	428,000	1,882	(1,514)	2.36%	2.12%		5.43
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	342,745	7	(14,046)	3.55%	2.00%		5.51
Receive fixed non-callable	3,124,148	49	(1,637)	1.88%	2.06%		1.66
Receive fixed callable	525,000	79	(80)	1.64%	1.68%		0.83
Basis swaps	2,670,000	787	(395)	1.86%	1.76%		0.90
Treasury futures	39,400	—	(51)			128.29	
Credit valuation adjustment		—	63				
Total financial derivatives	$ 14,022,179	$ 10,519	$ (27,042)				
Collateral (held)/pledged		(2,685)	132,129				
Net amount		$ 7,834	$ 105,087				

As of September 30, 2020, Farmer Mac expects to reclassify $5.3 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, 2020. During the three and nine months ended September 30, 2020 and 2019, there were no gains or losses from interest rate swaps designated as cash flow hedges reclassified to earnings because it was probable that the originally forecasted transactions would 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, 2020 and 2019:

Table 4.2

	For the Three Months Ended September 30, 2020				
	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	Losses on financial derivatives	Total
			(in thousands)		
Total amounts presented in the consolidated statement of operations	$ 45,335	$ 56,204	$ (63,974)	$ (564)	$ 37,001
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	(20,373)	(6,194)	9,605	—	(16,962)
Recognized on hedged items	31,439	10,965	(12,328)	—	30,076
Discount amortization recognized on hedged items	—	—	(191)	—	(191)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 11,066	$ 4,771	$ (2,914)	$ —	$ 12,923
(Losses)/gains on fair value hedging relationships:					
Recognized on derivatives	$ 38,363	$ 28,198	$ (9,665)	$ —	$ 56,896
Recognized on hedged items	(41,855)	(29,372)	9,284	—	(61,943)
(Losses)/gains on fair value hedging relationships	$ (3,492)	$ (1,174)	$ (381)	$ —	$ (5,047)
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ (1,814)	$ —	$ (1,814)
Recognized on hedged items	—	—	(711)	—	(711)
Discount amortization recognized on hedged items	—	—	(4)	—	(4)
Expense recognized on cash flow hedges	$ —	$ —	$ (2,529)	$ —	$ (2,529)
Losses on financial derivatives not designated in hedging relationships:					
Losses on interest rate swaps	$ —	$ —	$ —	$ (4,292)	$ (4,292)
Interest expense on interest rate swaps	—	—	—	3,800	3,800
Treasury futures	—	—	—	(72)	(72)
Losses on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ (564)	$ (564)

	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	Losses on financial derivatives	Total
			(in thousands)		
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	$ 30,384	$ 6,737	$ (11,885)	$ —	$ 25,236
(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	$ (3,331)	$ (2,104)	$ 945	$ —	$ (4,490)
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	$ —	$ —	$ (2,410)	$ —	$ (2,410)
Losses on financial derivatives not designated in hedge relationships:					
Losses on interest rate swaps	$ —	$ —	$ —	$ (7,402)	$ (7,402)
Interest expense on interest rate swaps	—	—	—	127	127
Treasury futures	—	—	—	(85)	(85)
Losses on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ (7,360)	$ (7,360)

	For the Nine Months Ended September 30, 2020				
	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	Losses on financial derivatives	Total
			(in thousands)		
Total amounts presented in the consolidated statement of operations	$ 178,644	$ 172,230	$ (251,789)	$ (3,339)	$ 95,746
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	(38,781)	(12,607)	16,671	—	(34,717)
Recognized on hedged items	95,366	29,454	(39,325)	—	85,495
Discount amortization recognized on hedged items	—	—	(552)	—	(552)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 56,585	$ 16,847	$ (23,206)	$ —	$ 50,226
(Losses)/gains on fair value hedging relationships:					
Recognized on derivatives	$ (264,797)	$ (124,322)	$ 52,991	$ —	$ (336,128)
Recognized on hedged items	257,575	119,072	(53,628)	—	323,019
(Losses)/gains on fair value hedging relationships	$ (7,222)	$ (5,250)	$ (637)	$ —	$ (13,109)
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ (3,817)	$ —	$ (3,817)
Recognized on hedged items	—	—	(3,863)	—	(3,863)
Discount amortization recognized on hedged items	—	—	(6)	—	(6)
Expense recognized on cash flow hedges	$ —	$ —	$ (7,686)	$ —	$ (7,686)
(Losses)/gains on financial derivatives not designated in hedging relationships:					
Losses on interest rate swaps	$ —	$ —	$ —	$ (2,415)	$ (2,415)
Interest expense on interest rate swaps	—	—	—	1,143	1,143
Treasury futures	—	—	—	(2,067)	(2,067)
(Losses)/gains on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ (3,339)	$ (3,339)

	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 on financial derivatives	Total
			(in thousands)		
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 hedge 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

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, 2020 and December 31, 2019:

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, 2020	December 31, 2019	September 30, 2020	December 31, 2019
	(in thousands)			
Farmer Mac Guaranteed Securities, Available-for-Sale, at fair value[1]	$ 4,277,240	$ 4,092,611	$ 437,777	$ 180,215
Loans held for investment, at amortized cost[2][3]	1,628,241	1,050,335	156,979	37,907
Notes Payable[4]	(2,838,690)	(2,761,052)	(61,149)	(7,433)

(1) Includes $1.6 million of hedging adjustments on discontinued hedging relationships as of September 30, 2020.
(2) Includes $1.4 million of hedging adjustments on a discontinued hedging relationship as of September 30, 2020.
(3) Includes $0.2 million as of September 30, 2020 in fair value adjustment, currently included in "Prepaid expenses and other assets" related to hedge accounting designations of purchase commitments
(4) Carrying amount represents amortized cost.

The following table shows Farmer Mac's credit exposure to interest rate swap counterparties as of September 30, 2020 and December 31, 2019:

Table 4.4

	September 30, 2020		
	Gross Amount Recognized[1]	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
		(in thousands)	
Assets:			
Derivatives			
Interest rate swap	$ 114,788	$ 114,165	$ 623
Liabilities:			
Derivatives			
Interest rate swap	$ 718,812	$ 714,470	$ 4,342

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

	December 31, 2019		
	Gross Amount Recognized[1]	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
		(in thousands)	
Assets:			
Derivatives			
Interest rate swaps	$ 56,139	$ 53,771	$ 2,368
Liabilities:			
Derivatives			
Interest rate swaps	$ 305,584	$ 291,326	$ 14,258

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

As of September 30, 2020, Farmer Mac held $0.6 million of cash and no investment securities as collateral for its derivatives in net asset positions, compared to $2.7 million of cash and no investment securities as collateral for its derivatives in net asset positions as of December 31, 2019.

Farmer Mac posted $13.6 million cash and $212.1 million of investment securities as of September 30, 2020 and posted $0.5 million cash and $131.7 million investment securities as of December 31, 2019. 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, 2020 and December 31, 2019, 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, 2020 and December 31, 2019, 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 $15.1 billion notional amount of interest rate swaps outstanding as of September 30, 2020, $12.4 billion were cleared through the swap clearinghouse, the Chicago Mercantile Exchange ("CME"). Of Farmer Mac's $14.0 billion notional amount of interest rate swaps outstanding as of December 31, 2019, $11.0 billion were cleared through the CME. During the first half of 2020 and throughout 2019, Farmer Mac increased its use of non-cleared basis swaps as it began to prepare for the transition away from the use of LIBOR as a reference rate. 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, 2019 filed with the SEC on February 25, 2020.

5. 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 basis adjustments. Loans held for sale are reported at the lower of cost or fair value determined on a pooled basis. During the three months ended September 30, 2020, Farmer Mac acquired $59.2 million in loans held for sale, of which it sold $15.0 million during the quarter, and reclassified $24.2 million as loans held for investment. As of September 30, 2020 and December 31, 2019, Farmer Mac had $20.0 million and no loans held for sale, respectively.

The following table includes loans held for investment and loans held for sale and displays the composition of the loan balances as of September 30, 2020 and December 31, 2019:

Table 5.1

	As of September 30, 2020[1]			As of December 31, 2019[2]		
	Unsecuritized	In Consolidated Trusts	Total	Unsecuritized	In Consolidated Trusts	Total
	(in thousands)					
Farm & Ranch	$ 4,580,917	$ 1,276,407	$ 5,857,324	$ 3,675,640	$ 1,600,917	$ 5,276,557
Rural Utilities	2,109,355	—	2,109,355	1,671,293	—	1,671,293
Total unpaid principal balance[3]	6,690,272	1,276,407	7,966,679	5,346,933	1,600,917	6,947,850
Unamortized premiums, discounts, fair value hedge basis adjustment, and other cost basis adjustments	154,789	—	154,789	44,044	—	44,044
Total loans	6,845,061	1,276,407	8,121,468	5,390,977	1,600,917	6,991,894
Allowance for losses	(14,878)	(943)	(15,821)	(8,853)	(1,601)	(10,454)
Total loans, net of allowance	$ 6,830,183	$ 1,275,464	$ 8,105,647	$ 5,382,124	$ 1,599,316	$ 6,981,440

(1) Allowance for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020.
(2) Prior to the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020, Farmer Mac maintained an allowance for losses to cover estimated probable incurred losses on loans held.
(3) Unpaid principal balance is the basis of presentation in disclosures of outstanding balances for Farmer Mac's lines of business.

Allowance for Losses

The following table is a summary, by asset type, of the allowance for losses as of September 30, 2020 and December 31, 2019:

Table 5.2

	September 30, 2020[1]	December 31, 2019[2]
	Allowance for Losses	Allowance for Losses
	(in thousands)	
Loans:		
Farm & Ranch	$ 5,739	$ 10,454
Rural Utilities	10,082	—
Total	$ 15,821	$ 10,454

(1) Allowance for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020.
(2) Prior to the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020, Farmer Mac maintained an allowance for loan losses to cover estimated probable incurred losses on loans held.

The following is a summary of the changes in the allowance for losses for the three and nine month period ended September 30, 2020 and 2019:

Table 5.3

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2020(1)	September 30, 2019(2)	September 30, 2020(1)	September 30, 2019(2)
	Allowance for Losses	Allowance for Losses	Allowance for Losses	Allowance for Losses
	(in thousands)			
Farm & Ranch:				
Beginning Balance	$ 6,039	$ 7,264	$ 10,454	$ 7,017
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	(3,909)	—
Adjusted Beginning Balance	6,039	7,264	6,545	7,017
(Release of)/provision for losses	(300)	760	(412)	1,074
Charge-offs	—	—	(394)	(67)
Ending Balance(3)	$ 5,739	$ 8,024	$ 5,739	$ 8,024
Rural Utilities:				
Beginning Balance	$ 8,900	$ —	$ —	$ —
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	5,378	—
Adjusted Beginning Balance	8,900	—	5,378	—
Provision for losses	1,182	—	4,704	—
Charge-offs	—	—	—	—
Ending Balance(4)	$ 10,082	$ —	$ 10,082	$ —

(1) Allowance for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020.
(2) Prior to the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020, Farmer Mac maintained an allowance for loan losses to cover estimated probable incurred losses on loans held.
(3) Allowance for losses includes $1.8 million for collateral dependent assets secured by agricultural real estate.
(4) Allowance for losses includes no allowance for collateral dependent assets.

The cumulative transition adjustment decrease of $3.9 million in the Farm & Ranch portfolio was primarily driven by differences in the way that the two loss models measure the impact of low loan-to-value ratios in that portfolio. Under the previous accounting standard, Farmer Mac's estimated incurred loss model was based on historical weighted-average loss rates from realized losses within commodities and risk ratings. The historical weighted average loss rates were then applied to sub-portfolios, as disaggregated by commodity and risk rating, to calculate the general allowance. Under the CECL accounting standard, Farmer Mac's current expected credit losses are calculated individually based on the expected probability of default and the expected loss-given-default for each loan. The low loan-to-value ratios in the Farm & Ranch portfolio result in low individual losses-given-default. Thus, our expected credit losses as of January 1, 2020 were less than our estimate of incurred losses as of December 31, 2019.

The cumulative transition adjustment increase of $5.4 million in the Rural Utilities portfolio was primarily driven by the change from measuring incurred probable credit losses to measuring expected credit losses over the expected lives of these loans. Farmer Mac has never experienced a credit loss in its Rural Utilities portfolio. Additionally, these loans have strong credit ratings and performance, which supported Farmer Mac's estimate of no incurred credit losses under the previous accounting standard. Upon the adoption of CECL, Farmer Mac is now required to measure its expected credit losses for the entire expected life of all financial instruments, including its Rural Utilities loans. To estimate expected credit losses on these loans, Farmer Mac relies upon industry data from ratings agencies and publicly available information as disclosed in the securities filings of other major lenders who serve the utilities industry. Under the CECL accounting standard, Farmer Mac's loss allowance model for these loans is primarily impacted by the long-term maturities of the loans and their low probability of prepayment. In addition, the highly-specialized nature of power generation and transmission and other rural infrastructure facilities results in significant expected losses given default even though the probability of default is low. Thus, the long-term expected lives of these loans combined with high losses given default result in an estimate of expected losses although we have never incurred a credit loss in this portfolio.

The provision to the allowance for loan losses of $0.9 million recorded during third quarter 2020 was primarily due to the impact of net new loan volume in the Rural Utilities portfolio and credit downgrades on existing volume during the quarter. The impact of the Rural Utilities portfolio on the net increase to the provision was partially offset by improving economic factors that uniquely impacted the Farm & Ranch portfolio, specifically continued improvements in commodity prices and continued expectations for stable farm land values.

The provision to the allowance for loan losses of $4.3 million recorded during the nine months ended September 30, 2020 was primarily due to the impact of net new loan volume in the Rural Utilities portfolio and the impact of economic factor forecasts on the Rural Utilities portfolio, especially continued expected higher unemployment, as a result of the COVID-19 pandemic and the resulting economic volatility.

The provision for the allowance for loan losses recorded during three and nine months ended September 30, 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 $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.

The following table presents the unpaid principal balances by delinquency status of Farmer Mac's loans and non-performing assets as of September 30, 2020:

Table 5.4

	As of September 30, 2020						
	Accruing						
	Current[5]	30-59 Days	60-89 Days	90 Days and Greater[2]	Total Past Due	Nonaccrual loans[3][4]	Total Loans
	(in thousands)						
Loans[1]:							
Farm & Ranch	$ 5,716,834	$ 3,513	$ 637	$ 6,901	$ 11,051	$ 129,439	$ 5,857,324
Rural Utilities	2,109,355	—	—	—	—	—	2,109,355
Total	$ 7,826,189	$ 3,513	$ 637	$ 6,901	$ 11,051	$ 129,439	$ 7,966,679

(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) Includes loans in consolidated trusts with beneficial interests owned by third parties that are 90 days or more past due.
(3) Includes loans 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.
(4) Includes $24.8 million of nonaccrual loans for which there was no associated allowance. During the three and nine months ended September 30, 2020, Farmer Mac received $1.2 million and $3.5 million, respectively, in interest on nonaccrual loans.
(5) Includes $105.3 million of unpaid principal balance related to Farm & Ranch loans that Farmer Mac has executed a COVID-19 payment deferment.

The following tables present the unpaid principal balances of loans held and the related total allowance for losses by impairment method and commodity type as of December 31, 2019:

Table 5.5

	As of December 31, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
				(in thousands)			
Ending Balance:							
Collectively evaluated for impairment	$ 2,664,362	$ 1,161,900	$ 871,341	$ 356,920	$ 10,360	$ 4,597	$ 5,069,480
Individually evaluated for impairment	108,815	51,256	39,962	7,044	—	—	207,077
Total Farm & Ranch loans	$ 2,773,177	$ 1,213,156	$ 911,303	$ 363,964	$ 10,360	$ 4,597	$ 5,276,557
Allowance for Losses:							
Collectively evaluated for impairment	$ 1,880	$ 1,362	$ 714	$ 249	$ 47	$ 4	$ 4,256
Individually evaluated for impairment	2,628	1,008	2,447	115	—	—	6,198
Total Farm & Ranch loans	$ 4,508	$ 2,370	$ 3,161	$ 364	$ 47	$ 4	$ 10,454

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 December 31, 2019:

Table 5.6

	As of December 31, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
				(in thousands)			
Impaired Loans:							
With no specific allowance:							
Recorded investment	$ 30,846	$ 16,696	$ 3,195	$ 1,398	$ —	$ 56	$ 52,191
Unpaid principal balance	30,741	16,638	3,185	1,394	—	56	52,014
With a specific allowance:							
Recorded investment[(1)]	84,044	36,852	47,113	6,376	—	—	174,385
Unpaid principal balance	83,772	36,732	46,984	6,356	—	—	173,844
Associated allowance	2,725	1,051	2,636	129	—	—	6,541
Total:							
Recorded investment	114,890	53,548	50,308	7,774	—	56	226,576
Unpaid principal balance	114,513	53,370	50,169	7,750	—	56	225,858
Associated allowance	2,725	1,051	2,636	129	—	—	6,541
Recorded investment of loans on nonaccrual status[(2)]	$ 34,037	$ 22,849	$ 28,441	$ 2,454	$ —	$ —	$ 87,781

(1) Impairment analysis was performed in the aggregate in consideration of similar risk characteristics of the assets and historical statistics on $159.1 million (70%) of impaired loans as of December 31, 2019, which resulted in a specific allowance of $3.0 million.

(2) Includes $30.1 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:

Table 5.7

	September 30, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
				(in thousands)			
For the Three Months Ended:							
Average recorded investment in impaired loans	$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

Net credit losses and 90-day delinquencies as of and for the periods indicated for loans held are presented in the table below. As of December 31, 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 5.8

	90-Day Delinquencies[1] As of December 31, 2019	Net Credit Losses For the Nine Months Ended September 30, 2019
	(in thousands)	
Farm & Ranch loans	$ 57,719	$ 131

(1) Includes loans 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 $57.7 million of on-balance sheet loans reported as 90-day delinquencies as of December 31, 2019, no loans were subject to "removal-of-account" provisions.

Rural Utilities

As of December 31, 2019, no allowance for losses had been provided for Farmer Mac's Rural Utilities line of business based on the performance of the loans in this line of business and the credit quality of the collateral supporting these loans, as well as Farmer Mac's counterparty risk analysis. As of December 31, 2019, there were no delinquencies or probable losses inherent in Farmer Mac's Rural Utilities loans held or underlying LTSPCs.

Credit Quality Indicators

The following tables present credit quality indicators related to Farm & Ranch loans and Rural Utilities loans held as of September 30, 2020, by year of origination:

Table 5.9

	As of September 30, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Farm & Ranch[1]:								
Internally Assigned Risk Rating:								
Acceptable	$1,423,112	$ 765,367	$ 507,218	$ 557,095	$ 499,642	$1,157,633	$ 472,209	$5,382,276
Special mention[2]	39,607	124,068	27,757	4,633	10,897	22,236	50,395	279,593
Substandard[3]	7,556	5,926	19,682	57,541	36,490	59,330	8,930	195,455
Total	$1,470,275	$ 895,361	$ 554,657	$ 619,269	$ 547,029	$1,239,199	$ 531,534	$5,857,324
For the Three Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Farm & Ranch net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ 394	$ —	$ 394
Current period recoveries	—	—	—	—	—	—	—	—
Current period Farm & Ranch net charge-offs	$ —	$ —	$ —	$ —	$ —	$ 394	$ —	$ 394

(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 September 30, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Utilities[1]:								
Internally Assigned Risk Rating:								
Acceptable	$ 502,873	$ 819,099	$ 8,260	$ 92,223	$ 31,275	$ 638,281	$ 12,870	$2,104,881
Special mention[2]	—	—	—	—	—	—	—	—
Substandard[3]	—	—	—	—	—	4,474	—	4,474
Total	$ 502,873	$ 819,099	$ 8,260	$ 92,223	$ 31,275	$ 642,755	$ 12,870	$2,109,355
For the Three Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Utilities net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Utilities net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —

(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.

