As filed with the Securities and Exchange Commission on November 7, 2022

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, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____.

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)
1999 K Street, N.W., 4th Floor, Washington, DC	20006
(Address of principal executive offices)	(Zip code)

(202) 872-7700

(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol	Exchange on which registered
Class A voting common stock	AGM.A	New York Stock Exchange
Class C non-voting common stock	AGM	New York Stock Exchange
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
4.875% Non-Cumulative Preferred Stock, Series G	AGM.PRG	New York Stock Exchange

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

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 October 31, 2022, the registrant had outstanding 1,030,780 shares of Class A voting common stock, 500,301 shares of Class B voting common stock, and 9,269,536 shares of Class C non-voting common stock.

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PART I

Item 1. Financial Statements

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

	As of	
	September 30, 2022	December 31, 2021
	(in thousands)	
Assets:		
Cash and cash equivalents	$ 868,234	$ 908,785
Investment securities:		
Available-for-sale, at fair value (amortized cost of $4,590,696 and $3,834,714, respectively)	4,401,879	3,836,391
Held-to-maturity, at amortized cost	45,032	44,970
Other investments	2,106	1,229
Total Investment Securities	4,449,017	3,882,590
Farmer Mac Guaranteed Securities:		
Available-for-sale, at fair value (amortized cost of $7,421,595 and $6,135,807, respectively)	6,974,002	6,328,559
Held-to-maturity, at amortized cost	1,328,039	2,033,239
Total Farmer Mac Guaranteed Securities	8,302,041	8,361,798
USDA Securities:		
Trading, at fair value	1,851	4,401
Held-to-maturity, at amortized cost	2,428,638	2,436,331
Total USDA Securities	2,430,489	2,440,732
Loans:		
Loans held for investment, at amortized cost	8,817,783	8,314,096
Loans held for investment in consolidated trusts, at amortized cost	1,120,403	948,623
Allowance for losses	(13,002)	(14,041)
Total loans, net of allowance	9,925,184	9,248,678
Financial derivatives, at fair value	49,968	6,081
Accrued interest receivable (includes $7,798 and $10,418, respectively, related to consolidated trusts)	167,962	165,604
Guarantee and commitment fees receivable	46,347	45,538
Deferred tax asset, net	18,978	15,869
Prepaid expenses and other assets	183,368	45,334
Total Assets	$ 26,441,588	$ 25,121,009
Liabilities and Equity:		
Liabilities:		
Notes payable	$ 23,500,657	$ 22,713,771
Debt securities of consolidated trusts held by third parties	1,090,539	981,379
Financial derivatives, at fair value	184,554	35,554
Accrued interest payable (includes $5,547 and $9,619, respectively, related to consolidated trusts)	90,821	59,003
Guarantee and commitment obligation	45,726	43,926
Accounts payable and accrued expenses	295,758	71,726
Reserve for losses	1,510	1,950
Total Liabilities	25,209,565	23,907,309
Commitments and Contingencies (Note 6)		
Equity:		
Preferred stock:		
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	77,003
Series F, par value $25 per share, 4,800,000 shares authorized, issued and outstanding	116,160	116,160
Series G, par value $25 per share, 5,000,000 shares authorized, issued and outstanding	121,327	121,327
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, 9,269,367 shares and 9,235,205 shares outstanding, respectively	9,269	9,235
Additional paid-in capital	128,117	125,993
Accumulated other comprehensive (loss)/income, net of tax	(63,589)	3,853
Retained earnings	672,164	588,557
Total Equity	1,232,023	1,213,700
Total Liabilities and Equity	$ 26,441,588	$ 25,121,009