The following table presents credit quality indicators related to Farm & Ranch loans held as of December 31, 2019:

Table 5.10

	As of December 31, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Internally Assigned Risk Rating[1]							
Acceptable	$ 2,556,956	$ 1,050,160	$ 825,234	$ 343,329	$ 10,360	$ 4,597	$ 4,790,636
Special mention[2]	107,406	111,739	46,107	13,591	—	—	278,843
Substandard[3]	108,815	51,257	39,962	7,044	—	—	207,078
Total	$ 2,773,177	$ 1,213,156	$ 911,303	$ 363,964	$ 10,360	$ 4,597	$ 5,276,557
Commodity analysis of past due loans[1]	$ 21,167	$ 15,828	$ 19,354	$ 1,370	$ —	$ —	$ 57,719

(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.

6. GUARANTEES

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, 2020 and December 31, 2019, 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, 2020	As of December 31, 2019
	(in thousands)	
Farm & Ranch:		
Farmer Mac Guaranteed Securities	$ 85,767	$ 107,322
USDA Guarantees:		
Farmer Mac Guaranteed USDA Securities	310,682	389,216
Institutional Credit:		
AgVantage Securities	6,068	7,567
Total off-balance sheet Farmer Mac Guaranteed Securities	$ 402,517	$ 504,105

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, 2020	September 30, 2019
	(in thousands)	
Proceeds from new securitizations	$ 64,612	$ 199,396
Guarantee fees received	1,136	1,122

Farmer Mac presents a liability for its obligation to stand ready under its guarantee in "Guarantee and commitment obligation" on the consolidated balance sheets. The following table presents the liability and the weighted-average remaining maturity of all loans underlying off-balance sheet Farmer Mac Guaranteed Securities:

Table 6.3

	As of September 30, 2020	As of December 31, 2019
	(dollars in thousands)	
Guarantee and commitment obligation	$ 1,780	$ 2,230
Weighted average remaining maturity:		
Farmer Mac Guaranteed Securities	9.5 years	9.8 years
AgVantage Securities	4.2 years	5.0 years

Long-Term Standby Purchase Commitments

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. The following table presents the liability, 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, as well as the weighted-average remaining maturity of all loans underlying LTSPCs:

Table 6.4

	As of September 30, 2020	As of December 31, 2019
	(dollars in thousands)	
Guarantee and commitment obligation[1]	$ 33,360	$ 34,470
Maximum principal amount	2,882,212	3,002,349
Weighted-average remaining maturity	15.1 years	15.2 years

[1] Relates to LTSPCs issued or modified on or after January 1, 2003.

Reserve for Losses

The following table is a summary, by asset type, of the reserve for losses as of September 30, 2020 and December 31, 2019:

Table 6.5

	September 30, 2020[(1)]	December 31, 2019[(2)]
	Reserve for Losses	Reserve for Losses
	(in thousands)	
Farm & Ranch:		
LTSPCs and Farmer Mac Guaranteed Securities	$ 2,278	$ 2,164
Rural Utilities		
LTSPCs	1,290	—
Total	$ 3,568	$ 2,164

(1) Reserve for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," in first quarter 2020.
(2) Prior to the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," in first quarter 2020, Farmer Mac maintained a reserve for losses to cover estimated probable incurred losses on loans underlying LTSPCs and off-balance sheet Farm & Ranch Farmer Mac Guaranteed Securities.

The following is a summary of the changes in the reserve for losses for the three and nine month period ended September 30, 2020 and 2019:

Table 6.6

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2020[(1)]	September 30, 2019[(2)]	September 30, 2020[(1)]	September 30, 2019[(2)]
	Reserve for Losses	Reserve for Losses	Reserve for Losses	Reserve for Losses
	(in thousands)			
Farm & Ranch:				
Beginning Balance	$ 1,650	$ 1,880	$ 2,164	$ 2,167
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	(148)	—
Adjusted Beginning Balance	1,650	1,880	2,016	2,167
Provision for/(release of) losses	$ 628	$ (137)	$ 262	$ (424)
Ending Balance	$ 2,278	$ 1,743	$ 2,278	$ 1,743
Rural Utilities:				
Beginning Balance	$ 1,370	$ —	$ —	$ —
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	1,011	—
Adjusted Beginning Balance	1,370	—	1,011	—
(Release of)/provision for losses	$ (80)	$ —	$ 279	$ —
Ending Balance	$ 1,290	$ —	$ 1,290	$ —

(1) Reserve for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," in first quarter 2020.
(2) Prior to the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," in first quarter 2020, Farmer Mac maintained a reserve for losses to cover estimated probable incurred losses on loans underlying LTSPCs and off-balance sheet Farm & Ranch Farmer Mac Guaranteed Securities.

The provision to the reserve for losses recorded during the three and nine months ended September 30, 2020 was primarily due to credit downgrades in the LTSPC portfolio.

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 slight improvements in off-balance sheet portfolio credit quality.

The following table presents the unpaid principal balances by delinquency status of Farm & Ranch loans underlying LTSPCs. Farm & Ranch Farmer Mac Guaranteed Securities, Rural Utilities loans underlying LTSPCs, and non-performing assets as of September 30, 2020:

Table 6.7

	As of September 30, 2020					
	Current[(2)]	30-59 Days	60-89 Days	90 Days and Greater[(1)]	Total Past Due	Total Loans
	(in thousands)					
Farm and Ranch:						
LTSPCs and Farmer Mac Guaranteed Securities	$ 2,352,454	$ 2,934	$ 22,690	$ 13,947	$ 39,571	$ 2,392,025
Rural Utilities:						
LTSPCs	$ 575,954	$ —	$ —	$ —	$ —	$ 575,954

(1) Includes loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs that are 90 days of 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) Includes $185.4 million of unpaid principal balance related to Farm & Ranch LTSPCs for which the lender has notified Farmer Mac of an executed COVID-19 payment deferment.

The following tables present the unpaid principal balances of Farm & Ranch loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities (excluding AgVantage securities) and the related reserve for losses by impairment method and commodity type as of December 31, 2019:

Table 6.8

	As of December 31, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Ending Balance:							
Collectively evaluated for impairment:	$ 1,151,983	$ 511,991	$ 581,377	$ 167,395	$ 66,106	$ 2,760	$ 2,481,612
Individually evaluated for impairment:	5,698	2,114	10,207	706	—	56	18,781
Total Farm & Ranch	$ 1,157,681	$ 514,105	$ 591,584	$ 168,101	$ 66,106	$ 2,816	$ 2,500,393
Allowance for Losses:							
Collectively evaluated for impairment:	$ 599	$ 96	$ 308	$ 50	$ 767	$ 1	$ 1,821
Individually evaluated for impairment:	97	43	189	14	—	—	343
Total Farm & Ranch	$ 696	$ 139	$ 497	$ 64	$ 767	$ 1	$ 2,164

Net credit losses and 90-day delinquencies as of and for the periods indicated for loans underlying off-balance sheet securities representing interests in pools of eligible Farm & Ranch LTSPCs are presented in the table below. As of December 31, 2019, there were no delinquencies and no probable losses inherent in Farmer Mac's Rural Utilities LTSPCs portfolio and Farmer Mac had not experienced credit losses on any Rural Utilities LTSPCs.

Table 6.9

	90-Day Delinquencies[1] As of December 31, 2019	Net Credit Losses/(Recoveries) For the Nine Months Ended September 30, 2019
	(in thousands)	
Farm & Ranch LTSPCs and Farmer Mac Guaranteed Securities	$ 3,235	$ —

(1) Includes 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.

Credit Quality Indicators

The following tables present credit quality indicators related to Farm & Ranch loans underlying LTSPCs, Farm & Ranch Farmer Mac Guaranteed Securities, and Rural Utilities loans underlying LTSPCs as of September 30, 2020, by year of origination:

Table 6.10

	As of September 30, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Farm & Ranch LTSPCs and Farmer Mac Guaranteed Securities:								
Internally Assigned Risk Rating:								
Acceptable	$ 118,116	$ 207,202	$ 184,421	$ 245,490	$ 216,983	$1,021,400	$ 173,617	$2,167,229
Special mention[1]	—	1,742	1,509	23,200	14,628	47,948	10,040	99,067
Substandard[2]	264	10,821	12,676	15,614	14,401	67,338	4,615	125,729
Total	$ 118,380	$ 219,765	$ 198,606	$ 284,304	$ 246,012	$1,136,686	$ 188,272	$2,392,025
For the Three Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Farm & Ranch net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Farm & Ranch net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —

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

(2) 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 September 30, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Utilities LTSPCs:								
Internally Assigned Risk Rating:								
Acceptable	$ —	$ —	$ —	$ —	$ —	$ 569,324	$ 6,630	$ 575,954
Special mention(1)	—	—	—	—	—	—	—	—
Substandard(2)	—	—	—	—	—	—	—	—
Total	$ —	$ —	$ —	$ —	$ —	$ 569,324	$ 6,630	$ 575,954
For the Three Months Ended								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Utilities net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Utilities net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —

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

The following table presents credit quality indicators related to Farm & Ranch loans underlying LTSPCs and off-balance sheet Farm & Ranch Farmer Mac Guaranteed Securities as of December 31, 2019:

Table 6.11

	As of December 31, 2019						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(in thousands)						
Internally Assigned Risk Rating(1)							
Acceptable	$ 1,033,002	$ 484,601	$ 521,341	$ 161,361	$ 66,106	$ 2,594	$ 2,269,005
Special mention(2)	68,372	22,909	35,618	1,612	—	—	128,511
Substandard(3)	56,307	6,595	34,625	5,128	—	222	102,877
Total	$ 1,157,681	$ 514,105	$ 591,584	$ 168,101	$ 66,106	$ 2,816	$ 2,500,393
Commodity analysis of past due loans(1)	$ 1,493	$ 196	$ 1,066	$ 480	$ —	$ —	$ 3,235

(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.

7. NOTES PAYABLE

Farmer Mac's borrowings consist of discount notes and medium-term notes, both of which are unsecured general obligations of Farmer Mac. Discount notes generally have original maturities of 1.0 year or less, whereas medium-term notes generally have maturities of 0.5 years to 15.0 years.

The following tables set forth information related to Farmer Mac's borrowings as of September 30, 2020 and December 31, 2019:

Table 7.1

	September 30, 2020			
	Outstanding as of September 30		Average Outstanding During the First Nine Months	
	Amount	Weighted-Average Rate	Amount	Weighted-Average Rate
	(dollars in thousands)			
Due within one year:				
Discount notes	$ 2,358,943	0.21 %	$ 2,313,477	0.79 %
Medium-term notes	2,065,148	0.27 %	1,312,909	0.81 %
Current portion of medium-term notes	6,510,992	0.90 %		
Total due within one year	$ 10,935,083	0.63 %		
Due after one year:				
Medium-term notes due in:				
Two years	$ 3,277,494	0.96 %		
Three years	2,326,812	1.44 %		
Four years	1,056,062	1.73 %		
Five years	1,242,150	1.35 %		
Thereafter	2,751,684	2.07 %		
Total due after one year	10,654,202	1.47 %		
Total	$ 21,589,285	1.05 %		

	December 31, 2019			
	Outstanding as of December 31		Average Outstanding During the Year	
	Amount	Weighted-Average Rate	Amount	Weighted-Average Rate
	(dollars in thousands)			
Due within one year:				
Discount notes	$ 2,194,177	1.72 %	$ 1,977,214	2.25 %
Medium-term notes	1,152,770	1.98 %	1,780,517	2.33 %
Current portion of medium-term notes	6,672,135	1.85 %		
Total due within one year	$ 10,019,082	1.84 %		
Due after one year:				
Medium-term notes due in:				
Two years	$ 3,700,835	2.04 %		
Three years	1,594,709	2.15 %		
Four years	1,205,276	2.27 %		
Five years	760,887	2.25 %		
Thereafter	1,817,859	2.89 %		
Total due after one year	9,079,566	2.28 %		
Total	$ 19,098,648	2.05 %		

During the nine months ended September 30, 2020, Farmer Mac increased its use of short-term funding in order to fund the growth of short-term assets in its liquidity portfolio. The maximum amount of Farmer Mac's discount notes outstanding at any month end during the nine months ended September 30, 2020 and 2019 was $2.6 billion and $2.2 billion, respectively.

Callable medium-term notes give Farmer Mac the option to redeem the debt at par value on a specified call date or at any time on or after a specified call date. The following table summarizes by maturity date the amounts and costs for Farmer Mac debt callable in 2020 as of September 30, 2020:

Table 7.2

Debt Callable in 2020 as of September 30, 2020, by Maturity		
	Amount	Weighted-Average Rate
	(dollars in thousands)	
Maturity:		
2021	$ 215,949	0.17 %
2022	122,918	0.59 %
2023	127,863	0.47 %
2024	59,941	1.33 %
Thereafter	374,144	1.84 %
Total	$ 900,815	1.04 %

The following schedule summarizes the earliest interest rate reset date, or debt maturities, of total borrowings outstanding as of September 30, 2020, including callable and non-callable medium-term notes, assuming callable notes are redeemed at the initial call date:

Table 7.3

	Earliest Interest Rate Reset Date, or Debt Maturities, of Borrowings Outstanding	
	Amount	Weighted-Average Rate
	(dollars in thousands)	
Debt with interest rate resets, or debt maturities in:		
2020	$ 10,523,446	0.31 %
2021	3,219,231	1.55 %
2022	1,787,566	1.59 %
2023	2,026,445	1.62 %
2024	919,753	1.77 %
Thereafter	3,112,844	2.09 %
Total	$ 21,589,285	1.05 %

During the nine months ended September 30, 2020 and 2019, Farmer Mac called $2.7 billion and $0.7 billion of callable medium-term notes, respectively. The decrease in market interest rates throughout 2019 and continuing into the first half of 2020 led to an increase in called medium-term notes compared to the prior year.

Authority to Borrow from the U.S. Treasury

Farmer Mac's statutory charter authorizes it, upon satisfying certain conditions, to borrow up to $1.5 billion from the U.S. Treasury through the issuance of debt obligations to the U.S. Treasury. Any funds borrowed from the U.S. Treasury may be used solely for the purpose of fulfilling Farmer Mac's guarantee obligations. Any debt obligations issued by Farmer Mac under this authority would bear interest at a rate determined by the U.S. Treasury, taking into consideration the average rate on outstanding marketable obligations of the United States as of the last day of the last calendar month ending before the date of the purchase of the obligations from Farmer Mac. The charter requires Farmer Mac to repurchase any of its debt obligations held by the U.S. Treasury within a reasonable time. As of September 30, 2020, Farmer Mac had not used this borrowing authority.

Gains on Repurchase of Outstanding Debt

No outstanding debt repurchases were made in the nine months ended September 30, 2020 or 2019.

8. EQUITY

Preferred Stock

On August 20, 2020, Farmer Mac issued 4.8 million shares of 5.250% Non-Cumulative Preferred Stock, Series F ("Series F Preferred Stock"), which has a par value and liquidation preference of $25.00 per share, or $120.0 million aggregate outstanding. Farmer Mac incurred direct costs of $3.8 million related to the issuance of the Series F Preferred Stock. The dividend rate on the Series F Preferred Stock will remain at a non-cumulative, fixed rate of 5.250% per year, when, as, and if a dividend is declared by the Board of Directors of Farmer Mac, for so long as the Series F Preferred Stock remains outstanding. The Series F Preferred Stock has no maturity date, but Farmer Mac has the option to redeem the Series F Preferred Stock at any time on any dividend payment date on and after October 17, 2025.

On September 19, 2020, Farmer Mac used part of the net proceeds from the sale of the Series F Preferred Stock to redeem and repurchase all $60.0 million aggregate outstanding of Farmer Mac's 5.875% Non-Cumulative Preferred Stock, Series A ("Series A Preferred Stock"), plus any declared and unpaid dividends through and including the redemption date. As a result of the retirement of the Series A Preferred Stock, Farmer Mac recognized $1.7 million of deferred issuance costs, which is presented as "Loss on retirement of preferred stock" on the consolidated statements of operations.

In May 2020, Farmer Mac issued 3.18 million shares of 5.750% Non-Cumulative Preferred Stock, Series E ("Series E Preferred Stock"), which has a par value and liquidation preference of $25.00 per share, or $79.5 million aggregate outstanding. Farmer Mac incurred direct costs of $2.5 million related to the issuance of the Series E Preferred Stock. The dividend rate on the Series E Preferred Stock will remain at a non-cumulative, fixed rate of 5.750% per year, when, as, and if a dividend is declared by the Board of Directors of Farmer Mac, for so long as the Series E Preferred Stock remains outstanding. The Series E Preferred Stock has no maturity date, but Farmer Mac has the option to redeem the preferred stock at any time on any dividend payment date on and after July 17, 2025.

Common Stock

During each of the first, second, and third quarters in 2020, Farmer Mac paid a quarterly dividend of $0.80 per share on all classes of its common stock. For each quarter in 2019, Farmer Mac paid a quarterly dividend of $0.70 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. The share repurchase program, last modified on March 14, 2019, authorized Farmer Mac to repurchase up to $10.0 million of Farmer Mac's outstanding Class C non-voting common stock. During first quarter 2020, Farmer Mac repurchased approximately 4,000 shares of Class C non-voting common stock at a cost of approximately $0.2 million. Shortly after these repurchases were completed, Farmer Mac indefinitely suspended its share repurchase program in an effort to preserve capital and liquidity in view of market volatility and uncertainty caused by the COVID-19 pandemic. As of September 30, 2020, Farmer Mac had repurchased approximately 673,000 shares of Class C non-voting common stock at a cost of approximately $19.8 million under the share repurchase program since 2015. The program expires at the end of March 2021.

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, 2020 and December 31, 2019, 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, 2020, Farmer Mac's minimum capital requirement was $670.0 million and its core capital level was $984.2 million, which was $314.2 million above the minimum capital requirement as of that date. As of December 31, 2019, Farmer Mac's minimum capital requirement was $618.8 million and its core capital level was $815.4 million, which was $196.6 million above the minimum capital requirement as of that date.

In accordance with the Farm Credit Administration'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.

9. FAIR VALUE DISCLOSURES

Fair Value Classification and Transfers

The following tables present information about Farmer Mac's assets and liabilities measured at fair value on a recurring basis as of September 30, 2020 and December 31, 2019, respectively, and indicate the fair value hierarchy of the valuation techniques used by Farmer Mac to determine such fair value:

Table 9.1

Assets and Liabilities Measured at Fair Value as of September 30, 2020

	Level 1	Level 2	Level 3[(1)]	Total
		(in thousands)		
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 19,072	$ 19,072
Floating rate asset-backed securities	—	9,201	—	9,201
Floating rate Government/GSE guaranteed mortgage-backed securities	—	2,286,033	—	2,286,033
Fixed rate GSE guaranteed mortgage-backed securities	—	318	—	318
Fixed rate U.S. Treasuries	1,217,566	—	—	1,217,566
Total Investment Securities	1,217,566	2,295,552	19,072	3,532,190
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	7,511,638	7,511,638
Total Farmer Mac Guaranteed Securities	—	—	7,511,638	7,511,638
USDA Securities:				
Trading	—	—	6,830	6,830
Total USDA Securities	—	—	6,830	6,830
Financial derivatives	9	12,828	—	12,837
Total Assets at fair value	$ 1,217,575	$ 2,308,380	$ 7,537,540	$ 11,063,495
Liabilities:				
Financial derivatives	$ —	$ 37,357	$ —	$ 37,357
Total Liabilities at fair value	$ —	$ 37,357	$ —	$ 37,357
Non-recurring:				
Assets				
Loans held for sale	$ —	$ —	$ 22,086	$ 22,086
Total non-recurring assets at fair value	$ —	$ —	$ 22,086	$ 22,086

(1) Level 3 assets represent 32% of total assets and 68% of financial instruments measured at fair value.

Assets and Liabilities Measured at Fair Value as of December 31, 2019

	Level 1	Level 2	Level 3[1]	Total
		(in thousands)		
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 18,912	$ 18,912
Floating rate asset-backed securities	—	11,085	—	11,085
Floating rate Government/GSE guaranteed mortgage-backed securities	—	1,632,583	—	1,632,583
Fixed rate GSE guaranteed mortgage-backed securities	—	340	—	340
Fixed rate U.S. Treasuries	1,296,923	—	—	1,296,923
Total available-for-sale	1,296,923	1,644,008	18,912	2,959,843
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	7,143,025	7,143,025
Total Farmer Mac Guaranteed Securities	—	—	7,143,025	7,143,025
USDA Securities:				
Trading	—	—	8,913	8,913
Total USDA Securities	—	—	8,913	8,913
Financial derivatives	—	10,519	—	10,519
Total Assets at fair value	$ 1,296,923	$ 1,654,527	$ 7,170,850	$ 10,122,300
Liabilities:				
Financial derivatives	$ 51	$ 26,991	$ —	$ 27,042
Total Liabilities at fair value	$ 51	$ 26,991	$ —	$ 27,042

[1] Level 3 assets represent 33% of total assets and 71% of financial instruments measured at fair value.