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, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	(in thousands, except per share amounts)			
Interest income:				
Investments and cash equivalents	$ 21,581	$ 4,121	$ 38,497	$ 14,107
Farmer Mac Guaranteed Securities and USDA Securities	74,695	42,339	169,231	127,976
Loans	97,514	61,923	241,393	181,631
Total interest income	193,790	108,383	449,121	323,714
Total interest expense	125,937	49,467	251,816	155,599
Net interest income	67,853	58,916	197,305	168,115
(Provision for)/release of losses	(617)	(366)	699	(518)
Net interest income after (provision for)/release of losses	67,236	58,550	198,004	167,597
Non-interest income/(expense):				
Guarantee and commitment fees	2,643	3,155	9,551	9,182
Gains/(losses) on financial derivatives	772	(888)	21,551	2,581
(Losses)/gains on trading securities	(41)	37	(75)	(38)
Gains on sale of available-for-sale investment securities	—	253	—	253
Release of reserve for losses	167	111	440	1,277
Other income	651	582	1,805	1,600
Non-interest income	4,192	3,250	33,272	14,855
Operating expenses:				
Compensation and employee benefits	11,648	10,027	36,661	31,601
General and administrative	6,919	6,330	21,717	19,015
Regulatory fees	812	750	2,437	2,250
Operating expenses	19,379	17,107	60,815	52,866
Income before income taxes	52,049	44,693	170,461	129,586
Income tax expense	10,631	9,388	35,735	27,350
Net income	41,418	35,305	134,726	102,236
Preferred stock dividends	(6,791)	(6,774)	(20,374)	(17,885)
Net income attributable to common stockholders	$ 34,627	$ 28,531	$ 114,352	$ 84,351
Earnings per common share:				
Basic earnings per common share	$ 3.21	$ 2.65	$ 10.61	$ 7.84
Diluted earnings per common share	$ 3.18	$ 2.63	$ 10.51	$ 7.79

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, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	(in thousands			
Net income	$ 41,418	$ 35,305	$ 134,726	$ 102,236
Other comprehensive (loss)/income:				
Net unrealized (losses)/gains on available-for-sale securities	(41,827)	991	(158,273)	29,966
Net changes in held-to-maturity securities	(622)	(2,385)	220	(6,195)
Net unrealized gains on cash flow hedges	24,596	3,258	72,684	16,899
Other comprehensive (loss)/income before tax	(17,853)	1,864	(85,369)	40,670
Income tax benefit/(expense) related to other comprehensive (loss)/income	3,748	(391)	17,927	(8,541)
Other comprehensive (loss)/income net of tax	(14,105)	1,473	(67,442)	32,129
Comprehensive income/(loss)	$ 27,313	$ 36,778	$ 67,284	$ 134,365

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

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

	Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income/(Loss)	Retained Earnings	Total Equity
	Shares	Amount	Shares	Amount				
					(in thousands)			
Balance as of December 31, 2021	19,980	$ 484,531	10,766	$ 10,766	$ 125,993	$ 3,853	$ 588,557	$1,213,700
Net Income	—	—	—	—	—	—	51,453	51,453
Other comprehensive loss, net of tax	—	—	—	—	—	(43,518)	—	(43,518)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(6,791)	(6,791)
Common stock (cash dividend of $0.95 per share)	—	—	—	—	—	—	(10,229)	(10,229)
Issuance of Class C Common Stock	—	—	22	22	46	—	—	68
Stock-based compensation cost	—	—	—	—	2,113	—	—	2,113
Other stock-based award activity	—	—	—	—	(1,049)	—	—	(1,049)
Balance as of March 31, 2022	19,980	$ 484,531	10,788	$ 10,788	$ 127,103	$ (39,665)	$ 622,990	$1,205,747
Net Income	—	—	—	—	—	—	41,855	41,855
Other comprehensive loss, net of tax	—	—	—	—	—	(9,819)	—	(9,819)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(6,792)	(6,792)
Common stock (cash dividend of $0.95 per share)	—	—	—	—	—	—	(10,256)	(10,256)
Issuance of Class C Common Stock	—	—	9	9	46	—	—	55
Stock-based compensation cost	—	—	—	—	862	—	—	862
Other stock-based award activity	—	—	—	—	(442)	—	—	(442)
Balance as of June 30, 2022	19,980	$ 484,531	10,797	$ 10,797	$ 127,569	$ (49,484)	$ 647,797	$1,221,210
Net Income	—	—	—	—	—	—	41,418	41,418
Other comprehensive loss, net of tax	—	—	—	—	—	(14,105)	—	(14,105)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(6,791)	(6,791)
Common stock (cash dividend of $0.95 per share)	—	—	—	—	—	—	(10,260)	(10,260)
Issuance of Class C Common Stock	—	—	3	3	48	—	—	51
Stock-based compensation cost	—	—	—	—	832	—	—	832
Other stock-based award activity	—	—	—	—	(332)	—	—	(332)
Balance as of September 30, 2022	19,980	$ 484,531	10,800	$ 10,800	$ 128,117	$ (63,589)	$ 672,164	$1,232,023