There were no significant assets or liabilities measured at fair value on a non-recurring basis as of September 30, 2020 or December 31, 2019.

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 2020 and 2019, 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 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, 2020 and 2019.

Table 9.2

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended September 30, 2020

	Beginning Balance	Purchases	Sales	Settlements	Allowance for losses	Realized and unrealized gains/(losses) included in Income	Unrealized gains/(losses) included in Other Comprehensive Income	Ending Balance
					(in thousands)			
Recurring:								
Assets:								
Investment Securities:								
Available-for-sale:								
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 18,283	$ —	$ —	$ —	$ 1	$ —	$ 788	$ 19,072
Total available-for-sale	18,283	—	—	—	1	—	788	19,072
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	7,898,387	122,892	—	(513,864)	(96)	(41,832)	46,151	7,511,638
Total available-for-sale	7,898,387	122,892	—	(513,864)	(96)	(41,832)	46,151	7,511,638
USDA Securities:								
Trading	7,786	—	—	(697)	—	(259)	—	6,830
Total USDA Securities	7,786	—	—	(697)		(259)	—	6,830
Total Assets at fair value	$7,924,456	$ 122,892	$ —	$ (514,561)	$ (95)	$ (42,091)	$ 46,939	$ 7,537,540

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/(losses) included in Income	Unrealized gains/(losses) included in Other Comprehensive Income	Ending Balance
				(in thousands)			
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	—	9,506	(9,506)	—	—	—	—
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	$ 7,064,077	$ 349,654	$ (9,506)	$ (254,900)	$ 84,213	$ (22,846)	$ 7,210,692

Level 3 Assets and Liabilities Measured at Fair Value for the Nine Months Ended September 30, 2020

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized gains/(losses) included in Income	Unrealized gains/(losses) included in Other Comprehensive Income	Ending Balance
				(in thousands)				
Recurring:								
Assets:								
Investment Securities:								
Available-for-sale:								
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 18,912	$ —	$ —	$ —	$ (37)	$ —	$ 197	$ 19,072
Total available-for-sale	18,912	—	—	—	(37)	—	197	19,072
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	7,143,025	958,368	—	(826,380)	(330)	257,597	(20,642)	7,511,638
Total available-for-sale	7,143,025	958,368	—	(826,380)	(330)	257,597	(20,642)	7,511,638
USDA Securities:								
Trading	8,913	—	—	(1,910)	—	(173)	—	6,830
Total USDA Securities	8,913	—	—	(1,910)		(173)	—	6,830
Total Assets at fair value	$ 7,170,850	$ 958,368	$ —	$ (828,290)	$ (367)	$ 257,424	$ (20,445)	$ 7,537,540

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/(losses) included in Income	Unrealized gains/ (losses) included in Other Comprehensive Income	Ending Balance
				(in thousands)			
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

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, 2020 and December 31, 2019:

Table 9.3

	As of September 30, 2020			
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
			(in thousands)	
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 19,072	Indicative bids	Range of broker quotes	97.0% - 97.0% (97.0%)
Farmer Mac Guaranteed Securities:				
AgVantage	$ 7,511,638	Discounted cash flow	Discount rate	0.8% - 2.3% (1.2%)
USDA Securities	$ 6,830	Discounted cash flow	Discount rate	1.3% - 3.3% (2.6%)
			CPR	23% - 49% (43%)

	As of December 31, 2019			
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
			(in thousands)	
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 18,912	Indicative bids	Range of broker quotes	96.0% - 96.0% (96.0%)
Farmer Mac Guaranteed Securities:				
AgVantage	$ 7,143,025	Discounted cash flow	Discount rate	2.3% - 5.5% (2.6%)
USDA Securities	$ 8,913	Discounted cash flow	Discount rate	2.3% - 2.6% (2.1%)
			CPR	10% - 21% (19%)

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, 2020 and December 31, 2019:

Table 9.4

	As of September 30, 2020		As of December 31, 2019	
	Fair Value	Carrying Amount	Fair Value	Carrying Amount
	(in thousands)			
Financial assets:				
Cash and cash equivalents	$ 910,592	$ 910,592	$ 604,381	$ 604,381
Investment securities	3,578,375	3,577,222	3,005,828	3,004,875
Farmer Mac Guaranteed Securities	8,739,103	8,712,208	8,606,451	8,590,476
USDA Securities	2,522,001	2,417,678	2,294,671	2,241,073
Loans	8,450,522	8,105,647	7,317,091	6,981,440
Financial derivatives	12,837	12,837	10,519	10,519
Guarantee and commitment fees receivable	34,801	36,664	36,732	38,442
Financial liabilities:				
Notes payable	21,893,043	21,589,285	19,234,079	19,098,648
Debt securities of consolidated trusts held by third parties	1,337,741	1,292,416	1,663,177	1,616,504
Financial derivatives	37,357	37,357	27,042	27,042
Guarantee and commitment obligations	33,278	35,140	34,990	36,700

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.

10. 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, 2020 and 2019:

Table 10.1

Core Earnings by Business Segment

For the Three Months Ended September 30, 2020

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
				(in thousands)			
Net interest income	$ 18,093	$ 4,747	$ 5,709	$ 14,171	$ 1,941	$ —	$ 44,661
Less: reconciling adjustments(1)(2)(3)	(68)	1,118	1,230	4,430	431	(7,141)	—
Net effective spread	18,025	5,865	6,939	18,601	2,372	(7,141)	—
Guarantee and commitment fees(2)	4,111	213	328	7	—	(1,500)	3,159
Other income/(expense)(3)	443	135	—	—	(125)	(681)	(228)
Non-interest income/(loss)	4,554	348	328	7	(125)	(2,181)	2,931
Release of/(provision for) losses	300	—	(1,182)	228	1	—	(653)
(Provision for)/release of reserve for losses	(628)	—	81	—	—	—	(547)
Other non-interest expense	(5,381)	(1,643)	(1,438)	(2,160)	(3,938)	—	(14,560)
Non-interest expense(4)	(6,009)	(1,643)	(1,357)	(2,160)	(3,938)	—	(15,107)
Core earnings before income taxes	16,870	4,570	4,728	16,676	(1,690)	(9,322) (5)	31,832
Income tax (expense)/benefit	(3,543)	(960)	(993)	(3,502)	701	1,957	(6,340)
Core earnings before preferred stock dividends	13,327	3,610	3,735	13,174	(989)	(7,365) (5)	25,492
Preferred stock dividends	—	—	—	—	(5,166)	—	(5,166)
Loss on retirement of preferred stock	—	—	—	—	—	(1,667)	(1,667)
Segment core earnings/(losses)	$ 13,327	$ 3,610	$ 3,735	$ 13,174	$ (6,155)	$ (9,032) (5)	$ 18,659
Total assets at carrying value	$ 5,961,307	$ 2,487,687	$ 2,256,011	$ 8,716,923	$ 4,576,909	$ —	$ 23,998,837
Total on- and off-balance sheet program assets at principal balance	$ 8,249,349	$ 2,735,128	$ 2,685,309	$ 8,319,502	$ —	$ —	$ 21,989,288

(1) Includes 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, 2019

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
				(in thousands)			
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) Includes 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, 2020

	Farm & Ranch	USDA Guarantees	Rural Utilities	Institutional Credit	Corporate	Reconciling Adjustments	Consolidated Net Income
				(in thousands)			
Net interest income	$ 53,768	$ 14,691	$ 12,778	$ 48,059	$ 5,025	$ —	$ 134,321
Less: reconciling adjustments[1][2][3]	(4,072)	488	4,597	7,026	74	(8,113)	—
Net effective spread	49,696	15,179	17,375	55,085	5,099	(8,113)	—
Guarantee and commitment fees[2]	12,822	658	995	23	—	(5,003)	9,495
Other income/(expense)[3]	2,197	864	12	—	(413)	(3,048)	(388)
Non-interest income/(loss)	15,019	1,522	1,007	23	(413)	(8,051)	9,107
(Release of)/provision for losses	412	—	(4,704)	(222)	(28)	—	(4,542)
Provision for reserve for losses	(262)	—	(278)	—	—	—	(540)
Other non-interest expense	(16,632)	(5,045)	(4,428)	(6,606)	(12,171)	—	(44,882)
Non-interest expense[4]	(16,894)	(5,045)	(4,706)	(6,606)	(12,171)	—	(45,422)
Core earnings before income taxes	48,233	11,656	8,972	48,280	(7,513)	(16,164) [5]	93,464
Income tax (expense)/benefit	(10,129)	(2,448)	(1,884)	(10,139)	1,689	3,395	(19,516)
Core earnings before preferred stock dividends	38,104	9,208	7,088	38,141	(5,824)	(12,769) [5]	73,948
Preferred stock dividends	—	—	—	—	(12,536)	—	(12,536)
Loss on retirement of preferred stock	—	—	—	—	—	(1,667)	(1,667)
Segment core earnings/(losses)	$ 38,104	$ 9,208	$ 7,088	$ 38,141	$ (18,360)	$ (14,436) [5]	$ 59,745
Total assets at carrying value	$ 5,961,307	$ 2,487,687	$ 2,256,011	$ 8,716,923	$ 4,576,909	$ —	$ 23,998,837
Total on- and off-balance sheet program assets at principal balance	$ 8,249,349	$ 2,735,128	$ 2,685,309	$ 8,319,502	$ —	$ —	$ 21,989,288

(1) Includes 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
				(in thousands)			
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)	$ 30,868	$ 7,030	$ 8,087	$ 35,820	$ (12,547)	$ (4,674) (5)	$ 64,584
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) Includes 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, 2019, as filed with the SEC on February 25, 2020.

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 and Analysis of Financial Condition and Results of Operations" section, are "forward-looking statements" as defined in 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, including statements about COVID-19 and the impact of the pandemic on Farmer Mac, that may predict, forecast, indicate, or imply future results, performance, or achievements. These statements typically include terms such as "anticipates," "believes," "continues," "estimates," "expects," "forecasts," "intends," "outlook," "plans," "potential," "project," "target" and similar terms, and future or conditional tense verbs like "could," "may," "might," "should," "will," and "would." This report includes forward-looking statements addressing Farmer Mac's:

- prospects for earnings;
- prospects for growth in business volume;
- assessment of the impact of the COVID-19 pandemic on our business, financial results, financial condition, and business plans and strategies;
- 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, 2019 filed with the

SEC on February 25, 2020, the factors discussed under "Risk Factors" in Part II, Item 1A of this report, and uncertainties about:

- the duration, spread, and severity of the COVID-19 pandemic;
- the actions taken to address the COVID-19 pandemic, including government actions to mitigate the economic impact of the pandemic, how quickly and to what extent normal economic and operating conditions can resume, the possibility of future disruptions to economic recovery caused by additional outbreaks, regulatory measures or voluntary actions that may be put in place to limit the spread of COVID-19, and the duration and efficacy of such restrictions;
- the effects of the COVID-19 pandemic on the business operations of agricultural and rural borrowers, the capital markets, and Farmer Mac's business operations;
- 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 level of 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 on agricultural mortgage or rural utilities lending, borrower repayment capacity, or collateral values, including fluctuations in interest rates, changes in U.S. trade policies, fluctuations in export demand for U.S. agricultural products, and volatility in commodity prices;
- the degree to which Farmer Mac is exposed to interest rate risk resulting 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 the effects of weather 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. 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."

COVID-19 Update

Farmer Mac continues to closely monitor the effect of the COVID-19 pandemic on our financial condition and operations. We have maintained uninterrupted continuity of our operations while operating entirely remotely and our liquidity levels remain well above regulatory requirements, which has enabled us to execute our mission to support rural America during this pandemic. For example:

- we have maintained uninterrupted access to the debt capital markets;
- we provided a total of $1.3 billion in liquidity and lending capacity to lenders serving rural America during the quarter-ended September 30, 2020;
- we are working with our loan servicers and other partners to respond to and facilitate COVID-19-related payment deferment requests from borrowers, and as of September 30, 2020, we had executed COVID-19 payment deferments for $374.5 million of unpaid principal balance related to Farm & Ranch loans, Farm & Ranch LTSPCs, and USDA Securities to provide relief to borrowers;
- we are maintaining strong liquidity in our investment portfolio, as evidenced by our quarter-end cash position of $0.9 billion; and
- we have built and preserved capital and liquidity by issuing net new preferred stock of $60.0 million in the third quarter, issuing preferred stock of $79.5 million in the second quarter, and indefinitely suspending our common stock repurchase program in the first quarter.

The economic impacts of the COVID-19 pandemic caused our total allowance for credit losses to remain elevated in the third quarter. On January 1, 2020, we adopted Accounting Standards Update 2016-13, Financial Instruments - Credit Loss (Topic 326): Measurement of Credit Losses on Financial Instruments ("CECL"). Under CECL, our allowances and reserve for credit losses reflect our estimate of expected losses over the lives of our financial instruments based on historical information and reasonable and supportable forecasts. Both the adoption of this new accounting standard and the economic effects from the COVID-19 pandemic combined to increase the amount of our total allowance for losses from December 31, 2019 to September 30, 2020. The economic effects from the COVID-19 pandemic that most affected our estimate of expected credit losses were the effects on credit spreads and expectations for continued elevated levels of unemployment. Of the $5.1 million credit loss provision that we recorded in the first nine months of 2020, $1.9 million was attributable to updated economic factors, predominantly related to COVID-19. For more information about the impact of COVID-19 on Farmer Mac's expected credit losses, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans & Guarantees."

We continue to observe a heightened level of payment deferment requests from our loan servicers on behalf of borrowers in our Farm & Ranch loan portfolio, as well as from our AgVantage counterparties for loans collateralizing their obligations. For more information about Farm & Ranch payment deferments, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees." For more information about AgVantage loan collateral payment deferments, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Institutional."

Net Income and Core Earnings

The following table shows our net income attributable to common stockholders and core earnings for the periods presented. Core earnings and core earnings per share are non-GAAP measures that principally differ from net income attributable to common stockholders and earnings per common share, respectively, by excluding the effects of fair value fluctuations as well as the effects of specified infrequent or unusual transactions.

Table 1

	For the Three Months Ended		
	September 30, 2020	June 30, 2020	September 30, 2019
		(in thousands)	
Net income attributable to common stockholders	$ 18,659	$ 31,687	$ 14,406
Core earnings	27,691	26,347	23,395

The $13.0 million sequential decrease in net income attributable to common stockholders was primarily due to a $5.6 million after-tax decrease in the fair value of financial derivatives not designated as hedging instruments in hedge accounting relationships (undesignated financial derivatives) due to fluctuations in long-term interest rates, a $2.9 million after-tax decrease in net interest income, the recognition of $1.7 million in deferred issuance costs related to the redemption of the Series A Preferred Stock, a $1.2 million increase in preferred stock dividends, and a $0.9 million after-tax increase in the total provision for credit losses.

The $4.3 million year-over-year increase in net income attributable to common stockholders was primarily due to a $5.4 million after-tax increase in the fair value of undesignated financial derivatives due to fluctuations in long-term interest rates and a $3.6 million after-tax increase in net interest income. These increases were partially offset by a $1.7 million increase in preferred stock dividends, the recognition of $1.7 million in deferred issuance costs related to the redemption of the Series A Preferred Stock, and a $0.7 million after-tax increase in operating expenses.

The $1.3 million sequential increase in core earnings was primarily due to a $4.2 million after-tax increase in net effective spread, partially offset by a $0.9 million after-tax increase in the total provision for credit losses, a $1.2 million increase in preferred stock dividends, a $0.4 million after-tax increase in operating expenses, and a $0.5 million after-tax decrease in other income.

The $4.3 million year-over-year increase in core earnings was primarily due to a $7.4 million after-tax increase in net effective spread. This increase was partially offset by a $1.7 million increase in preferred stock dividends, a $0.8 million after-tax increase in operating expenses, and a $0.5 million after-tax increase in the total provision for credit losses.

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

The following table shows our net interest income and net effective spread in both dollars and percentage yield or spread for the periods presented. Farmer Mac uses net effective spread, a non-GAAP measure, as an alternative 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.

Table 2

	For the Three Months Ended		
	September 30, 2020	June 30, 2020	September 30, 2019
		(in thousands)	
Net interest income	$ 44,661	$ 48,348	$ 40,112
Net interest yield %	0.78 %	0.87 %	0.78 %
Net effective spread	51,802	46,469	42,461
Net effective spread %	0.96 %	0.89 %	0.90 %

The $3.7 million sequential decrease in net interest income was primarily due to a $2.7 million decrease in net fair value losses from derivatives designated in fair value hedge accounting relationships (designated financial derivatives) and a $3.0 million increase in funding and liquidity costs. This was partially offset by a $2.3 million increase related to new business volume. In percentage terms, the decrease of 0.09% was primarily attributable to a decrease of 0.05% in net fair value changes from designated financial derivatives, an increase of 0.06% in funding and liquidity costs, and an increase of 0.01% related to new business volume.

The $4.5 million year-over-year increase in net interest income was primarily due to net growth across most lines of business, which contributed to a $6.5 million increase in net interest income. This increase was partially offset by a $1.8 million increase in funding and liquidity costs. In percentage terms, net interest income remained at 0.78% in both third quarter 2020 and third quarter 2019.

The $5.3 million sequential increase in net effective spread was primarily due to a $2.3 million increase related to new business volume and a $3.1 million decrease in non-GAAP funding costs. In percentage terms, the increase of 0.07% was primarily attributable to the decrease in non-GAAP funding costs of 0.05% and an increase of 0.01% related to new business volume.

The $9.3 million year-over-year increase in net effective spread was primarily due to net growth in outstanding business volume, which increased net effective spread by approximately $6.5 million and a $2.2 million decrease in non-GAAP funding costs. In percentage terms, the increase of 0.06% was primarily attributable to an increase of 0.03% related to net volume growth, and a decrease in non-GAAP funding costs of 0.03%.

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 11 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 $22.0 billion as of September 30, 2020, a net decrease of $52.8 million from June 30, 2020, after taking into account all new business, maturities, and paydowns on existing assets. This net decrease was primarily attributable to net decreases of $335.3 million in the Institutional Credit line of business and $6.3 million in Rural Utilities, which was partially offset by net increases of $231.5 million in Farm & Ranch and $57.3 million in USDA Guarantees.

Farmer Mac's net business volume decrease of $52.8 million in third quarter 2020 was primarily attributable to maturities of $547.2 million in our Institutional Credit line of business due to reduced financing demand from those counterparties and tightening spreads in the institutional market.

The $231.5 million net increase in our Farm & Ranch line of business was comprised of a $399.5 million net increase in outstanding loan purchase volume, partially offset by net decreases of $159.7 million in loans held in consolidated trusts and $8.3 million in loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities. During third quarter 2020, Farmer Mac syndicated a $15.0 million position of a newly purchased $59.2 million agricultural loan. The transaction represents new activity for Farmer Mac to broaden its relationships across the agricultural lending spectrum.

The $6.3 million net decrease in our Rural Utilities line of business was comprised of a $14.1 million net decrease in loans under LTSPCs, partially offset by $7.8 million net increase in outstanding loan purchase volume. During the third quarter, as part of our renewable energy project finance strategic initiative, Farmer Mac purchased a $10.0 million loan in connection with a wind project financing.

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

Table 3

	As of	
	September 30, 2020	December 31, 2019
	(in thousands)	
Core capital	$ 984,182	$ 815,437
Capital in excess of minimum capital level required	314,235	196,669

The increase in capital in excess of the minimum capital level required was primarily due to the Board-authorized issuance of the Series E Preferred Stock and Series F Preferred Stock and the increase in retained earnings, partially offset by growth in our outstanding business volume and the Board-authorized redemption of the Series A Preferred Stock.

Current Expected Credit Loss

As noted above, Farmer Mac adopted CECL on January 1, 2020. Under CECL, we estimate and recognize expected credit losses over the lives of our financial assets. We base our estimate of expected losses on historical loss information and reasonable and supportable forecasts. In third quarter 2020, our reasonable and supportable forecasts included the impact of the COVID-19 pandemic on economic factors such as credit spreads and unemployment. Thus, our total provision for credit losses during the three months ended September 30, 2020 was affected by the ongoing economic effects of the COVID-19 pandemic.

As of September 30, 2020, Farmer Mac's allowance for losses on its on-balance sheet loan portfolio was $15.8 million (0.19% of all loans), compared to $10.5 million (0.15% of all loans) as of December 31, 2019. As of January 1, 2020, Farmer Mac recorded a cumulative transition adjustment of $1.5 million. For the three and nine months ended September 30, 2020, Farmer Mac recorded a provision to its allowance for loan losses of $0.9 million and $4.3 million, respectively.

As of September 30, 2020, Farmer Mac's reserve for losses on its off-balance sheet LTSPCs and Guaranteed Securities was $3.6 million (0.11% of all off-balance sheet LTSPCs and Guaranteed Securities), compared to $2.2 million (0.06% of all off-balance sheet LTSPCs and Guaranteed Securities) on December 31, 2019. As of January 1, 2020, Farmer Mac recorded a cumulative transition adjustment of $0.9 million. For both the three and nine months ended September 30, 2020, Farmer Mac recorded a provision to its reserve for its off-balance sheet portfolio of $0.5 million.

Credit Quality

The following table presents Farm & Ranch substandard assets, in dollars and as a percentage of the Farm & Ranch portfolio, for both on- and off-balance sheet assets as of September 30, 2020, June 30, 2020, and December 31, 2019:

Table 4

	Farm & Ranch Line of Business			
	On-Balance Sheet		Off-Balance Sheet	
	Substandard Assets	% of Portfolio	Substandard Assets	% of Portfolio
	(dollars in thousands)			
September 30, 2020	$ 195,455	3.3 %	$ 125,729	5.3 %
June 30, 2020	209,690	3.7 %	95,174	4.0 %
December 31, 2019	207,078	3.9 %	102,877	4.1 %
Increase/(decrease) from prior quarter-ending	$ (14,235)	(0.4)%	$ 30,555	1.3 %
Increase/(decrease) from prior year-ending	$ (11,623)	(0.6)%	$ 22,852	1.2 %

The decrease of $14.2 million in on-balance sheet substandard assets during third quarter 2020 was primarily driven by credit upgrades during the quarter. The overall Farm & Ranch portfolio grew by $239.8 million, which caused substandard assets as a percentage of the total on-balance sheet Farm & Ranch portfolio to decrease. The $30.6 million increase in substandard assets in our off-balance sheet Farm & Ranch portfolio during third quarter 2020 was primarily due to credit downgrades during the quarter. For an analysis of current loan-to-value ratios across substandard and other internally assigned risk ratings, see Table 27 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

The following table presents Farm & Ranch 90-day delinquencies, in dollars and as a percentage of the Farm & Ranch portfolio, for both on- and off-balance sheet assets as of September 30, 2020, June 30, 2020, and December 31, 2019:

Table 5

	Farm & Ranch Line of Business			
	On-Balance Sheet		Off-Balance Sheet	
	90-Day Delinquencies	% of Portfolio	90-Day Delinquencies	% of Portfolio
	(dollars in thousands)			
September 30, 2020	$ 74,040	1.26 %	$ 14,001	0.59 %
June 30, 2020	65,866	1.17 %	2,816	0.12 %
December 31, 2019	57,719	1.09 %	3,235	0.13 %
Increase/(decrease) from prior quarter-ending	$ 8,174	0.09 %	$ 11,185	0.47 %
Increase/(decrease) from prior year-ending	$ 16,321	0.17 %	$ 10,766	0.46 %

The sequential increase in 90-day delinquencies is primarily due to the seasonal payment pattern associated with loans that have annual (January 1st) and semi-annual (January 1st and July 1st) payment terms, which account for most of the loans in the Farm & Ranch portfolio. The sequential increase was primarily driven by two commodity groups – crops and livestock. Other commodity groups experienced small decreases in 90-day delinquencies or remained stable. The top ten borrower exposures over 90 days delinquent represented over half of the 90-day delinquencies as of September 30, 2020.

In the Rural Utilities portfolio, one $4.5 million loan was downgraded to substandard in the previous quarter and remained substandard in third quarter 2020. There were no delinquencies in the Rural Utilities portfolio as of September 30, 2020.

For more information about Farmer Mac's credit metrics, including 90-day delinquencies, the total allowance for losses, and substandard assets, as well as the effects of the COVID-19 pandemic on loan payment deferments, 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 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 example, we have excluded from core earnings losses on retirement of preferred stock and, in prior periods, the re-measurement of the deferred tax asset. 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 11 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Net Interest Income."

Results of Operations

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 6

Reconciliation of Net Income Attributable to Common Stockholders to Core Earnings		
	For the Three Months Ended	
	September 30, 2020	September 30, 2019
	(in thousands, except per share amounts)	
Net income attributable to common stockholders	$ 18,659	$ 14,406
Less reconciling items:		
Losses on undesignated financial derivatives due to fair value changes (see Table 14)	(4,149)	(7,117)
Losses on hedging activities due to fair value changes	(5,245)	(4,535)
Unrealized (losses)/gains on trading securities	(258)	49
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	97	(7)
Net effects of terminations or net settlements on financial derivatives	233	232
Issuance costs on the retirement of preferred stock	(1,667)	—
Income tax effect related to reconciling items	1,957	2,389
Sub-total	(9,032)	(8,989)
Core earnings	$ 27,691	$ 23,395
Composition of Core Earnings:		
Revenues:		
Net effective spread[1]	$ 51,802	$ 42,461
Guarantee and commitment fees[2]	4,659	5,208
Other[3]	453	389
Total revenues	56,914	48,058
Credit related expense (GAAP):		
Provision for losses	1,200	623
Total credit related expense	1,200	623
Operating expenses (GAAP):		
Compensation and employee benefits	8,791	7,654
General and administrative	5,044	5,253
Regulatory fees	725	688
Total operating expenses	14,560	13,595
Net earnings	41,154	33,840
Income tax expense[4]	8,297	7,018
Preferred stock dividends (GAAP)	5,166	3,427
Core earnings	$ 27,691	$ 23,395
Core earnings per share:		
Basic	$ 2.58	$ 2.19
Diluted	2.57	2.17
Weighted-average shares:		
Basic	10,734	10,706
Diluted	10,785	10,776

(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 11 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, 2020	September 30, 2019
	(in thousands, except per share amounts)	
Net income attributable to common stockholders	$ 59,745	$ 64,584
Less reconciling items:		
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(1,933)	5,608
Losses on hedging activities due to fair value changes	(13,846)	(8,790)
Unrealized (losses)/gains on trading securities	(173)	154
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	135	(162)
Net effects of terminations or net settlements on financial derivatives	(346)	(250)
Issuance costs on the retirement of preferred stock	(1,667)	(1,956)
Income tax effect related to reconciling items	3,394	722
Sub-total	(14,436)	(4,674)
Core earnings	$ 74,181	$ 69,258
Composition of Core Earnings:		
Revenues:		
Net effective spread[1]	$ 142,434	$ 122,617
Guarantee and commitment fees[2]	14,498	15,903
Other[3]	2,175	1,675
Total revenues	159,107	140,195
Credit related expense (GAAP):		
Provision for losses	5,082	650
REO operating expenses	—	64
Gains on sale of REO	(485)	—
Total credit related expense	4,597	714
Operating expenses (GAAP):		
Compensation and employee benefits	27,005	22,030
General and administrative	15,702	14,538
Regulatory fees	2,175	2,063
Total operating expenses	44,882	38,631
Net earnings	109,628	100,850
Income tax expense[4]	22,911	21,084
Preferred stock dividends (GAAP)	12,536	10,508
Core earnings	$ 74,181	$ 69,258
Core earnings per share:		
Basic	$ 6.92	$ 6.48
Diluted	6.88	6.43
Weighted-average shares:		
Basic	10,725	10,691
Diluted	10,781	10,774

(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 11 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 7

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, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	(in thousands, except per share amounts)			
GAAP - Basic EPS	$ 1.74	$ 1.34	$ 5.57	$ 6.04
Less reconciling items:				
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(0.39)	(0.66)	(0.18)	0.52
Losses on hedging activities due to fair value changes	(0.49)	(0.42)	(1.29)	(0.82)
Unrealized (losses)/gains on trading securities	(0.02)	—	(0.02)	0.01
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	0.01	—	0.01	(0.02)
Net effects of terminations or net settlements on financial derivatives	0.02	0.02	(0.03)	(0.02)
Issuance costs on the retirement of preferred stock	(0.15)	—	(0.16)	(0.18)
Income tax effect related to reconciling items	0.18	0.21	0.32	0.07
Sub-total	(0.84)	(0.85)	(1.35)	(0.44)
Core Earnings - Basic EPS	$ 2.58	$ 2.19	$ 6.92	$ 6.48
Shares used in per share calculation (GAAP and Core Earnings)	10,734	10,706	10,725	10,691

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, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	(in thousands, except per share amounts)			
GAAP - Diluted EPS	$ 1.73	$ 1.33	$ 5.54	$ 5.99
Less reconciling items:				
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(0.39)	(0.66)	(0.18)	0.52
Losses on hedging activities due to fair value changes	(0.49)	(0.42)	(1.28)	(0.82)
Unrealized (losses)/gains on trading securities	(0.02)	—	(0.02)	0.01
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	0.01	—	0.01	(0.02)
Net effects of terminations or net settlements on financial derivatives	0.02	0.02	(0.03)	(0.02)
Issuance costs on the retirement of preferred stock	(0.15)	—	(0.15)	(0.18)
Income tax effect related to reconciling items	0.18	0.22	0.31	0.07
Sub-total	(0.84)	(0.84)	(1.34)	(0.44)
Core Earnings - Diluted EPS	$ 2.57	$ 2.17	$ 6.88	$ 6.43
Shares used in per share calculation (GAAP and Core Earnings)	10,785	10,776	10,781	10,774

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

1. Losses on financial derivatives due to fair value changes are presented by two reconciling items in Table 6 above: (a) (Losses)/gains on undesignated financial derivatives due to fair value changes; and (b) Losses on hedging activities due to fair value changes. The table below calculates the non-GAAP reconciling item for losses on hedging activities due to fair value changes:

Table 8

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, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	(in thousands)			
Losses due to fair value changes (see Table 4.2)	$ (5,047)	$ (4,490)	$ (13,109)	$ (8,617)
Initial cash payment (received) at inception of swap	(198)	(45)	(737)	(173)
Losses on hedging activities due to fair value changes	$ (5,245)	$ (4,535)	$ (13,846)	$ (8,790)

2. Unrealized gains/(losses) on trading securities. The unrealized gains/(losses) on trading securities are reported on Farmer Mac's consolidated statements of operations, which represent changes during the period in fair values for trading assets remaining on Farmer Mac's balance sheet as of the end of the reporting period.

3. Amortization of premiums/discounts and deferred gains on assets consolidated at fair value. The amount of this non-GAAP reconciling item is the recorded amount of premium, discount, or deferred gain amortization during the reporting period on those assets for which the premium, discount, or deferred gain was based on the application of an accounting principle (e.g., consolidation of variable interest entities) rather than on a cash transaction (e.g., a purchase price premium or discount).

4. The net 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 purposes of core earnings, 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 retirements of the Series A Preferred Stock and Series B Preferred Stock in third quarter 2020 and second quarter 2019, respectively, has been excluded from core earnings because they are not frequently occurring transactions, nor are they 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, 2020 and 2019. 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 9

	For the Nine Months Ended					
	September 30, 2020			September 30, 2019		
	Average Balance	Income/ Expense	Average Rate	Average Balance	Income/ Expense	Average Rate
	(dollars in thousands)					
Interest-earning assets:						
Cash and investments	$ 3,965,371	$ 35,236	1.18 %	$ 3,118,378	$ 61,718	2.64 %
Loans, Farmer Mac Guaranteed Securities and USDA Securities(1)	16,780,558	309,051	2.46 %	15,019,083	374,767	3.33 %
Total interest-earning assets	20,745,929	344,287	2.21 %	18,137,461	436,485	3.21 %
Funding:						
Notes payable due within one year	3,626,550	21,654	0.80 %	3,785,429	67,930	2.39 %
Notes payable due after one year(2)	16,828,032	193,315	1.53 %	13,760,960	250,428	2.43 %
Total interest-bearing liabilities(3)	20,454,582	214,969	1.40 %	17,546,389	318,358	2.42 %
Net non-interest-bearing funding	291,347	—		591,072	—	
Total funding	20,745,929	214,969	1.38 %	18,137,461	318,358	2.34 %
Net interest income/yield prior to consolidation of certain trusts	20,745,929	129,318	0.83 %	18,137,461	118,127	0.87 %
Net effect of consolidated trusts(4)	1,436,353	5,003	0.46 %	1,546,443	5,638	0.49 %
Net interest income/yield	$ 22,182,282	$ 134,321	0.81 %	$19,683,904	$ 123,765	0.84 %

(1) Excludes interest income of $41.8 million and $45.7 million, in the first nine months of 2020 and 2019, 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 $36.8 million and $40.0 million in the first nine months of 2020 and 2019, 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.

The $10.6 million year-over-year increase in net interest income was primarily due to net growth across most lines of business, which contributed $16.6 million towards the increase in net interest income. This increase was partially offset by the decrease of $4.5 million in net fair value changes from fair value hedge accounting relationships as a result of material changes in market interest rates and a $1.8 million increase in funding and liquidity costs. In percentage terms, the decrease of 0.03% was primarily attributable to an increase of 0.04% in funding and liquidity costs and a decrease of 0.03% in net fair value changes from fair value hedge accounting relationships. These decreases were partially offset by an increase of 0.03% related to net volume growth.

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 10

	For the Nine Months Ended September 30, 2020 Compared to Same Period in 2019		
	Increase/(Decrease) Due to		
	Rate	Volume	Total
		(in thousands)	
Income from interest-earning assets:			
Cash and investments	$ (40,196)	$ 13,714	$ (26,482)
Loans, Farmer Mac Guaranteed Securities and USDA Securities	(106,109)	40,393	(65,716)
Total	(146,305)	54,107	(92,198)
Expense from other interest-bearing liabilities	(149,880)	46,491	(103,389)
Change in net interest income prior to consolidation of certain trusts[1]	$ 3,575	$ 7,616	$ 11,191

(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 accounting 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 net effective spread.

Table 11

	For the Three Months Ended				For the Nine Months Ended			
	September 30, 2020		September 30, 2019		September 30, 2020		September 30, 2019	
	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield
	(dollars in thousands)							
Net interest income/yield	$ 44,661	0.78 %	$ 40,112	0.78 %	$134,321	0.80 %	$123,765	0.84 %
Net effects of consolidated trusts	(1,500)	0.02 %	(1,859)	0.02 %	(5,003)	0.03 %	(5,638)	0.03 %
Expense related to undesignated financial derivatives	3,613	0.07 %	(268)	— %	9	— %	(4,370)	(0.03)%
Amortization of premiums/discounts on assets consolidated at fair value	(81)	— %	28	— %	(92)	— %	341	— %
Amortization of losses due to terminations or net settlements on financial derivatives	62	— %	(42)	— %	90	— %	(98)	— %
Fair value changes on fair value hedge relationships	5,047	0.09 %	4,490	0.10 %	13,109	0.09 %	8,617	0.06 %
Net effective spread	$ 51,802	0.96 %	$ 42,461	0.90 %	$142,434	0.92 %	$122,617	0.90 %

For the three months ended September 30, 2020 compared to the same period in 2019, the $9.3 million increase in net effective spread in dollars was primarily due to net growth in outstanding business volume, which increased net effective spread by approximately $6.5 million, and a $2.2 million decrease in non-GAAP funding costs.

For the first nine months of 2020 compared to the same period in 2019, the $19.8 million increase in net effective spread in dollars was primarily due to net growth in outstanding business volume, which increased net effective spread by approximately $16.6 million, and a $2.8 million decrease in non-GAAP funding costs.

See Note 10 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 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, 2020 and 2019:

Table 12

	As of September 30, 2020			As of September 30, 2019		
	Allowance for Losses	Reserve for Losses	Total Allowance for Losses	Allowance for Losses	Reserve for Losses	Total Allowance for Losses
			(in thousands)			
For the Three Months Ended:						
Beginning balance	$ 15,758	$ 3,020	$ 18,778	$ 7,264	$ 1,880	$ 9,144
Provision for/(release of) losses	646	548	1,194	760	(137)	623
Ending Balance	$ 16,404	$ 3,568	$ 19,972	$ 8,024	$ 1,743	$ 9,767
For the Nine Months Ended:						
Beginning balance	$ 10,454	$ 2,164	$ 12,618	$ 7,017	$ 2,167	$ 9,184
Cumulative effect adjustment from adoption of current expected credit loss standard	1,793	863	2,656	—	—	—
Adjusted beginning balance	12,247	3,027	15,274	7,017	2,167	9,184
Provision for/(release of) losses	4,551	541	5,092	1,074	(424)	650
Charge-offs	(394)	—	(394)	(67)	—	(67)
Ending balance	$ 16,404	$ 3,568	$ 19,972	$ 8,024	$ 1,743	$ 9,767

The cumulative effect adjustment from the adoption of CECL on January 1, 2020 was $2.7 million and was recorded directly to retained earnings, net of tax. The transition adjustment was the difference between (1) the total allowance for losses on December 31, 2019 that reflected probable incurred losses and (2) the total allowance for losses on January 1, 2020 that reflected expected losses.

The cumulative effect adjustment for credit losses on on-balance sheet assets was $1.8 million and was comprised of an increase of $5.4 million to the allowance for losses on Rural Utilities loans and Farmer Mac Guaranteed Securities and a $3.6 million decrease in the allowance for losses on Farm & Ranch loans and Farmer Mac Guaranteed Securities. Although Farmer Mac has never experienced any credit losses in its portfolio of Rural Utilities loans and Farmer Mac Guaranteed Securities, our estimate of expected losses is based upon reasonable and supportable forecasts over the expected lives of these assets. The reduction in the allowance for losses on Farm & Ranch loans and Farmer Mac Guaranteed Securities reflects the expected recovery rate based on loan-to-value ratios in those portfolios.

The cumulative effect adjustment for credit losses on LTSPCs was $0.9 million and was comprised of an increase of $1.0 million on Rural Utilities LTSPCs and a decrease of $0.1 million on Farm & Ranch LTSPCs.

For third quarter 2020, our forecasts continued to include the effects of the COVID-19 pandemic on economic factors such as land values, gross domestic product, credit spreads, and unemployment. The provision to Farmer Mac's allowance for losses for on-balance sheet assets was $0.6 million and was comprised of $1.2 million for expected losses on Rural Utilities loans and Farmer Mac Guaranteed Securities and a release of $0.5 million on Farm & Ranch loans and Farmer Mac Guaranteed Securities. Our economic factor forecast in the third quarter 2020 improved from our second quarter 2020 forecast. However, the impact of our updated economic factor forecast on our Rural Utilities portfolio was more than offset by net business volume growth. Similarly, updated third quarter economic factors had an impact on our Farm & Ranch portfolio where improving commodity prices and lower expected volatility in land values decreased expected losses for our lowest risk-rated assets. The provision to Farmer Mac's reserve for losses on our off-balance sheet portfolio was $0.5 million, primarily related to Farm & Ranch LTSPCs, and was driven by deteriorated credit quality in that portfolio in the third quarter.

Our estimates of expected losses are based on historical information and reasonable and supportable forecasts. Our reasonable and supportable forecasts incorporate economic factor forecasts and are sensitive to changes in those economics factor forecasts. As of September 30, 2020, our estimate of expected credit losses considered the economic volatility from the COVID-19 pandemic. In particular, the continued stabilization of credit spreads and uncertainty in unemployment expectations were the two economic factors that had the most significant impact. These economic factors also had a more significant impact on our estimate of expected losses in Farmer Mac's Rural Utilities portfolio than in the Farm & Ranch portfolio because of stable farm land values and stable credit quality in the Farm & Ranch portfolio during the first, second, and third quarters.