	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, 2020	14,980	$ 363,204	10,737	$ 10,737	$ 122,899	$ (13,923)	$ 515,017	$ 997,934
Net Income	—	—	—	—	—	—	38,069	38,069
Other comprehensive income, net of tax	—	—	—	—	—	65,667	—	65,667
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(5,269)	(5,269)
Common stock (cash dividend of $0.88 per share)	—	—	—	—	—	—	(9,450)	(9,450)
Issuance of Class C Common Stock	—	—	21	21	12	—	—	33
Stock-based compensation cost	—	—	—	—	1,665	—	—	1,665
Other stock-based award activity	—	—	—	—	(858)	—	—	(858)
Balance as of March 31, 2021	14,980	$ 363,204	10,758	$ 10,758	$ 123,718	$ 51,744	$ 538,367	$1,087,791
Net Income	—	—	—	—	—	—	28,863	28,863
Other comprehensive loss, net of tax	—	—	—	—	—	(35,011)	—	(35,011)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(5,842)	(5,842)
Common stock (cash dividend of $0.88 per share)	—	—	—	—	—	—	(9,474)	(9,474)
Issuance of Series G Preferred Stock	5,000	121,327	—	—	—	—	—	121,327
Issuance of Class C Common Stock	—	—	7	7	13	—	—	20
Stock-based compensation cost	—	—	—	—	891	—	—	891
Other stock-based award activity	—	—	—	—	(474)	—	—	(474)
Balance as of June 30, 2021	19,980	$ 484,531	10,765	$ 10,765	$ 124,148	$ 16,733	$ 551,914	$1,188,091
Net Income	—	—	—	—	—	—	35,305	35,305
Other comprehensive income, net of tax	—	—	—	—	—	1,473	—	1,473
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(6,774)	(6,774)
Common stock (cash dividend of $0.88 per share)	—	—	—	—	—	—	(9,474)	(9,474)
Issuance of Class C Common Stock	—	—	1	1	45	—	—	46
Stock-based compensation cost	—	—	—	—	749	—	—	749
Balance as of September 30, 2021	19,980	$ 484,531	10,766	$ 10,766	$ 124,942	$ 18,206	$ 570,971	$1,209,416

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, 2022	September 30, 2021
	(in thousands)	
Cash flows from operating activities:		
Net income	$ 134,726	$ 102,236
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	2,456	13,631
Amortization of debt premiums, discounts, and issuance costs	11,839	5,106
Net change in fair value of trading securities, hedged assets, and financial derivatives	665,775	215,769
Gain on the sale of available-for-sale investment securities	—	(253)
Total release of allowance for losses	(1,139)	(759)
Excess tax benefits related to stock-based awards	87	292
Deferred income taxes	14,820	(458)
Stock-based compensation expense	3,807	3,306
Proceeds from repayment of loans purchased as held for sale	31,086	44,744
Net change in:		
Interest receivable	(1,931)	39,030
Guarantee and commitment fees receivable	991	66
Other assets	(144,031)	5,594
Accrued interest payable	31,818	(12,414)
Custodial deposit liability	(41,392)	20,798
Other liabilities	(2,654)	(3,469)
Net cash provided by operating activities	706,258	433,219
Cash flows from investing activities:		
Purchases of available-for-sale investment securities	(1,789,932)	(1,414,547)
Purchases of other investment securities	(877)	(403)
Purchases of Farmer Mac Guaranteed Securities and USDA Securities	(4,308,083)	(2,658,305)
Purchases of loans held for investment	(2,122,360)	(2,107,746)
Purchases of defaulted loans	—	(8,713)
Proceeds from repayment of available-for-sale investment securities	1,103,046	1,303,141
Proceeds from repayment of Farmer Mac Guaranteed Securities and USDA Securities	3,933,894	2,282,970
Proceeds from repayment of loans purchased as held for investment	1,077,209	1,500,239
Proceeds from sale of loans previously classified as held for investment	9,000	10,000
Proceeds from sale of available-for-sale investment securities	—	257,524
Proceeds from sale of Farmer Mac Guaranteed Securities	47,212	84,131
Net cash used in investing activities	(2,050,891)	(751,709)
Cash flows from financing activities:		
Proceeds from issuance of discount notes	40,788,399	46,784,100
Proceeds from issuance of medium-term notes	6,866,487	8,588,616
Proceeds from third parties from issuance of debt securities of consolidated trusts	258,198	—
Payments to redeem discount notes	(42,096,456)	(46,182,144)
Payments to redeem medium-term notes	(4,261,315)	(8,640,370)
Payments to third parties on debt securities of consolidated trusts	(198,463)	(441,646)
Proceeds from common stock issuance	140	71
Proceeds from preferred stock issuance, net of stock issuance costs	—	121,327
Tax payments related to share-based awards	(1,789)	(1,305)
Dividends paid on common and preferred stock	(51,119)	(45,048)
Net cash provided by financing activities	1,304,082	183,601
Net change in cash and cash equivalents	(40,551)	(134,889)
Cash and cash equivalents at beginning of period	908,785	1,033,941
Cash and cash equivalents at end of period	$ 868,234	$ 899,052
Non-cash activity:		
Loans acquired and securitized as Farmer Mac Guaranteed Securities	47,212	84,131
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	47,212	84,131
Loans held for investment transferred to consolidated trusts	297,713	—
Reclassification of defaulted loans from loans held for investment in consolidated trusts to loans held for investment	1,781	24,690
Reclassification of loans held for investment to loans held for sale	—	301,551
Capitalized interest	446	1,253
Charge-off from the allowance for losses	84	—
Purchases of securities - traded, not yet settled	268,370	—