See Notes 5 and 6 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. The following table presents 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, for the three and nine months ended September 30, 2020 and 2019:

Table 13

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2020	September 30, 2019	$	%	September 30, 2020	September 30, 2019	$	%
				(dollars in thousands)				
Guarantee and commitment fees	$ 3,159	$ 3,349	$ (190)	(6)%	$ 9,495	$ 10,265	$ (770)	(8)%

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. The decrease in guarantee and commitment fees for the three and nine months ended September 30, 2020 compared to the same periods in 2019 was primarily due to decreased LTSPC volume. As adjusted for the core earnings presentation, guarantee and commitment fees were $4.7 million and $14.5 million for the three and nine months ended September 30, 2020, respectively, compared to $5.2 million and $15.9 million for the three and nine months ended September 30, 2019, 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, 2020 and 2019 are summarized in the following table:

Table 14

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2020	September 30, 2019	$	%	September 30, 2020	September 30, 2019	$	%
	(dollars in thousands)							
(Losses)/gains due to fair value changes	$ (4,149)	$ (7,117)	$ 2,968	(42)%	$ (1,933)	$ 5,608	$ (7,541)	(134)%
Accrual of contractual payments	3,613	(268)	3,881	(1448)%	10	(4,370)	4,380	(100)%
(Losses)/gains due to terminations or net settlements	(28)	25	(53)	(212)%	(1,416)	(45)	(1,371)	3,047 %
(Losses)/gains on financial derivatives	$ (564)	$ (7,360)	$ 6,796	(92)%	$ (3,339)	$ 1,193	$ (4,532)	(380)%

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 undesignated financial derivatives is shown as expense related to financial derivatives. Payments or receipts to terminate undesignated derivative positions or net cash settled forward sales contracts on the debt of other GSEs and undesignated U.S. Treasury security futures and initial cash payments received upon the inception of certain undesignated swaps are included in "(Losses)/gains due to terminations or net settlements" in the table above. For undesignated 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. 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. The following table presents other income for the three and nine months ended September 30, 2020 and 2019:

Table 15

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2020	September 30, 2019	$	%	September 30, 2020	September 30, 2019	$	%
	(dollars in thousands)							
Late fees	$ 236	$ 360	$ (124)	(34)%	$ 1,124	$ 929	$ 195	21 %
Other	358	170	188	111 %	1,515	449	1,066	237 %
Total other income	$ 594	$ 530	$ 64	12 %	$ 2,639	$ 1,378	$ 1,261	92 %

The increase in other fees is primarily due to an increase in the fees received from borrowers to modify their long-term fixed borrowing rate to a new lower rate.

Operating Expenses. The components of operating expenses for the three and nine months ended September 30, 2020 and 2019 are summarized in the following table:

Table 16

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2020	September 30, 2019	$	%	September 30, 2020	September 30, 2019	$	%
	(dollars in thousands)							
Compensation and employee benefits	$ 8,791	$ 7,654	$ 1,137	15 %	$ 27,005	$ 22,030	$ 4,975	23 %
General and administrative	5,044	5,253	(209)	(4)%	15,702	14,538	1,164	8 %
Regulatory fees	725	688	37	5 %	2,175	2,063	112	5 %
Total Operating Expenses	$ 14,560	$ 13,595	$ 965	7 %	$ 44,882	$ 38,631	$ 6,251	16 %

a. Compensation and Employee Benefits. The increase in compensation and employee benefits expenses for the three months ended September 30, 2020 compared to the same period in 2019 was primarily due to lower than expected bonus payments in the prior year period and increased headcount in the current period. The increase in compensation and employee benefits expenses for the nine months ended September 30, 2020 compared to the same period in 2019 was primarily due to an increase in bonus expense in first quarter 2020 due to 2019 financial performance and the severance payments made to an executive who resigned in first quarter 2020.

b. General and Administrative Expenses (G&A). The decrease in G&A expenses for the three months ended September 30, 2020 compared to the same period in 2019 was primarily due to reduced travel to attend in-person meetings and industry events. The increase in G&A expenses for the nine months ended September 30, 2020 compared to the same period in 2019 was primarily due to increased spending on software licenses and information technology consultants to support growth and strategic initiatives.

Income Tax Expense. The following table presents income tax expense and the effective income tax rate for the three and nine months ended September 30, 2020 and 2019:

Table 17

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2020	September 30, 2019	$	%	September 30, 2020	September 30, 2019	$	%
	(dollars in thousands)							
Income tax expense	$ 6,340	$ 4,629	$ 1,711	37 %	$ 19,516	$ 20,362	$ (846)	(4)%
Effective tax rate	19.9 %	20.6 %		(0.7)%	20.9 %	20.9 %		— %

Business Volume.

The following table sets forth the net growth or decrease under Farmer Mac's lines of business for the three and nine months ended September 30, 2020 and 2019:

Table 18

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

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	Net Growth/ (Decrease)	Net Growth/ (Decrease)	Net Growth/ (Decrease)	Net Growth/ (Decrease)
	(in thousands)			
Farm & Ranch:				
Loans	$ 239,812	$ 82,707	$ 580,768	$ 248,643
LTSPCs	(8,313)	19,668	(108,368)	(88,888)
USDA Guarantees:				
USDA Securities	76,949	41,027	193,487	15,775
Farmer Mac Guaranteed USDA Securities	(19,626)	5,342	(78,533)	36,368
Rural Utilities:				
Loans	7,786	85,623	438,062	673,930
LTSPCs	(14,100)	(8,692)	(33,326)	(33,444)
Institutional Credit:				
AgVantage securities	(335,328)	(40,051)	(120,744)	355,450
Total purchases, guarantees, LTSPCs, and AgVantage securities	$ (52,820)	$ 185,624	$ 871,346	$ 1,207,834

Our outstanding business volume was $22.0 billion as of September 30, 2020, a net decrease of $52.8 million from June 30, 2020 after taking into account all new business, maturities, and repayments on existing assets. This net decrease consisted of decreases of $335.3 million in Institutional Credit and $6.3 million in Rural Utilities, partially offset by increases of $231.5 million in Farm & Ranch and $57.3 million in USDA Guarantees.

The $231.5 million net increase in our Farm & Ranch line of business was comprised of a $399.5 million net increase in outstanding loan purchase volume, partially offset by net decreases of $159.7 million in loans held in consolidated trusts and $8.3 million in loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities. The net growth in third quarter 2020 reflected our ability to retain borrowers in a decreasing interest rate environment by proactively engaging with our customers and adjusting their rates and loan sizes to reflect current market conditions and their specific funding needs. Our net growth of 21.1% in Farm & Ranch loan purchases over the twelve months ended September 30, 2020 is significantly higher than the 3.5% net growth of the overall agricultural mortgage loan market over the twelve months ended June 30, 2020 (based on our analysis of bank and Farm Credit System call report data). During third quarter 2020, Farmer Mac syndicated a $15.0 million position of a newly purchased $59.2 million agricultural loan. This transaction represents new activity for Farmer Mac to broaden its relationships across the agricultural lending spectrum.

Our USDA Guarantees line of business grew by $57.3 million in third quarter 2020. The third quarter gross volume of $225.5 million was the highest gross volume that we have ever recorded in any quarter. This growth reflected the positive effect of adjustments that we made to our product structure in the second half of 2019 to more effectively meet customer demands in an increasingly competitive environment and in response to 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.

The $335.3 million net decrease in the Institutional Credit line of business during third quarter 2020 was due primarily to three large counterparties who reduced their amount of outstanding credit in connection with scheduled maturities and payments on multiple AgVantage bonds. Changes in quarterly AgVantage securities volume are primarily driven by the generally larger transaction sizes for that product, scheduled maturity amounts for a particular quarter, the liquidity needs of Farmer Mac's AgVantage counterparties, and changes in the pricing and availability of wholesale funding.

The $6.3 million net decrease in our Rural Utilities line of business was comprised of a $14.1 million net decrease in loans under LTSPCs, partially offset by $7.8 million net increase in outstanding loan purchase volume. During the third quarter, as part of our renewable energy project finance strategic initiative, Farmer Mac purchased a $10.0 million loan in connection with a wind project financing.

The level and composition of Farmer Mac's outstanding business volume is based on the relationship between new business, maturities, and repayments on existing assets from quarter to quarter. This relationship in turn depends on a variety of factors both internal and external to Farmer Mac. The external factors include general market forces, competition, and our counterparties' liquidity needs, access to alternative funding, desired products, and assessment of strategic factors. The internal factors include our assessment of profitability, mission fulfillment, credit risk, and customer relationships. 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 information about the Farmer Mac Guaranteed Securities issued during the periods indicated:

Table 19

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2020	September 30, 2019	September 30, 2020	September 30, 2019
	(in thousands)			
Loans securitized and sold as Farm & Ranch Guaranteed Securities	$ 36,562	$ 23,539	$ 64,612	$ 141,543
Farmer Mac Guaranteed USDA Securities	—	9,506	—	57,853
AgVantage securities	211,908	402,611	1,202,327	1,887,475
Total Farmer Mac Guaranteed Securities Issuances	$ 248,470	$ 435,656	$ 1,266,939	$ 2,086,871

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 2020 and 2019 was less than one year. Of those loans, 68% and 57% had principal amortization periods longer than the maturity date, resulting in balloon payments at maturity, with a weighted-average remaining term to maturity of 23.2 years and 15.7 years for each period, respectively.

During third quarter 2020 and 2019, Farmer Mac securitized some of the Farm & Ranch loans it had purchased and sold the resulting Farmer Mac Guaranteed Securities, as shown above. During the three and nine months ended September 30, 2020 and 2019, 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, 2020, no Farmer Mac Guaranteed Securities were sold to a related party to Farmer Mac. For the same periods in 2019, none and $63.1 million, respectively, of Farmer Mac Guaranteed Securities were sold to a related party (related by virtue of its owning more than 10% of Farmer Mac's Class A voting common stock).

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 20

Lines of Business - Outstanding Business Volume

	As of September 30, 2020	As of December 31, 2019
	(in thousands)	
Farm & Ranch:		
Loans	$ 4,580,917	$ 3,675,640
Loans held in trusts:		
Beneficial interests owned by third party investors	1,276,407	1,600,917
LTSPCs	2,306,258	2,393,071
Guaranteed Securities	85,767	107,322
USDA Guarantees:		
USDA Securities	2,388,033	2,199,072
Farmer Mac Guaranteed USDA Securities	347,095	421,103
Rural Utilities:		
Loans	2,109,355	1,671,293
LTSPCs[1]	575,954	609,278
Institutional Credit		
AgVantage Securities	8,319,502	8,440,246
Total	$ 21,989,288	$ 21,117,942

(1) As of both September 30, 2020 and December 31, 2019, includes $20.0 million related to one-year loan purchase commitments on which Farmer Mac receives a nominal unused commitment fee.

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, 2020:

Table 21

Schedule of Principal Amortization as of September 30, 2020

	Loans Held	Loans Underlying Off-Balance Sheet Farmer Mac Guaranteed Securities and LTSPCs	USDA Securities and Farmer Mac Guaranteed USDA Securities	Total
		(in thousands)		
2020	$ 45,391	$ 49,343	$ 28,755	$ 123,489
2021	345,908	284,701	117,967	748,576
2022	329,020	229,875	118,498	677,393
2023	336,023	207,961	122,972	666,956
2024	338,270	180,155	122,258	640,683
Thereafter	6,572,067	2,015,944	2,224,678	10,812,689
Total	$ 7,966,679	$ 2,967,979	$ 2,735,128	$ 13,669,786

Of the $22.0 billion outstanding principal balance of volume included in Farmer Mac's four lines of business as of September 30, 2020, $8.3 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, 2020:

Table 22

AgVantage Balances by Year of Maturity

	As of September 30, 2020
	(in thousands)
2020	$ 633,585
2021	1,830,376
2022	1,585,268
2023	1,012,894
2024	828,108
Thereafter[(1)]	2,429,271
Total	$ 8,319,502

(1) Includes various maturities ranging from 2025 to 2044.

The weighted-average remaining maturity of the outstanding AgVantage securities shown in the table above was 4.7 years as of September 30, 2020.

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. The pace of Farmer Mac's growth will depend on the capital and liquidity needs of the lending institutions in the agricultural and rural financing business as well as the overall health of agriculture and rural borrowers in the sectors we serve. Farmer Mac foresees opportunities for profitable 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 or concentration limits, Farmer Mac can provide relief for those institutions through loan and portfolio 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 deepening business relationships with eligible counterparties, broadband-related capital expenditures, and the exploration of 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 and 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 increase the average transaction size within Farmer Mac's Farm & Ranch line of business.

- Expansion and refinancing opportunities for agricultural producers resulting from a decrease in interest rates have 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.

The COVID-19 pandemic and related efforts to contain it continue to create disruptions to the global economy. Government stimulus programs designed to mitigate the economic impacts of the pandemic as well as significant liquidity support by the Federal Reserve to facilitate the functioning of the capital markets has reduced volatility to the economy and the sectors we serve. However, the duration, severity, and continued spread of the pandemic and the ongoing effectiveness of government efforts taken to contain COVID-19 and mitigate public health and economic effects continue to evolve and remain uncertain. For a further discussion of the uncertainties and risks associated with the COVID-19 pandemic on Farmer Mac and its business, see the factors discussed under "Risk Factors" in Part II, Item 1A of this report

Farmer Mac's mission is to support rural America during this pandemic, and the disruptions caused by COVID-19 may present some new and expanded opportunities for Farmer Mac to help meet the financing needs of rural America as well as presenting uncertainties and risks. The pandemic's effect on our growth objectives and outlook will depend on many factors, including:

- The potential negative economic impact to rural and agricultural borrowers due to a resurgence and prolonging of the pandemic and recession, the length of time before normal economic and operating conditions can resume, and whether there are lingering effects to the economy after the COVID-19 pandemic is over as a result of the disruption to the global economy, the domestic agricultural economy, and recession.

- Increasing borrower payment deferral requests and the duration of approved deferrals, including payments made to holders of Farmer Mac Guaranteed Securities to cover principal and interest shortfalls, could consume some capital which would otherwise have been available for certain planned growth initiatives. For more information about the impact of COVID-19 on Farmer Mac's payment deferral requests received to date, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

- Stress on commodity and agriculture exports as a result of global trade disruptions caused by a resurgence of the COVID-19 pandemic and geopolitical trade disputes, which could create downward pressure on commodity prices and further stress borrowers' liquidity and negatively impact loan growth opportunities.

- The inability of borrowers in the pandemic to close on agricultural or renewable energy loans due to limited access to local or state administrative offices, delays in receiving equipment components, installation inefficiencies caused by social distancing among workers, and difficulties in obtaining inspections and grid interconnection on a timely basis could limit our opportunities to purchase agricultural or renewable energy loans.

- Delays and postponements of planned or potential mergers and acquisitions, consolidations, and vertical integrations as a result of the COVID-19 pandemic and, consequently, a potential reduction in the need for Farmer Mac's products and services until the global economy recovers and the flow of transactions returns to pre-pandemic levels.

- Disruptions in the capital markets and the widening of credit spreads could impact Farmer Mac's funding costs and could result in higher interest rates charged for our products and services, which could adversely affect our competitiveness in the sectors we serve.

- If borrowers seek to obtain additional financing and liquidity from lenders to maintain operations and production during this time, or to make up for lost productivity due to shutdowns, delays, and social distancing requirements, these short-term funding requirements could create additional growth opportunities for Farmer Mac as other lenders look to manage lending limits and credit concentrations as short-term financing demands arise.

- Financial market volatility, coupled with uncertainty regarding the long-term impacts of the pandemic, is causing some financial institutions to delay or cease capital deployment to many sectors that Farmer Mac serves. While these reductions could reduce our loan purchase opportunities, Farmer Mac could also provide a much-needed source of secondary market liquidity to help stimulate capital deployment during this time of uncertainty.

Operating Expense. 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 continued increases in its operating expenses over the next several years corresponding to business and revenue growth. We expect these efforts to continue and increase over the next 12 - 18 months as we innovate and grow our business.

Operations. On March 12, 2020, Farmer Mac activated its business continuity plan and has been operating uninterruptedly since then, with all of its employees working remotely from their homes. Farmer Mac has provided guidance and support to all of its employees to ensure that they have the tools and knowledge needed to effectively work from home, and Farmer Mac's technology platform and business continuity plan have been functioning as designed in support of all functions of the organization with no material disruption of business. As a secondary market participant in the agricultural and rural utility lending space, Farmer Mac's business model is already based on a remote interface with its customers and vendors. We do not expect Farmer Mac's remote-working environment to have a material effect on our operations either in the near term or for the foreseeable future.

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. The interconnectedness between sectors typically results in cycles where one or more segments may be under stress while others are not.

The COVID-19 pandemic continues to impact the agricultural sector, although economic conditions continued to improve during third quarter 2020. Sudden school and restaurant closures in March and April dramatically altered the supply and demand functions for food. U.S. Census Advance Retail Sales Data indicates that, after dropping 50 percent in April, U.S. consumer spending for food services away from home rebounded to 85 percent of pre-pandemic levels. Much of the decline has been picked up in consumer spending at grocery stores, which was up more than 10 percent in September 2020 compared to the prior year. Farm production and food processing take a higher net margin of the food dollar spent at home, so the shift of consumer spending on food at home could offset some of the losses from sales to restaurants and schools. According to data from the U.S. Energy Information Administration, after dropping nearly 50 percent in April, ethanol production rebounded to over 90 percent of pre-pandemic levels through October as drivers returned to the roads. Ethanol is a primary demand driver for corn. Many agricultural commodity prices, rebounded significantly in September and October on reduced global supplies and increased foreign demand, particularly from China. Farm labor and food processing worker health and availability remain a top industry concern as a resurgence of COVID-19 cases could adversely affect the food processing industry again this year and into 2021.

The decline in revenue experienced by many agricultural producers during the first nine months of 2020 had multiple offsets to help support producers' profitability. First, farm expenses fell for many producers during the first half of 2020. Lower energy prices improved the cost of fuel and fertilizer ahead of the planting season. Lower grain prices in the second quarter led to a temporary decrease in animal feed input costs, and lower replacement animal prices improved the cost structure for many protein producers. Second, USDA issued a final $3.7 billion Market Facilitation Program (MFP) cash payment in April and May 2020 to address market losses from trade disruptions. Third, in response to the COVID-19 pandemic, Congress passed a series of measures, including the CARES Act on March 27, 2020, which provided over $2 trillion in economic stimulus to support various aspects of the U.S. economy. The

CARES Act contained a $9.5 billion emergency fund for the USDA aimed toward providing help to livestock, dairy, and produce providers who sell locally. It also included a $14 billion replenishment of the Commodity Credit Corporation ("CCC"), a line of credit at the U.S. Treasury Department that USDA can use to help crop and livestock producers. In April 2020, the USDA announced that it would provide $19 billion of assistance through the Coronavirus Food Assistance Program ("CFAP"). CFAP used the funding and authorities provided in the CARES Act, the Families First Coronavirus Response Act, and other USDA existing authorities to provide $16 billion in direct payments to distribute to producers and $3 billion in food purchases. As of October 25, 2020, the USDA had distributed $10.3 billion in CFAP payments. Farmers and ranchers were also eligible to participate in the Small Business Administration's Paycheck Protection Program (PPP). Through the close of the PPP application period of August 8, 2020, more than $8.1 billion in PPP loans had been disbursed to businesses involved in agriculture, forestry, fishing, and hunting. Finally, on September 17, 2020, the USDA announced the second round of CFAP funding through the authorities of the CCC for up to $14 billion in direct support for eligible commodities ("CFAP 2"). As of October 25, 2020, the USDA had distributed more than $7.6 billion in payments through CFAP 2.

Farmland values have held steady in early 2020 after rising at approximately the rate of inflation for the last two years. Data released in 2020 by the USDA indicates an average increase in farm real estate values of 0.2% in 2020 in Corn Belt states (Illinois, Indiana, Iowa, Missouri, and Ohio), but a decrease of 2.3% 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. The COVID-19 pandemic has slowed public auctions and sales in 2020, but transactions have picked up in the third quarter, and values have been largely level through much of the year. 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 prolonged decline 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. Also, the strength of the U.S. dollar relative to trading-partner currencies has been elevated since 2016 (as measured by the U.S. Dollar Index). A strong U.S. dollar decreases the competitiveness of U.S. agricultural exports by raising U.S. prices relative to other countries' producers. The value of the U.S. dollar weakened in the second and third quarters, providing some relief to export sales. However, the COVID-19 pandemic has the potential to disrupt global demand for U.S. agriculture into 2021 due to lower incomes and reduced economic activity. Many of the primary trading partners and the U.S. maintain good trade relations evidenced by recently-enacted free trade agreements (e.g., Canada, Mexico, and Japan). Agricultural export sales to China are up year-to-date in 2020 compared to 2019, but there exists considerable uncertainty surrounding growth expectations for this market.

Weather conditions also play a sizable role in agricultural economic conditions. While growing conditions were generally favorable in the Midwest for much of the year, severe storms can significantly damage crops. An intense derecho thunderstorm in August 2020 affected thousands of acres across Iowa and Illinois, lowering state-specific grain yield expectations. Damage from those types of weather events is generally covered by federal crop insurance policies, and roughly 95 percent of corn and soybean acres in Iowa and Illinois are covered by crop insurance according to USDA data. Wildfires are another weather event that can adversely affect agricultural production. The 2020 California wildfire season has been one of the worst in recent history, and the California Department of Forestry and Fire Protection estimates that over four million acres have burned through October 25, 2020. Much of California agriculture lies in valleys that were not directly affected by active fires. Approximately 1% of Farmer Mac's Farm & Ranch portfolio is located in Napa or Sonoma Counties, where the Glass Fire caused significant direct and indirect damage to vineyards and wineries. Farmer Mac will continue to monitor exposure to the wildfires, but initial indications show limited exposure.

Farmer Mac has experienced higher 90-day delinquencies and substandard asset ratings in recent quarters. The increase is a function of agricultural cycles trending toward tighter industry profitability levels compared to peaks experienced from 2012 to 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 its portfolio is highly diversified, both geographically and by commodity and that its portfolio has been underwritten to high credit quality standards. Therefore, Farmer Mac believes that its portfolio is well-positioned to endure reasonably foreseeable volatility in commodity prices and farmland values. However, the COVID-19 pandemic and a subsequent economic downturn increases the level of uncertainty inherent in the agricultural credit sector and could alter the trajectory of the current agricultural cycle. A prolonged disruption may result in elevated loan delinquencies, and a higher percentage of loans rated substandard as more payments reach 90-days past their July 1 payment due date. Loan deferments approved by Farmer Mac through September 30, 2020 represent 1.7% of our total outstanding business volume, as measured by unpaid principal balance. This amount could fluctuate in future quarters based on loan performance and economic conditions in the coming months, but roughly 80 percent of Farm & Ranch and USDA loans made a payment between April 1 and September 30. 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, 2020, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees."

The Agricultural Improvement Act of 2018, also referred to as the "Farm Bill," increased 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) 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 contributed to additional growth in the USDA Guarantees purchased by Farmer Mac in 2020.

Farmer Mac also continues to monitor 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.

Rural Utilities Industry.

The rural energy industry has less cyclicality than the agricultural sector, but does trend with conditions in the general economy. Higher levels of unemployment and adverse credit markets are typically associated with drops in energy demand (i.e., lower commercial, industrial, or residential demand) and increases in industry ratings downgrades. The economic distress caused by the COVID-19 pandemic has led to historic levels of unemployment as well as reduced demand from the commercial and industrial sectors. According to data from the U.S. Energy Information Administration, electricity sales to commercial and industrial consumers dropped 8 percent year-to-date through August 2020 compared to 2019. However, residential sales during the same period were up 3 percent compared to 2019 as residents spent more time at home during state, local, and self-imposed quarantines. Residential power sales are typically significantly more profitable than those for commercial and industrial consumers, thus some of the profitability reduction from the loss of commercial and industrial sales can be offset by the change in sales mix. Sector sales mix varies from utility to utility based on the characteristics of the region served by the utility, so the degree of profitability offset will differ. Some rural electric cooperatives participated in the Paycheck Protection Program (PPP) and received forgivable loans through that program, which are another potential source to offset any profitability reduction. The COVID-19 pandemic has also highlighted the greater need for and interest in access to broadband internet in rural areas, and there was more than $300 million in support authorized in the CARES Act to support healthcare industry telecommunications and rural broadband grants. Farmer Mac expects the heightened level of uncertainty surrounding the economic impacts of COVID-19 to continue throughout 2020, however through mid-2020 Farmer Mac has not observed material degradation in the financial performance of its Rural Utilities portfolio.

During the first nine months of 2020, the sudden decrease of interest rates to historic lows drove a significant amount of financing activity on the part of rural electric cooperatives. Prospects for loan growth within the rural utilities industry overall appear to be moderate in the short to medium term as ongoing normal-course capital expenditures related to maintaining and upgrading utility infrastructure continue at typical levels. Farmer Mac's future growth opportunities for lending to the electrical cooperative industry may be affected by the demand for electric power in rural areas, capital expenditures by electric cooperatives driven by regulatory or technological changes, the continuation of a low interest rate environment, and competitive dynamics within the rural utilities cooperative finance industry. However, the Federal Communication Commission’s upcoming Rural Development Opportunity Fund (RDOF) auction for up to $16 billion in broadband-related operating cost subsidies may provide a catalyst for capital demands from rural electric cooperatives who seek to develop and deploy broadband services. The 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 deployed new financing products tailored to the renewable energy sector, which represents a new market opportunity for Farmer Mac. Under this new program, Farmer Mac purchased solar project participation interests from a new counterparty during first quarter 2020 as well as wind project participation interests from an existing counterparty in third quarter 2020. Farmer Mac anticipates further growth in this area during the remainder of 2020.

Balance Sheet Review

The following table summarizes the balance sheet as of the periods indicated:

Table 23

	As of		Change	
	September 30, 2020	December 31, 2019	$	%
		(in thousands)		
Assets				
Cash and cash equivalents	$ 910,592	$ 604,381	$ 306,211	51 %
Investment securities, net of allowance	3,577,222	3,004,875	572,347	19 %
Farmer Mac Guaranteed Securities, net of allowance	8,712,208	8,590,476	121,732	1 %
USDA Securities	2,417,678	2,241,073	176,605	8 %
Loans, net of allowance	8,105,647	6,981,440	1,124,207	16 %
Other	275,490	287,129	(11,639)	(4)%
Total assets	$ 23,998,837	$ 21,709,374	$ 2,289,463	11 %
Liabilities				
Notes Payable	21,589,285	19,098,648	2,490,637	13 %
Other	1,479,207	1,811,450	(332,243)	(18)%
Total liabilities	$ 23,068,492	$ 20,910,098	$ 2,158,394	10 %
Total equity	930,345	799,276	131,069	16 %
Total liabilities and equity	$ 23,998,837	$ 21,709,374	$ 2,289,463	11 %

Assets. The increase in total assets was primarily attributable to the net growth in our outstanding business volume across most lines of business.

The increase in cash and cash equivalents and investment securities was primarily due to a decision to increase our liquidity investment portfolio due to the COVID-19 pandemic and to support our program asset growth.

Liabilities. The increase in total liabilities was primarily due to an increase in total notes payable to support our program asset growth.

Equity. The increase in total equity was primarily due to the issuance of the Series E Preferred Stock and the Series F Preferred Stock and an increase in net income. These increases were partially offset by the redemption of the Series A Preferred stock and an increase in other comprehensive losses, net of tax, primarily due to decreases in the fair value of available-for-sale securities and financial derivatives designated in cash flow hedge accounting relationships.

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.

COVID-19

Farmer Mac continues to monitor the effects of the COVID-19 pandemic on Farmer Mac's credit risk related to Farmer Mac's borrower exposures. Since first quarter 2020, Farmer Mac has seen an increase in payment deferment requests from its network of loan servicers on behalf of borrowers in Farmer Mac's Farm & Ranch loan portfolio, although deferment requests have been below our expectations. Our early expectations for payment deferment requests were based on forecasts provided by other GSEs and other Farm Credit System institutions. To address the requests that we have received, Farmer Mac has established criteria for approval of payment deferments for borrowers impacted by the COVID-19 pandemic and have communicated these criteria to key counterparties. Farmer Mac will monitor the criteria as the impact of the pandemic continues to unfold and determine if any changes should be made. Most of the payment deferments Farmer Mac has approved and executed for loans it has purchased or securitized in its Farm & Ranch portfolio have been for up to six months, with the deferred principal and interest payments capitalized into the unpaid principal balance of the loan. The unpaid principal balance is then re-amortized over the remaining term of the loan. Approved and executed payment deferments for loans in LTSPCs have varied from three-month payment deferments for principal and interest to deferred interest-only payments for up to twelve months, depending on the applicable LTSPC lender's deferment policy. As of September 30, 2020, we have executed payment deferments in the Farm & Ranch and USDA Securities portfolios related to an aggregate of $374.5 million of unpaid principal balances, which represents 1.70% of our total outstanding business volume. The period of time covered by the payment deferments is typically in the range of three to six months. At the end of each payment deferment, the principal and interest related to the approved deferments will be capitalized into the outstanding unpaid principal balance and amortized over the remaining life of the loan. As of October 15, 2020, $4.6 million of Farm & Ranch COVID-19 deferments have been repaid in full, and another $153.3 million of Farm & Ranch COVID-19 deferments have ended their deferment periods and none are delinquent.

In addition, FCA has issued regulatory guidance encouraging Farmer Mac to work with its lending and servicing partners in approving and executing servicing actions for borrowers impacted by COVID-19. The table below presents a cumulative summary of COVID-19 payment deferments through September 30, 2020 in the Farm & Ranch line of business. Farmer Mac has not received any payment deferment requests in the Rural Utilities line of business. For more information about FCA's regulatory guidance related to the COVID-19 pandemic, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Regulatory Matters."

Table 24

Farm & Ranch COVID-19 Deferments Summary

	As of September 30, 2020[1]			
	Unpaid Principal Balance			
	Requested, but not yet Approved	Approved, but not yet Executed	Not Approved	Approved and Executed
Farm & Ranch:	(in thousands)			
On-balance sheet:				
Loans held for investment	$ 289	$ 34,451	$ 445	$ 72,875
Loans held in consolidated trusts	—	4,469	1,153	32,402
On-balance sheet total	$ 289	$ 38,920	$ 1,598	$ 105,277
Off-balance sheet:				
LTSPCs	578	27,956	4,369	185,364
Farm & Ranch Total	$ 867	$ 66,876	$ 5,967	$ 290,641
USDA:				
USDA Securities	$ 17,707	$ 816	$ 5,985	$ 78,233
Farmer Mac Guaranteed USDA Securities	333	—	2,129	5,577
USDA Total	$ 18,040	$ 816	$ 8,114	$ 83,810
Farm & Ranch and USDA Total Deferments	$ 18,907	$ 67,692	$ 14,081	$ 374,451

(1) Loans under a COVID-19 deferment are not considered to be past due.

Farm & Ranch

Farmer Mac's direct credit exposure to Farm & Ranch loans held and loans underlying Farm & Ranch Guaranteed Securities and LTSPCs as of September 30, 2020 was $8.2 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, 2019 filed with the SEC on February 25, 2020.

Farmer Mac has indirect credit exposure to the Farm & Ranch loans that secure AgVantage securities included in the Institutional Credit line of business. As of September 30, 2020, Farmer Mac had not experienced any credit losses on any AgVantage securities. 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.

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, 2020 and December 31, 2019, the average unpaid principal balances for loans outstanding in the Farm & Ranch line of business was $731,000 and $683,000, 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 combined 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 2020 was 43%, compared to 51% for loans purchased during third quarter 2019. 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 52% and 51% as of September 30, 2020 and December 31, 2019, respectively. The weighted-average original loan-to-value ratio for all 90-day delinquencies was 50% and 53% as of September 30, 2020 and December 31, 2019, respectively.

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 amortization) for Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs was 45% as of both September 30, 2020 and December 31, 2019.

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, 2020, Farmer Mac's 90-day delinquencies were $88.0 million (1.07% of the Farm & Ranch portfolio), compared to $68.7 million (0.86% of the Farm & Ranch portfolio) as of June 30, 2020 and $61.0 million (0.78% of the Farm & Ranch portfolio) as of December 31, 2019. Those 90-day delinquencies were comprised of 62 delinquent loans as of September 30, 2020, compared to 54 delinquent loans as of June 30, 2020 and 57 delinquent loans as of December 31, 2019. The sequential increase in 90-day delinquencies is primarily due to the seasonal payment pattern associated with loans that have annual (January 1st) and semi-annual (January 1st and July 1st) payment terms, which account for most of the loans in the Farm & Ranch portfolio. 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. The sequential increase in 90-day delinquencies was driven by two commodity groups – crops and livestock. The other commodity groups either experienced decreases or remained stable. The top ten borrower exposures over 90 days delinquent represented over half of the 90-day delinquencies as of September 30, 2020. Loans under COVID-19 deferment are not considered past due and are not included in our delinquent loan statistics. Farmer Mac believes that it remains adequately collateralized on its delinquent loans.

Our 90-day delinquency rate as of September 30, 2020 exceeded Farmer Mac's historical average. In the near-term, our delinquency rate is expected to exceed our historical average due to the expected impact of the COVID-19 pandemic on 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 unpaid principal balance of all Farm & Ranch loans held and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs:

Table 25

	Farm & Ranch Line of Business	90-Day Delinquencies	Percentage
	(dollars in thousands)		
As of:			
September 30, 2020	$ 8,249,349	$ 88,041	1.07 %
June 30, 2020	8,017,850	68,682	0.86 %
March 31, 2020	7,811,594	79,722	1.02 %
December 31, 2019	7,776,950	60,954	0.78 %
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 %

Across all of Farmer Mac's lines of business, 90-day delinquencies represented 0.40% of total outstanding business volume as of September 30, 2020, compared to 0.29% as of December 31, 2019 and 0.29% as of September 30, 2019. 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, 2020 by year of origination, geographic region, commodity/collateral type, original loan-to-value ratio, and range in the size of borrower exposure:

Table 26

Farm & Ranch 90-Day Delinquencies as of September 30, 2020

	Distribution of Farm & Ranch Line of Business	Farm & Ranch Line of Business	90-Day Delinquencies[1]	Percentage
		(dollars in thousands)		
By year of origination:				
2010 and prior	8 %	$ 629,983	$ 6,095	0.97 %
2011	2 %	141,080	921	0.65 %
2012	4 %	345,488	—	— %
2013	6 %	495,888	2,548	0.51 %
2014	5 %	415,424	1,383	0.33 %
2015	7 %	579,321	6,600	1.14 %
2016	11 %	917,149	24,209	2.64 %
2017	12 %	985,401	25,327	2.57 %
2018	10 %	867,825	8,604	0.99 %
2019	15 %	1,205,009	10,250	0.85 %
2020	20 %	1,666,781	2,104	0.85 %
Total	100 %	$ 8,249,349	$ 88,041	1.07 %
By geographic region[2]:				
Northwest	12 %	$ 1,015,736	$ 12,122	1.19 %
Southwest	34 %	2,802,361	13,036	0.47 %
Mid-North	29 %	2,362,710	30,314	1.28 %
Mid-South	13 %	1,068,422	17,168	1.61 %
Northeast	4 %	357,810	4,013	1.12 %
Southeast	8 %	642,310	11,388	1.77 %
Total	100 %	$ 8,249,349	$ 88,041	1.07 %
By commodity/collateral type:				
Crops	51 %	$ 4,200,252	$ 49,766	1.18 %
Permanent plantings	23 %	1,922,741	8,388	0.44 %
Livestock	19 %	1,513,137	16,823	1.11 %
Part-time farm	6 %	485,778	145	0.03 %
Ag. Storage and Processing	1 %	109,369	12,865	11.76 %
Other	—	18,072	54	0.30 %
Total	100 %	$ 8,249,349	$ 88,041	1.07 %
By original loan-to-value ratio:				
0.00% to 40.00%	17 %	$ 1,433,215	$ 6,627	0.46 %
40.01% to 50.00%	25 %	2,043,177	40,791	2.00 %
50.01% to 60.00%	35 %	2,883,327	38,041	1.32 %
60.01% to 70.00%	19 %	1,574,042	2,472	0.16 %
70.01% to 80.00%[3]	4 %	299,582	—	— %
80.01% to 90.00%[3]	— %	16,006	110	0.69 %
Total	100 %	$ 8,249,349	$ 88,041	1.07 %
By size of borrower exposure[4]:				
Less than $1,000,000	29 %	$ 2,426,763	$ 12,878	0.53 %
$1,000,000 to $4,999,999	35 %	2,868,618	33,358	1.16 %
$5,000,000 to $9,999,999	15 %	1,198,942	12,559	1.05 %
$10,000,000 to $24,999,999	12 %	968,893	29,246	3.02 %
$25,000,000 and greater	9 %	786,133	—	— %
Total	100 %	$ 8,249,349	$ 88,041	1.07 %

(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, 2020, Farmer Mac's substandard assets were $321.2 million (3.9% of the Farm & Ranch portfolio), compared to $304.9 million (3.8% of the Farm & Ranch portfolio) as of June 30, 2020 and $310.0 million (4.0% of the Farm & Ranch portfolio) as of December 31, 2019. Those substandard assets were comprised of 361 loans as of September 30, 2020, 368 loans as of June 30, 2020, and 353 loans as of December 31, 2019.

The increase of $16.3 million in substandard assets during third quarter 2020 was primarily driven by credit downgrades in our off-balance sheet portfolio, partially offset by credit upgrades in our on-balance sheet portfolio during the quarter. Substandard assets increased as a percentage of the total on- and off-balance sheet portfolio primarily due to the credit downgrades in our off-balance sheet portfolio. The percentage of substandard assets within the portfolio closely approximates the historical average.

Farmer Mac's average substandard assets as a percentage of its Farm & Ranch portfolio over the last 15 years is approximately 4%. Due to the COVID-19 pandemic, we believe that the substandard rate may rise above that historical average in the short-term. The full extent of the impact of the COVID-19 pandemic remains to be seen, and we will continue to monitor its impact on our substandard asset rate. The highest substandard asset rate observed during the last 15 years 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 ratings:

Table 27

Farm & Ranch current loan-to-value ratio by internally assigned risk rating as of September 30, 2020

	Acceptable	Special Mention	Substandard	Total
		(in thousands)		
Current loan-to-value ratio[1]:				
0.00% to 40.00%	$ 2,535,414	$ 91,379	$ 100,905	$ 2,727,698
40.01% to 50.00%	2,004,659	142,067	80,324	2,227,050
50.01% to 60.00%	1,812,255	77,716	85,615	1,975,586
60.01% to 70.00%	974,306	43,893	19,739	1,037,938
70.01% to 80.00%	209,385	18,895	19,019	247,299
80.01% and greater	13,486	4,710	15,582	33,778
Total	$ 7,549,505	$ 378,660	$ 321,184	$ 8,249,349

(1) The current loan-to-value ratio is based on original appraised value (or most recently obtained appraisal, if available) 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, 2020 by year of origination, geographic region, and commodity/collateral type. The purpose of this information is to present information about realized losses relative to original Farm & Ranch purchases, guarantees, and commitments.