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, 2021 consolidated balance sheet presented in this report has been derived from Farmer Mac's audited 2021 consolidated financial statements, as revised. 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 2021 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, 2021, as filed with the SEC on February 28, 2022. 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, 2022.

Farmer Mac has revised its prior period financial information to correct an error that was not material to those previous consolidated financial statements, taken as a whole. For more information on the revision, refer to Note 11, Revision of Prior Period Financial Statements.

Principles of Consolidation

The consolidated financial statements include the accounts of Farmer Mac and its two subsidiaries: (1) Farmer Mac Mortgage Securities Corporation, 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 Securities included in the Agricultural Finance line of business. The consolidated financial statements also include the accounts of Variable Interest Entities ("VIEs") in which Farmer Mac determined itself to be the primary beneficiary.

Table 1.1

	Consolidation of Variable Interest Entities		
	As of September 30, 2022		
	Agricultural Finance	Treasury	Total
		(in thousands)	
On-Balance Sheet:			
Consolidated VIEs:			
Loans held for investment in consolidated trusts, at amortized cost	$ 1,120,403	$ —	$ 1,120,403
Debt securities of consolidated trusts held by third parties [(1)(2)]	1,090,539	—	1,090,539
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Carrying value	29,471	—	29,471
Maximum exposure to loss [(3)]	32,348	—	32,348
Investment securities:			
Carrying value [(4)]	—	2,906,158	2,906,158
Maximum exposure to loss [(3) (4)]	—	3,083,631	3,083,631
Off-Balance Sheet:			
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Maximum exposure to loss [(3) (5)]	509,114	—	509,114

(1) Includes borrower remittances of $9.3 million. The borrower remittances had not been passed through to third-party investors as of September 30, 2022.

(2) Includes $39.1 million in unamortized discount related to a structured securitization transaction.

(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, government-sponsored enterprise ("GSE")-guaranteed mortgage-backed securities, and other mission related investments.

(5) The amount under the Agricultural Finance line of business relates to unconsolidated trusts where it was determined that Farmer Mac was either not the primary beneficiary due to shared power with an unrelated party or a subordinate class majority holder has the unilateral right to remove Farmer Mac as Master Servicer without cause.

	Consolidation of Variable Interest Entities		
	As of December 31, 2021		
	Agricultural Finance	Treasury	Total
		(in thousands)	
On-Balance Sheet:			
Consolidated VIEs:			
Loans held for investment in consolidated trusts, at amortized cost	$ 948,623	$ —	$ 948,623
Debt securities of consolidated trusts held by third parties [1]	981,379	—	981,379
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Carrying value	42,298	—	42,298
Maximum exposure to loss [2]	42,155	—	42,155
Investment securities:			
Carrying value [3]	—	2,258,219	2,258,219
Maximum exposure to loss [2] [3]	—	2,246,272	2,246,272
Off-Balance Sheet:			
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Maximum exposure to loss [2] [4]	578,358	—	578,358

(1) Includes borrower remittances of $32.8 million. The borrower remittances had not been passed through to third-party investors as of December 31, 2021.
(2) Farmer Mac uses unpaid principal balance and outstanding face amount of investment securities to represent maximum exposure to loss.
(3) Includes auction-rate certificates, government-sponsored enterprise ("GSE")-guaranteed mortgage-backed securities, and other mission related investments.
(4) The amount under the Agricultural Finance line of business relates to unconsolidated trusts where it was determined that Farmer Mac was either not the primary beneficiary due to shared power with an unrelated party or a subordinate class majority holder has the unilateral right to remove Farmer Mac as Master Servicer without cause.