Table 28

Farm & Ranch Credit Losses Relative to Cumulative
Original Loans, Guarantees, and LTSPCs as of September 30, 2020

	Cumulative Original Loans, Guarantees and LTSPCs	Cumulative Net Credit Losses/ (Recoveries)	Cumulative Loss Rate
	(dollars in thousands)		
By year of origination:			
2010 and prior	$ 15,321,174	$ 30,103	0.20 %
2011	780,955	3,661	0.47 %
2012	1,159,460	—	— %
2013	1,451,375	—	— %
2014	1,030,669	—	— %
2015	1,189,515	(516)	(0.04)%
2016	1,487,986	—	— %
2017	1,562,656	—	— %
2018	1,282,915	—	— %
2019	1,468,215	—	— %
2020	1,800,179		— %
Total	$ 28,535,099	$ 33,248	0.12 %
By geographic region[(1)]:			
Northwest	$ 3,706,610	$ 11,191	0.30 %
Southwest	10,076,495	8,520	0.08 %
Mid-North	7,177,705	12,855	0.18 %
Mid-South	3,509,487	(613)	(0.02)%
Northeast	1,589,015	323	0.02 %
Southeast	2,475,787	972	0.04 %
Total	$ 28,535,099	$ 33,248	0.12 %
By commodity/collateral type:			
Crops	$ 13,207,554	$ 2,887	0.02 %
Permanent plantings	6,329,212	9,762	0.15 %
Livestock	6,414,242	3,836	0.06 %
Part-time farm	1,637,536	1,090	0.07 %
Ag. Storage and Processing	780,390	15,673	2.01 %
Other	166,165	—	— %
Total	$ 28,535,099	$ 33,248	0.12 %

(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 29

	As of September 30, 2020						
	Farm & Ranch Concentrations by Commodity Type within Geographic Region						
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Other	Total
	(dollars in thousands)						
By geographic region(1):							
Northwest	$ 473,738	$ 178,777	$ 279,427	$ 78,696	$ 5,039	$ 59	$1,015,736
	5.7 %	2.2 %	3.3 %	1.0 %	0.1 %	— %	12.3 %
Southwest	676,122	1,447,146	511,801	94,470	57,156	15,666	2,802,361
	8.2 %	17.6 %	6.2 %	1.1 %	0.7 %	0.2 %	34.0 %
Mid-North	1,992,828	11,235	221,150	117,430	18,064	2,003	2,362,710
	24.2 %	0.1 %	2.7 %	1.4 %	0.2 %	— %	28.6 %
Mid-South	661,234	43,170	301,146	55,875	6,977	20	1,068,422
	8.0 %	0.5 %	3.7 %	0.7 %	0.1 %	— %	13.0 %
Northeast	160,221	59,717	67,891	66,463	3,518	—	357,810
	2.0 %	0.7 %	0.8 %	0.8 %	— %	— %	4.3 %
Southeast	236,109	182,696	131,722	72,844	18,615	324	642,310
	2.9 %	2.2 %	1.6 %	0.9 %	0.2 %	— %	7.8 %
Total	$ 4,200,252	$ 1,922,741	$1,513,137	$485,778	$ 109,369	$ 18,072	$8,249,349
	51.0 %	23.3 %	18.3 %	5.9 %	1.3 %	0.2 %	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 30

	As of September 30, 2020					
	Farm & Ranch Cumulative Credit Losses by Origination Year and Commodity Type					
	Crops	Permanent Plantings	Livestock	Part-time Farm	Ag. Storage and Processing	Total
	(in thousands)					
By year of origination:						
2010 and prior	$ 3,427	$ 9,762	$ 3,836	$ 1,066	$ 12,012	$ 30,103
2011	—	—	—	—	3,661	3,661
2012	—	—	—	—	—	—
2013	—	—	—	—	—	—
2014	—	—	—	—	—	—
2015	(540)	—	—	24	—	(516)
2016	—	—	—	—	—	—
2017	—	—	—	—	—	—
2018	—	—	—	—	—	—
2019	—	—	—	—	—	—
2020	—	—	—	—	—	—
Total	$ 2,887	$ 9,762	$ 3,836	$ 1,090	$ 15,673	$ 33,248

Rural Utilities

Farmer Mac's direct credit exposure to Rural Utilities loans held and loans underlying LTSPCs as of September 30, 2020 was $2.7 billion across 45 states. 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, 2019 filed with the SEC on February 25, 2020. As of September 30, 2020, there were no delinquencies in Farmer Mac's portfolio of Rural Utilities loans.

Farmer Mac has indirect credit exposure to Rural Utilities loans that secure AgVantage securities included in the Institutional Credit line of business. As of September 30, 2020, Farmer Mac had not experienced any credit losses on any AgVantage securities. 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.

Farmer Mac has never experienced a credit loss in its Rural Utilities line of business. Upon the adoption of the current expected credit loss accounting standard ("CECL") on January 1, 2020, we are now required to forecast and disclose our expected credit losses for the expected life of our Rural Utilities portfolio assets. To do this, Farmer Mac relies upon industry data purchased from ratings agencies as well as publicly available information as disclosed in the securities filings of other major lenders who serve this industry. 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 evaluates credit risk for these assets by reviewing a variety of borrower credit risk characteristics. These characteristics can include (but is not limited to) financial metrics, internal risk ratings, ratings assigned by ratings agencies, types of customers served, sources of power supply, and the regulatory environment.

The following table presents Farmer Mac's portfolio of generation and transmission ("G&T") and distribution cooperative borrowers, as well as renewable energy loans, disaggregated by internally assigned risk ratings.

Table 31

	Rural Utilities portfolio by internally assigned risk rating as of September 30, 2020			
	Acceptable	Special Mention	Substandard	Total
	(in thousands)			
Distribution Cooperative	$ 2,088,027	$ —	$ 4,474	$ 2,092,501
G&T Cooperative	573,401	—	—	573,401
Renewable Energy	19,407	—	—	19,407
Rural Utilities Total	$ 2,680,835	$ —	$ 4,474	$ 2,685,309

For more information about the credit quality of Farmer Mac's Rural Utilities portfolio and the associated allowance for losses please refer to Notes 5 and 6 of the consolidated financial statements.

Other Considerations Regarding Credit Risk Related to Loans and Guarantees

The credit exposure on USDA Securities, including those underlying Farmer Mac Guaranteed USDA Securities, is guaranteed 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, 2020, Farmer Mac had not experienced any credit losses on any securities under the USDA Guarantees line of business and does not expect to incur any such losses in the future. Because we do not expect credit losses on this portfolio, Farmer Mac does not provide an allowance for losses on its portfolio of USDA Guaranteed Securities. As of September 30, 2020, Farmer Mac had executed COVID-19 payment deferments on loans with unpaid principal balances of $83.8 million underlying USDA Securities.

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, 2020, there have been no breaches of representations and warranties by sellers that resulted in Farmer Mac requiring a seller to cure, replace, or repurchase a loan. 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, 2019, as filed with the SEC on February 25, 2020.

Under contracts with Farmer Mac and in consideration for servicing fees, Farmer Mac-approved servicers service loans in accordance with Farmer Mac's requirements. Servicers are responsible to Farmer Mac for serious errors in the servicing of those loans. If a 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 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 servicer. Farmer Mac also can proceed against the servicer in arbitration or exercise any remedies available to it under law. During the previous three years ended September 30, 2020, Farmer Mac had not exercised any remedies or taken any formal action against any 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, 2019 filed with the SEC on February 25, 2020.

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 typically 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. Since the onset of the COVID-19 pandemic, Farmer Mac has approved and expects to continue to approve payment deferments on loans collateralizing AgVantage securities, allowing the AgVantage counterparty to keep these loans in its collateral pool without replacing them. The criteria currently in place for approving payment deferments for these loans is similar to the criteria Farmer Mac has established for loans in its Farm & Ranch portfolio that are affected by the COVID-19 pandemic.

In the event of a default on an AgVantage security, 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 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" in Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2019 filed with the SEC on February 25, 2020.

The unpaid principal balance of outstanding on-balance sheet AgVantage securities secured by loans eligible for the Farm & Ranch line of business totaled $5.4 billion as of September 30, 2020 and $5.5 billion as of December 31, 2019. 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, 2020 and $2.9 billion as of December 31, 2019. The unpaid principal balance of outstanding off-balance sheet AgVantage securities totaled $6.1 million as of September 30, 2020 and $7.6 million as of December 31, 2019. A $0.3 billion off-balance sheet AgVantage revolving line of credit facility was terminated during fourth quarter 2019.

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, 2020 and December 31, 2019:

Table 32

	As of September 30, 2020			As of December 31, 2019		
Counterparty	Balance	Credit Rating	Required Collateralization	Balance	Credit Rating	Required Collateralization
			(dollars in thousands)			
AgVantage:						
CFC	$ 2,919,816	A	100%	$ 2,949,500	A	100%
MetLife	2,375,000	AA-	103%	2,550,000	AA-	103%
Rabo AgriFinance	2,250,000	None	110%	2,225,000	None	110%
Other[1]	528,929	None	106% to 125%	436,041	None	106% to 125%
Farm Equity AgVantage[2]	245,757	None	110%	279,705	None	110%
Total outstanding	$ 8,319,502			$ 8,440,246		

(1) Consists of AgVantage securities issued by 6 and 5 different issuers as of September 30, 2020 and December 31, 2019, respectively.
(2) Consists of AgVantage securities issued by 4 and 5 different issuers as of September 30, 2020 and December 31, 2019, respectively.

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, 2019, as filed with the SEC on February 25, 2020.

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 swap 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. Farmer Mac transacts interest rate swaps with multiple counterparties to reduce counterparty credit exposure concentration. Farmer Mac's usage of cleared derivatives has increased over time as has its exposure to clearinghouses. The usage of cleared swap transactions reduces Farmer Mac's exposure to individual counterparties with the central clearinghouse acting to settle the change in value of contracts on a daily basis. 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, 2020, Farmer Mac had $0.9 billion of cash and cash equivalents and $3.6 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 ($100.4 million as of September 30, 2020). However, Farmer Mac's current policy limits this total credit exposure to 5% of its regulatory capital ($50.2 million as of September 30, 2020). 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 financial assets retained on its balance sheet because of timing differences in the cash flows of the assets and debt together with financial derivatives. This risk is primarily related to loans, loan participation interests, Farmer Mac Guaranteed Securities, and USDA Securities due to the contract right of borrowers to prepay their loans before the scheduled maturities. Cash flow mismatches due to changing interest rates can reduce the earnings of Farmer Mac if assets prepay 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. Alternatively, Farmer Mac could see a drop in income if assets repay more slowly than expected in a rising interest rate environment and the associated debt must be replaced by higher-cost debt.

Interest Rate Risk Management

The goal of interest rate risk management at Farmer Mac is to manage the balance sheet in a manner 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 regularly assesses this exposure and, if necessary, adjusts its portfolio of assets, debt, and financial derivatives.

Farmer Mac's objective is to maintain its exposure to interest rate risk within appropriate limits, as approved by Farmer Mac's board of directors. Farmer Mac's management-level Asset and Liability Committee ("ALCO") provides oversight and approves strategies to maintain interest rate risk within the board-established limits.

Farmer Mac's primary strategy for managing interest rate risk is to fund asset purchases with debt that together with financial derivatives have similar duration and convexity characteristics so that they will perform in a similar fashion as interest rates change. As part of the debt issuance strategy, Farmer Mac seeks to issue a blend of liabilities across a variety of maturities to approximately align the liability cashflows with the forecasted asset cashflows.

Farmer Mac issues discount notes and both callable and non-callable medium-term notes across a spectrum of maturities to execute its liability issuance strategy. Callable debt is issued to mitigate prepayment risk associated with assets held on balance sheet. The interest rate sensitivities of the debt together with financial derivatives 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 enters into financial derivatives, primarily interest rate swaps, as another tool to better match the durations of Farmer Mac's assets and liabilities, thereby reducing overall sensitivity to changing interest rates.

Taking into consideration the prepayment provisions and the default probabilities associated with its portfolio of retained assets, Farmer Mac incorporates prepayment behavioral 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.

Changes in interest rates may affect loan prepayment rates which may, in turn, impact 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 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 other financial derivatives. Farmer Mac enters into U.S. Treasury futures contracts as a hedge against the level of interest rates.

Farmer Mac's $0.9 billion of cash and cash equivalents mature within three months and are generally funded with debt having similar maturities. As of September 30, 2020, $3.5 billion of the $3.6 billion of investment securities (97%) were floating rate securities with rates that adjust within one year or fixed rate securities with original maturities between three months and one year. The floating rate securities are funded with effectively floating rate debt that closely matches the rate adjustment dates of the associated investments. The fixed rate investment securities are generally funded in a manner consistent with Farmer Mac's overall funding strategy that approximates a duration and convexity match.

Interest Rate Risk Metrics

Farmer Mac regularly stress tests its portfolio for interest rate risk and examines 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 effect 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 over the next twelve months from interest-earning assets and interest expense produced by the related funding, including associated derivatives. Farmer Mac's NES may be impacted 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 sensitivity to interest rates.

Duration is a measure of a financial instrument's fair value sensitivity to small changes in interest rates. Duration gap is the net estimated durations of Farmer Mac's assets, debt, and financial derivatives. Because duration is a measure of fair value sensitivity, duration gap summarizes the extent to which estimated fair 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 debt and derivatives. A positive duration gap indicates that the changes to the fair value of Farmer Mac's assets is more sensitive to small interest rate movements than are the changes to fair value of its debt and derivatives. Conversely, a negative duration gap indicates that changes to fair value of Farmer Mac's assets are less sensitive to small interest rate movements than are the changes to fair value of its debt and derivatives. A duration gap of zero indicates that with small changes in interest rate movements the fair value change of Farmer Mac's assets is effectively offset the fair value change of its debt and derivatives.

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 asset 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, 2020 and December 31, 2019 to an immediate and instantaneous uniform or "parallel" shift in the yield curve:

Table 33

	Percentage Change in MVE from Base Case	
Interest Rate Scenario[(1)]	As of September 30, 2020	As of December 31, 2019
+100 basis points	6.1 %	2.7 %
-100 basis points	(0.5)%	(8.4)%

	Percentage Change in NES from Base Case	
Interest Rate Scenario[(1)]	As of September 30, 2020	As of December 31, 2019
+100 basis points	3.1 %	0.8 %
-100 basis points	(0.2)%	0.1 %

(1) The down 100 basis points shock scenario was replaced with a proportional shock relative to 50% of the 3-month Treasury bill rate, with the approval of the Financial Risk Committee of the Board of Directors.

As of September 30, 2020, Farmer Mac's effective duration gap was negative 4.4 months, compared to negative 2.5 months as of December 31, 2019. Interest rates decreased significantly during the first nine months of 2020. This rate movement contributed to reducing the duration of Farmer Mac's assets relative to its liabilities, thereby widening Farmer Mac's duration gap. Furthermore, as of September 30, 2020, Farmer Mac implemented a replacement behavioral prepayment model that also contributed to a widening 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, 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, 2020, Farmer Mac had $15.1 billion combined notional amount of interest rate swaps, with terms ranging from less than one year to thirty years, of which $6.2 billion were pay-fixed interest rate swaps, $5.6 billion were receive-fixed interest rate swaps, and $3.3 billion were basis swaps.

Farmer Mac enters into interest rate swap contracts to more closely match the cash flow and duration characteristics of its assets with those of its liabilities. Interest rate swaps paired with the issuance of short-term debt effectively can create fixed rate funding that approximately matches duration with the corresponding assets being funded. Farmer Mac evaluates the overall cost of using the swap market in conjunction with debt issuance as a funding alternative to duration-matched debt and enters into interest rate swaps to manage interest rate risks across the balance sheet.

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 and SOFR). Also, 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 accounting 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, 2020 and December 31, 2019, Farmer Mac had no uncollateralized net exposures.

Re-funding and repricing 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 and SOFR) on many of the floating rate assets it holds. This exposure is referred to as "re-funding and repricing risk." Re-funding and repricing risk arises from potential changes in funding costs when Farmer Mac funds floating rate, or synthetic floating rate, assets with floating rate liabilities with shorter maturities. Changes in Farmer Mac's funding costs relative to the benchmark rate to which the assets are indexed can cause changes to net interest income from funding those assets.

Farmer Mac is subject to re-funding and repricing risk on any floating rate assets that are not funded to contractual maturity. In addition, many of Farmer Mac's floating rate assets may prepay before the contractual maturity date. Farmer Mac is also subject to re-funding and repricing risk on a portion of its fixed rate assets as a result of its use of pay-fixed receive-floating interest rate swaps that effectively convert the required funding needed from fixed rate to floating rate. These fixed rate assets are then effectively synthetically floating rate assets that require floating rate funding.

Farmer Mac can meet floating rate funding needs 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 and reset frequencies that match the assets being funded;
- issuing non-maturity matched, floating rate medium-term notes with reset frequencies that match the assets being funded; or
- issuing non-maturity matched, 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.

To meet floating rate funding needs, Farmer Mac frequently issues shorter-term floating-rate medium-term notes or fixed rate medium-term notes paired with an interest rate swap 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 in the context of Farmer Mac's overall liability issuance and liquidity management strategies.

However, if the funding cost of Farmer Mac's discount notes or medium-term notes were to deteriorate relative to LIBOR (or a different market index to which the assets are being funded) during the time between when these floating rate assets were first funded and when Farmer Mac refinanced the associated debt, Farmer Mac would be exposed to a commensurate reduction in its net effective spread on the associated assets. Conversely, if the funding cost on Farmer Mac's discount notes or medium-term notes were to improve relative to LIBOR (or a different market index) during that time, Farmer Mac would benefit from a commensurate increase in its net effective spread on those assets.

Farmer Mac's liability issuance strategy targets balancing liquidity risk and re-funding and repricing risk while maintaining an appropriate liability management profile that is consistent with Farmer Mac's risk tolerance. ALCO regularly reviews Farmer Mac's liability issuance strategy to appropriately manage re-funding and repricing risk.

As of September 30, 2020, Farmer Mac held $7.0 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 $6.2 billion of interest rate swaps outstanding where Farmer Mac pays a fixed rate of interest and receives a floating rate of interest.

Throughout the first nine months of 2020, Farmer Mac's funding relative to LIBOR remained stable with spreads comparable to historical averages. Farmer Mac regularly adjusts its funding strategies to mitigate the effects of spread variability from time to time and seeks to maintain an effective funding cost in the context of its overall liability management and liquidity management strategies.

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, 2019 filed with the SEC on February 25, 2020, 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 replacement benchmark interest rates.

As of September 30, 2020, Farmer Mac held $5.7 billion of floating rate assets in its lines of business and its investment portfolio, had issued $5.2 billion of floating rate debt, and had entered into $14.9 billion notional amount of interest rate swaps, each of which reset based on LIBOR. In addition, our Non-Cumulative Series C Preferred Stock currently pays a fixed rate of interest until July 17, 2024. It becomes redeemable at our option on July 18, 2024 and thereafter pays interest at a floating rate equal to three-month LIBOR plus 3.260%.

The market transition away from LIBOR and towards an alternative benchmark interest rate that may be developed is expected to be complicated and may require 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. As of September 30, 2020, we had $1.1 billion outstanding in medium-term notes based on the Secured Overnight Financing Rate (SOFR), a potential alternative benchmark interest rate.

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 through third quarter 2020. 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, 2020, Farmer Mac had outstanding discount notes of $2.4 billion, medium-term notes that mature within one year of $8.6 billion, and medium-term notes that mature after one year of $10.7 billion.

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 contingency funding 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 202 days of liquidity during third quarter 2020 and had 182 days of liquidity as of September 30, 2020. ALCO regularly reviews Farmer Mac's liquidity position and ensures the required minimums are maintained.

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. Farmer Mac's current policies authorize liquidity investments in:

- obligations of or fully guaranteed by the United States or a U.S. government agency;
- obligations of or fully guaranteed by GSEs;
- municipal securities;
- international and multilateral development bank obligations;
- money market instruments;
- diversified investment funds;
- asset-backed securities;
- corporate debt securities; and
- mortgage-backed securities.

The following table presents these assets as of September 30, 2020 and December 31, 2019:

Table 34

	As of September 30, 2020	As of December 31, 2019
	(in thousands)	
Cash and cash equivalents	$ 910,592	$ 604,381
Investment securities:		
Guaranteed by U.S. Government and its agencies	1,696,538	1,842,640
Guaranteed by GSEs	1,861,611	1,143,323
Asset-backed securities	19,109	18,912
Total	$ 4,487,850	$ 3,609,256

The increase in the investment portfolio since December 31, 2019 was to provide a greater level of liquidity in response to the COVID-19 pandemic, to prepare for the possibility of future volatility in the debt capital markets, and to support program asset growth as the overall funding needs for the balance sheet increased.