(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, 2022 and 2021:

Table 1.2

	For the Three Months Ended					
	September 30, 2022			September 30, 2021		
	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	$ 34,627	10,799	$ 3.21	$ 28,531	10,766	$ 2.65
Effect of dilutive securities[(1)]						
SARs and restricted stock	—	75	(0.03)	—	76	(0.02)
Diluted EPS	$ 34,627	10,874	$ 3.18	$ 28,531	10,842	$ 2.63

(1) For the three months ended September 30, 2022 and 2021, SARs and restricted stock of 18,432 and 28,575, 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, 2022 and 2021 contingent shares of unvested restricted stock of 18,535 and 18,183 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, 2022			September 30, 2021		
	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	$ 114,352	10,787	$ 10.61	$ 84,351	10,756	$ 7.84
Effect of dilutive securities[(1)]						
SARs and restricted stock	—	88	(0.10)	—	78	(0.05)
Diluted EPS	$ 114,352	10,875	$ 10.51	$ 84,351	10,834	$ 7.79

(1) For the nine months ended September 30, 2022 and 2021, SARs and restricted stock of 37,120 and 52,434, 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, 2022 and 2021 contingent shares of unvested restricted stock of 18,535 and 18,183 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, 2022 and 2021.

Table 1.3

	As of September 30, 2022				As of September 30, 2021			
	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	$ (98,924)	$ 16,818	$ 32,622	$ (49,484)	$ 8,954	$ 19,819	$ (12,040)	$ 16,733
Other comprehensive (loss)/ income before reclassifications	(33,041)	—	20,277	(12,764)	1,275	—	1,049	2,324
Amounts reclassified from AOCI	(2)	(492)	(847)	(1,341)	(493)	(1,884)	1,526	(851)
Net comprehensive (loss)/ income	(33,043)	(492)	19,430	(14,105)	782	(1,884)	2,575	1,473
Ending Balance	$ (131,967)	$ 16,326	$ 52,052	$ (63,589)	$ 9,736	$ 17,935	$ (9,465)	$ 18,206
For the Nine Months Ended:								
Beginning Balance	$ (6,932)	$ 16,153	$ (5,368)	$ 3,853	$ (13,937)	$ 22,829	$ (22,815)	$ (13,923)
Other comprehensive (loss)/ income before reclassifications	(125,027)	—	55,766	(69,261)	25,734	—	9,041	34,775
Amounts reclassified from AOCI	(8)	173	1,654	1,819	(2,061)	(4,894)	4,309	(2,646)
Net comprehensive (loss)/ income	(125,035)	173	57,420	(67,442)	23,673	(4,894)	13,350	32,129
Ending Balance	$ (131,967)	$ 16,326	$ 52,052	$ (63,589)	$ 9,736	$ 17,935	$ (9,465)	$ 18,206

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, 2022 and 2021:

Table 1.4

	For the Three Months Ended					
	September 30, 2022			September 30, 2021		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
	(in thousands)					
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding (losses)/gains on available-for-sale securities	$ (41,824)	$ (8,783)	$ (33,041)	$ 1,614	$ 339	$ 1,275
Less reclassification adjustments included in:						
Net interest income[1]	—	—	—	(362)	(76)	(286)
Gains on sale of available-for-sale investment securities[2]	—	—	—	(253)	(53)	(200)
Other income[3]	(3)	(1)	(2)	(8)	(1)	(7)
Total	$ (41,827)	$ (8,784)	$ (33,043)	$ 991	$ 209	$ 782
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income[4]	(622)	(130)	(492)	(2,385)	(501)	(1,884)
Total	$ (622)	$ (130)	$ (492)	$ (2,385)	$ (501)	$ (1,884)
Cash flow hedges						
Unrealized gains on cash flow hedges	$ 25,668	$ 5,391	$ 20,277	$ 1,326	$ 277	$ 1,049
Less reclassification adjustments included in:						
Net interest income[5]	(1,072)	(225)	(847)	1,932	406	1,526
Total	$ 24,596	$ 5,166	$ 19,430	$ 3,258	$ 683	$ 2,575
Other comprehensive (loss)/income	$ (17,853)	$ (3,748)	$ (14,105)	$ 1,864	$ 391	$ 1,473