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, 2020, 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, 2020 and December 31, 2019, Farmer Mac's Tier 1 capital ratio was 14.3% and 12.9%, respectively. The increase in our Tier 1 capital ratio was due to the fact that capital growth, which reflects the issuance of the Series E and Series F Preferred Stock, partially offset by the redemption of the Series A Preferred Stock, outpaced the growth in risk-weighted assets during the first nine months of 2020. As of September 30, 2020, Farmer Mac was in compliance with its capital adequacy policy. Farmer Mac does not expect its compliance on an ongoing basis with FCA's rule on capital planning, including Farmer Mac's policy on Tier 1 capital, to materially affect Farmer Mac's operations or financial condition.

For more information about the capital requirements applicable to Farmer Mac, its capital adequacy policy, and FCA's rule on capital planning, see "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, 2019 filed with the SEC on February 25, 2020. See Note 8 to the consolidated financial statements for more information about Farmer Mac's capital position.

Regulatory Matters

In response to the economic effects of the COVID-19 pandemic, FCA has issued regulatory guidance to encourage Farmer Mac to work with its lending and servicing partners in approving servicing actions for borrowers impacted by COVID-19, including working with other Farm Credit System institutions on approvals for loans to which statutory borrower rights are attached (primarily in LTSPCs). FCA also provided guidance about under what circumstances loans with approved servicing actions due exclusively to the economic effects of the COVID-19 pandemic should not be classified as nonaccrual or troubled debt restructurings.

Also in response to the COVID-19 pandemic and the related economic effects, Congress passed a series of stimulus measures, including the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), which contained a $9.5 billion emergency fund for the USDA aimed toward providing help to livestock, dairy, and produce providers who sell locally. It also included a $14 billion replenishment of the CCC, a line of credit at the U.S. Treasury Department that USDA can use to help crop and livestock producers. On April 17, 2020, USDA announced that it would provide $19 billion of assistance through the Coronavirus Food Assistance Program ("CFAP"). CFAP used the funding and authorities provided in the CARES Act, the Families First Coronavirus Response Act, and other USDA existing authorities to provide $16 billion in direct support to farmers and ranchers based on actual losses from disruptions to prices and market supply chains and for projected impacts to marketing costs resulting from lost demand and short-term oversupply for the 2020 marketing year caused by the coronavirus. As part of CFAP, USDA also announced that it would purchase $3 billion in fresh produce, dairy, and meat. These purchases are aimed at propping up commodity prices while providing commodities to food banks, community and faith based organizations, and other non-profits serving Americans in need. As of October 25, 2020, the USDA had distributed $10.3 billion in CFAP payments. Additionally, on September 17, 2020, the USDA announced the second round of CFAP funding through the authorities of the CCC for up to $14 billion in direct support for eligible commodities ("CFAP 2"). As of October 25, 2020, the USDA had distributed more than $7.6 billion in payments through CFAP 2. Through the end of October, more than $26 billion in economic support has been delivered to farm businesses under the CARES Act through a combination of direct payments and loans. In addition to legislation and stimulus in response to COVID-19, Farmer Mac continues to monitor the establishment and evolution of legislation and regulations that could affect farmers, ranchers, rural lenders, and rural America in general.

Other Matters

The expected effects of recently issued accounting pronouncements on the consolidated financial statements are presented in Note 1(d) to the consolidated financial statements.

Supplemental Information

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

Table 35

New Business Volume

	Farm & Ranch		USDA Guarantees	Rural Utilities		Institutional Credit	
	Loans	LTSPCs	USDA Securities	Loans	LTSPCs	AgVantage	Total
			(in thousands)				
For the quarter ended:							
September 30, 2020	$ 740,823	$ 94,495	$ 225,494	$ 62,300	$ —	$ 211,908	$ 1,335,020
June 30, 2020	609,284	85,390	224,016	339,366	19,500	430,024	1,707,580
March 31, 2020	401,853	73,674	147,906	152,668	—	560,395	1,336,496
December 31, 2019	602,750	65,614	143,565	102,900	—	371,075	1,285,904
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
For the year ended:							
December 31, 2019	$ 1,363,863	$ 339,172	$ 432,787	$ 871,377	$ —	$ 2,258,550	$ 5,265,749
December 31, 2018	960,848	430,071	460,121	11,645	—	3,310,307	5,172,992

Table 36

Repayments of Assets by Line of Business

	Farm & Ranch			USDA Guarantees	Rural Utilities		Institutional Credit	
	Loans	Guaranteed Securities	LTSPCs	USDA Securities	Loans	LTSPCs	AgVantage	Total
					(in thousands)			
For the quarter ended:								
Scheduled	$ 174,986	$ 2,524	$ 32,276	$ 29,654	$ 54,513	$ 14,100	$ 547,236	$ 855,289
Unscheduled	326,025	1,934	66,074	138,518	—	—	—	532,551
September 30, 2020	$ 501,011	$ 4,458	$ 98,350	$ 168,172	$ 54,513	$ 14,100	$ 547,236	$ 1,387,840
Scheduled	$ 101,264	$ 3,043	$ 39,010	$ 37,879	$ 23,589	$ 25,132	$ 471,295	$ 701,212
Unscheduled	248,890	4,034	92,177	154,536	3,935	—	—	503,572
June 30, 2020	$ 350,154	$ 7,077	$131,187	$ 192,415	$ 27,524	$ 25,132	$ 471,295	$ 1,204,784
Scheduled	$ 128,768	$ 6,132	$ 50,393	$ 43,069	$ 34,235	$ 13,593	$ 304,540	$ 580,730
Unscheduled	191,260	3,888	60,442	78,806	—	—	—	334,396
March 31, 2020	$ 320,028	$ 10,020	$110,835	$ 121,875	$ 34,235	$ 13,593	$ 304,540	$ 915,126
Scheduled	$ 57,488	$ 4,737	$ 39,878	$ 25,142	$ 10,317	$ 10,551	$ 656,095	$ 804,208
Unscheduled	105,671	3,247	74,121	66,011	34,063	—	13,000	296,113
December 31, 2019	$ 163,159	$ 7,984	$113,999	$ 91,153	$ 44,380	$ 10,551	$ 669,095	$ 1,100,321
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	$ 227,097	$ 5,758	$ 99,596	$ 67,295	$ 31,656	$ 8,692	$ 442,663	$ 882,757
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	$ 104,791	$ 7,157	$117,758	$ 81,720	$ 6,951	$ 17,092	$ 612,964	$ 948,433
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	$ 180,581	$ 7,641	$124,536	$ 88,064	$ 55,940	$ 7,660	$ 476,399	$ 940,821
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	$ 92,305	$ 17,588	$ 69,001	$ 45,928	$ 26,859	$ 16,062	$ 568,277	$ 836,020
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	$ 150,968	$ 10,239	$ 68,901	$ 63,203	$ 29,116	$ 8,286	$ 1,112,558	$ 1,443,271
For the year ended:								
Scheduled	$ 307,761	$ 17,433	$195,424	$ 132,937	$ 80,416	$ 43,995	$ 2,181,446	$ 2,959,412
Unscheduled	367,867	11,107	260,465	195,295	58,511	—	19,675	912,920
December 31, 2019	$ 675,628	$ 28,540	$455,889	$ 328,232	$ 138,927	$ 43,995	$ 2,201,121	$ 3,872,332
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	$ 547,009	$ 63,505	$389,769	$ 296,715	$ 149,093	$153,069	$ 2,832,368	$ 4,431,528

Table 37

Lines of Business - Outstanding Business Volume

	Farm & Ranch			USDA Guarantees	Rural Utilities		Institutional Credit	
	Loans	Guaranteed Securities	LTSPCs	USDA Securities	Loans	LTSPCs	AgVantage	Total
	(in thousands)							
As of:								
September 30, 2020	$5,857,324	$ 85,767	$2,306,258	$ 2,735,129	$ 2,109,355	$ 575,953	$ 8,319,502	$ 21,989,288
June 30, 2020	5,617,512	90,225	2,310,113	2,677,807	2,101,568	590,053	8,654,830	22,042,108
March 31, 2020	5,358,382	97,302	2,355,910	2,646,206	1,789,726	595,685	8,696,101	21,539,312
December 31, 2019	5,276,557	107,322	2,393,071	2,620,175	1,671,293	609,278	8,440,246	21,117,942
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

Table 38

On-Balance Sheet Outstanding Business Volume

	Fixed Rate	5- to 10-Year ARMs & Resets	1-Month to 3-Year ARMs	Total Held in Portfolio
	(in thousands)			
As of:				
September 30, 2020	$ 10,879,372	$ 2,811,547	$ 5,013,640	$ 18,704,559
June 30, 2020	10,793,629	2,845,266	5,076,445	18,715,340
March 31, 2020	10,296,598	2,818,869	4,996,478	18,111,945
December 31, 2019	10,045,712	2,863,199	4,702,577	17,611,488
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

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

Table 39

	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
	(dollars in thousands)											
For the quarter ended:												
September 30, 2020[1]	$ 18,025	1.67 %	$ 5,865	0.97 %	$ 6,939	1.32 %	$ 18,601	0.87 %	$ 2,372	0.23 %	$ 51,802	0.96 %
June 30, 2020	16,733	1.71 %	4,689	0.81 %	5,516	1.15 %	18,782	0.86 %	749	0.08 %	46,469	0.89 %
March 31, 2020	14,938	1.64 %	4,625	0.81 %	4,920	1.14 %	17,702	0.84 %	1,978	0.21 %	44,163	0.89 %
December 31, 2019	16,374	1.90 %	4,363	0.78 %	4,871	1.17 %	18,008	0.85 %	2,375	0.27 %	45,991	0.95 %
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	13,887	1.91 %	4,627	0.86 %	2,877	1.18 %	15,642	0.78 %	2,044	0.30 %	39,077	0.93 %

(1) See Note 10 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, 2020 and 2019.

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

Table 40

	Core Earnings by Quarter End								
	September 2020	June 2020	March 2020	December 2019	September 2019	June 2019	March 2019	December 2018	September 2018
					(in thousands)				
Revenues:									
Net effective spread	$ 51,802	$ 46,469	$ 44,163	$ 45,991	$ 42,461	$ 41,355	$ 38,801	$ 38,855	$ 39,077
Guarantee and commitment fees	4,659	4,943	4,896	5,432	5,208	5,276	5,419	5,309	5,170
Other	453	1,048	674	100	389	777	509	(129)	110
Total revenues	56,914	52,460	49,733	51,523	48,058	47,408	44,729	44,035	44,357
Credit related expense/(income):									
Provision for/(release of) losses	1,200	51	3,831	2,851	623	420	(393)	166	(3)
REO operating expenses	—	—	—	—	—	64	—	—	—
(Gains)/losses on sale of REO	—	—	(485)	—	—	—	—	—	41
Total credit related expense/(income)	1,200	51	3,346	2,851	623	484	(393)	166	38
Operating expenses:									
Compensation and employee benefits	8,791	8,087	10,127	6,732	7,654	6,770	7,606	7,167	6,777
General and administrative	5,044	5,295	5,363	5,773	5,253	4,689	4,596	5,829	4,350
Regulatory fees	725	725	725	725	688	687	688	687	625
Total operating expenses	14,560	14,107	16,215	13,230	13,595	12,146	12,890	13,683	11,752
Net earnings	41,154	38,302	30,172	35,442	33,840	34,778	32,232	30,186	32,567
Income tax expense	8,297	8,016	6,598	7,526	7,018	7,351	6,715	6,431	6,891
Preferred stock dividends	5,166	3,939	3,431	3,432	3,427	3,785	3,296	3,296	3,295
Core earnings	$ 27,691	$ 26,347	$ 20,143	$ 24,484	$ 23,395	$ 23,642	$ 22,221	$ 20,459	$ 22,381
Reconciling items:									
(Losses)/gains on undesignated financial derivatives due to fair value changes	(4,149)	8,700	(6,484)	4,469	(7,117)	10,485	2,240	(96)	3,625
(Losses)/gains on hedging activities due to fair value changes	(5,245)	(2,676)	(5,925)	(220)	(4,535)	(1,438)	(2,817)	(853)	1,051
Unrealized (losses)/gains on trading assets	(258)	(20)	106	172	49	61	44	57	(3)
Amortization of premiums/discounts and deferred gains on assets consolidated at fair value	97	35	3	40	(7)	(139)	(16)	67	(38)
Net effects of terminations or net settlements on financial derivatives	233	720	(1,300)	1,339	232	(592)	110	(312)	546
Issuance costs on the retirement of preferred stock	(1,667)	—	—	—	—	(1,956)	—	—	—
Income tax effect related to reconciling items	1,957	(1,419)	2,856	(1,218)	2,389	(1,759)	92	238	(1,088)
Net income attributable to common stockholders	$ 18,659	$ 31,687	$ 9,399	$ 29,066	$ 14,406	$ 28,304	$ 21,874	$ 19,560	$ 26,474

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 ("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 Chief Executive Officer and Chief 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, 2020.

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 Chief Executive Officer and Chief Financial Officer. Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that Farmer Mac's disclosure controls and procedures were effective as of September 30, 2020.

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, 2020 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

For a discussion of our risk factors see Part I, Item 1A "Risk Factors" of Farmer Mac's Annual Report on Form 10-K for the fiscal year ended December 31, 2019 ("2019 Form 10-K"), as filed with the SEC on February 25, 2020, and as updated by Farmer Mac's Current Report on Form 8-K filed with the SEC on April 6, 2020, Farmer Mac's Quarterly Report on Form 10-Q filed with the SEC on May 11, 2020, and Farmer Mac's Quarterly Report on Form 10-Q filed with the SEC on August 10, 2020 ("2020 Second Quarter Form 10-Q"). The information included in the "Risk Factors" section of the 2020 Second Quarter Form 10-Q is incorporated by reference herein. The risk factors in this section update and supplement the risk factors described in "Risk Factors" in the 2019 Form 10-K and the 2020 Second Quarter Form 10-Q. The primary risks to our business and how we seek to manage those risks are also described in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management," in the 2019 Form 10-K and in this report. The risks we face could materially affect our business, operations, operating results, financial condition, liquidity, capital levels, or future results and could cause our actual results to differ materially from our past results or the results contemplated by any forward-looking statements we make.

Farmer Mac’s efforts to manage and mitigate these risk factors may be unsuccessful, and the effectiveness of these efforts and the extent to which the COVID-19 pandemic affects Farmer Mac’s business, results of operations, and financial condition will depend on factors beyond its control, including: the duration, severity, and spread of the pandemic; third-party and government actions taken to contain COVID-19 or treat its impact and mitigate public health and economic effects; the nature and extent of the deferments approved for borrowers negatively affected by COVID-19; the conduct of agricultural producer borrowers in response to the COVID-19 pandemic and how quickly and to what extent affected borrowers can recover from the negative economic impact of the pandemic; and how quickly and to what extent normal economic and operating conditions can resume, including whether any future COVID-19 outbreaks interrupt economic recovery. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business and the trading price of our securities, particularly in light of the fast-changing nature of the COVID-19 pandemic, containment and stimulus measures, continued outbreaks and increasing rates of infection, and the related impacts to economic and operating conditions. Even after the COVID-19 pandemic is over, Farmer Mac may continue to experience material adverse effects to its business as a result of the disruption in the global economy, the domestic agricultural economy, and any resulting recession. Because there have been no comparable recent global pandemics that resulted in similar global macroeconomic impact, Farmer Mac does not yet know the full extent of the effects on its business, operations, or the global economy as a whole, but they could materially and adversely affect Farmer Mac’s business, operations, operating results, financial condition, liquidity, or capital levels as discussed in more detail below.

The trading price for Farmer Mac's Class C non-voting common stock may be volatile due to market influences, trading volume, the effects of equity awards for Farmer Mac's officers, directors, and employees, or sales of significant amounts of the stock by large holders.

The trading price of Farmer Mac's Class C non-voting common stock ("Class C stock") has at times experienced substantial price volatility and may continue to be volatile. For example, from January 2020 to October 2020, the closing price of the Class C stock ranged from $43.02 per share to $83.55 per share. The trading price may fluctuate in response to various factors, including short sales, hedging, the presence or absence of a share repurchase program, stock market influences in general that are unrelated to Farmer Mac's operating performance (including COVID-19), or sales of significant amounts of the stock by large holders. Farmer Mac typically grants equity awards each year that are based on the Class C stock, including grants that vest over time or upon the achievement of specified performance goals. Sales of stock acquired upon vesting or the exercise of equity awards by Farmer Mac's officers, directors, or employees, whether under an established trading plan or otherwise, could adversely affect the trading price of the Class C stock.

As to the potential effect of sales of significant amounts of the Class C stock by large holders, Farmer Mac is aware of a regulatory action that could result in significant sales by Zions Bancorporation, National Association (“Zions”), which held 600,000 shares of Class C stock (approximately 6.5% of the outstanding shares) as of November 6, 2020. In a letter granting conditional approval of a proposed merger involving Zions, the applicable federal regulator found that, although Zions had requested to maintain its ownership in Farmer Mac’s Class C stock after the merger, the continued ownership of Class C stock (held by Zions' holding company before the merger) would not be a permissible investment for the surviving national bank entity of the merger based on then-current precedent. Under the terms of the conditional approval letter, Zions was to divest its ownership of the Class C stock by September 30, 2020, however Zions has indicated in its Quarterly Report filed on Form 10-Q on May 6, 2020, that the regulator has granted approval for Zions to extend the original sale deadline from September 30, 2020 to a date which will enable an orderly sale of its Farmer Mac Class C stock. Even though the regulator has made the determination to allow Zions to sell the Class C stock over an extended period, Zions is still required to sell all or a significant amount of its remaining Class C stock, and those sales could adversely affect the trading price of the Class C stock. The merger condition related to Zions’ ownership of Class C stock does not apply to Zions’ ownership of 322,100 shares of Farmer Mac’s Class A voting common stock (approximately 31.25% of the outstanding shares of that stock as of September 30, 2020). Farmer Mac believes that Zions' sales of the Class C stock, and the expectation that its sales will continue until all shares are sold, have in the past and can be expected in the future to negatively impact the potential for increases in the price of the Class C stock.

All of these factors may be exacerbated during periods of low trading volume for Farmer Mac's Class C stock, which has averaged approximately 50,000 shares daily during 2020, and may have a prolonged negative effect on its trading price or increase price volatility.

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 2020, 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 131 shares of its Class C non-voting common stock in July 2020 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 $64.01 per share, which was the closing price of the Class C non-voting common stock on June 30, 2020 (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 on June 18, 2020 (Previously filed as Exhibit 3.1 to Form 10-Q filed August 10, 2020).
*	3.2	—	Amended and Restated By-Laws of the Registrant (Previously filed as Exhibit 3.1 to Form 8-K filed May 12, 2020).
*	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 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C (Previously filed as Exhibit 4.6 to Form 10-Q filed August 11, 2014).
*	4.5.1	—	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).
*	4.6	—	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).
*	4.6.1	—	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).
*	4.7	—	Specimen Certificate for 5.750% Non-Cumulative Preferred Stock, Series E (Previously filed as Exhibit 4.7 to Form 10-Q filed August 10, 2020).
*	4.7.1	—	Certificate of Designation of Terms and Conditions of 5.750% Non-Cumulative Preferred Stock, Series E (Previously filed as Exhibit 4.1 to Form 8-A filed May 20, 2020).
**	4.8		Specimen Certificate for 5.250% Non-Cumulative Preferred Stock, Series F.
*	4.8.1		Certificate of Designation of Terms and Conditions of 5.250% Non-Cumulative Preferred Stock, Series F (Previously filed as Exhibit 4.1 to Form 8-A filed August 20, 2020).
**	4.9	—	Description of the Registrant's securities that are registered under Section 12 of the Securities Exchange Act of 1934.
*	21	—	List of the Registrant's subsidiaries (Previously filed as Exhibit 21 to Form 10-K filed March 8, 2018).
**	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, 2020, 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, 2020, 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, 2020, 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.
#	Portions of this exhibit have been omitted pursuant to a request for confidential treatment.
†	Management contract or compensatory plan.

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 9, 2020
By:	Bradford T. Nordholm President and Chief Executive Officer (Principal Executive Officer)	Date
	/s/ Aparna Ramesh	November 9, 2020
By:	Aparna Ramesh Executive Vice President - Chief Financial Officer and Treasurer (Principal Financial Officer)	Date