(1) Relates to the amortization of unrealized gains on hedged items prior to the application of fair value hedge accounting.
(2) Represents unrealized gains and losses on sales of available-for-sale securities.
(3) Represents amortization of deferred gains related to certain available-for-sale USDA Securities and Farmer Mac Guaranteed USDA Securities.
(4) Relates to the amortization of unrealized gains or losses prior to the reclassification of these securities from available-for-sale to held-to-maturity. The amortization of unrealized gains or losses reported in AOCI for held-to-maturity securities will be offset by the amortization of the premium or discount created from the transfer into held-to-maturity securities, which occurred at fair value. These unrealized gains or losses will be recorded over the remaining life of the security with no impact on future net income.
(5) Relates to the recognition of unrealized gains and losses on cash flow hedges recorded in AOCI.

	For the Nine Months Ended					
	September 30, 2022			September 30, 2021		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
			(in thousands)			
Other comprehensive income:						
Available-for-sale-securities:						
Unrealized holding (losses)/gains on available-for-sale securities	$ (158,263)	$ (33,236)	$ (125,027)	$ 32,574	$ 6,840	$ 25,734
Less reclassification adjustments included in:						
Net interest income[1]	—	—	—	(2,333)	(490)	(1,843)
Gains on sale of available-for-sale investment securities[2]	—	—	—	(253)	(53)	(200)
Other income[3]	(10)	(2)	(8)	(22)	(4)	(18)
Total	$ (158,273)	$ (33,238)	$ (125,035)	$ 29,966	$ 6,293	$ 23,673
Held-to-maturity securities:						
Less reclassification adjustments included in:						
Net interest income[4]	220	47	173	(6,195)	(1,301)	(4,894)
Total	$ 220	$ 47	$ 173	$ (6,195)	$ (1,301)	$ (4,894)
Cash flow hedges						
Unrealized gains on cash flow hedges	$ 70,590	$ 14,824	$ 55,766	$ 11,445	$ 2,404	$ 9,041
Less reclassification adjustments included in:						
Net interest income[5]	2,094	440	1,654	5,454	1,145	4,309
Total	$ 72,684	$ 15,264	$ 57,420	$ 16,899	$ 3,549	$ 13,350
Other comprehensive (loss)/income	$ (85,369)	$ (17,927)	$ (67,442)	$ 40,670	$ 8,541	$ 32,129

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

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

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

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

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

(c) New Accounting Standards

Recently Adopted Accounting Guidance

Standard	Description	Date of Adoption	Effect on Consolidated Financial Statements
ASU 2020-04 and 2021-01, 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.	January 1, 2020	Farmer Mac adopted optional expedients specific to discounting transition on a retrospective basis, and as a result of this election, the discounting transition did not have a material effect on Farmer Mac's financial position, results of operations, or cash flows. Farmer Mac is exploring the adoption of additional optional expedients, including contract modification relief, and is not expected to have a material effect on Farmer Mac's financial position, results of operations, or cash flows.

Recently Issued Accounting Guidance

Standard	Description	Effect on Consolidated Financial Statements
ASU 2022-02, Financial Instruments-Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures	The Update addresses and amends areas identified by the Financial Accounting Standards Board ("FASB") as part of its post-implementation review of the accounting standard that introduced the current expected credit losses (“CECL”) model. The amendments eliminate the accounting guidance for troubled debt restructurings by creditors that have adopted the CECL model and enhance the disclosure requirements for loan refinancings and restructurings made with borrowers experiencing financial difficulty. In addition, the amendments require disclosure of current-period gross writeoffs for financing receivables and net investment in leases by year of origination in the vintage disclosures. ASU 2022-02 is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years for entities that have adopted the CECL accounting standard. Early adoption, however, is permitted if an entity has adopted the CECL accounting standard.	Farmer Mac is still assessing the impact of the new accounting standard but does not expect that adoption of the new guidance will have a material effect on Farmer Mac's financial position, results of operations, or cash flows.

2. INVESTMENT SECURITIES

The following tables set forth information about Farmer Mac's available-for-sale and held-to-maturity investment securities as of September 30, 2022 and December 31, 2021:

Table 2.1

	As of September 30, 2022						
	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	$ (38)	$ —	$ (419)	$ 19,243
Floating rate Government/GSE guaranteed mortgage-backed securities	2,383,351	33	2,383,384	—	2,679	(25,535)	2,360,528
Fixed rate GSE guaranteed mortgage-backed securities	993,305	(12,770)	980,535	—	—	(138,831)	841,704
Fixed rate U.S. Treasuries	1,211,115	(4,038)	1,207,077	—	—	(26,673)	1,180,404
Total available-for-sale	4,607,471	(16,775)	4,590,696	(38)	2,679	(191,458)	4,401,879
Held-to-maturity:							
Floating rate Government/GSE guaranteed mortgage-backed securities[3]	45,032	—	45,032	—	—	(1,758)	43,274
Total held-to-maturity	$ 45,032	$ —	$ 45,032	$ —	$ —	$ (1,758)	$ 43,274

(1) Amounts presented exclude $6.3 million of accrued interest receivable on investment securities as of September 30, 2022.
(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 3.0% as of September 30, 2022.

	As of December 31, 2021						
	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	$ (52)	$ —	$ (394)	$ 19,254
Floating rate Government/GSE guaranteed mortgage-backed securities	2,168,016	90	2,168,106	—	11,821	(1,096)	2,178,831
Fixed rate GSE guaranteed mortgage-backed securities	451,660	12,525	464,185	—	382	(5,730)	458,837
Fixed rate U.S. Treasuries	1,180,000	2,723	1,182,723	—	—	(3,254)	1,179,469
Total available-for-sale	3,819,376	15,338	3,834,714	(52)	12,203	(10,474)	3,836,391
Held-to-maturity:							
Floating rate Government/GSE guaranteed mortgage-backed securities[3]	44,970	—	44,970	—	1,612	—	46,582
Total held-to-maturity	$ 44,970	$ —	$ 44,970	$ —	$ 1,612	$ —	$ 46,582

(1) Amounts presented exclude $4.3 million of accrued interest receivable on investment securities as of December 31, 2021.
(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 December 31, 2021.

Farmer Mac did not sell any securities from its available-for-sale investment portfolio during the three and nine months ended September 30, 2022. During the three and nine months ended September 30, 2021, Farmer Mac received proceeds of $232.0 million and $257.5 million, respectively, from the sale of securities from its available-for-sale investment portfolio, resulting in gains of $0.3 million and $0.3 million, respectively.

As of September 30, 2022 and December 31, 2021, unrealized losses on available-for-sale investment securities were as follows:

Table 2.2

	As of September 30, 2022			
	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	$ —	$ —	$ 19,243	$ (419)
Floating rate Government/GSE guaranteed mortgage-backed securities	1,900,726	(24,848)	27,935	(687)
Fixed rate Government/GSE guaranteed mortgage-backed securities	704,056	(107,687)	137,635	(31,144)
Fixed rate U.S. Treasuries	595,244	(10,096)	585,160	(16,577)
Total	$ 3,200,026	$ (142,631)	$ 769,973	$ (48,827)
Number of securities in loss position		182		35

	As of December 31, 2021			
	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	$ —	$ —	$ 19,254	$ (394)
Floating rate Government/GSE guaranteed mortgage-backed securities	459,195	(619)	37,307	(477)
Fixed rate Government/GSE guaranteed mortgage-backed securities	406,805	(5,730)	—	—
Fixed rate U.S. Treasuries	1,123,439	(3,070)	51,031	(184)
Total	$ 1,989,439	$ (9,419)	$ 107,592	$ (1,055)
Number of securities in loss position		69		24

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, 2022 and December 31, 2021, 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, 2022 and December 31, 2021, 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, 2022 that is, on average, approximately 94.0% 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, 2022 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, 2022		
	Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
		(dollars in thousands)	
Due within one year	$ 934,927	$ 920,426	0.73%
Due after one year through five years	620,188	606,506	1.50%
Due after five years through ten years	2,262,727	2,107,401	2.57%
Due after ten years	772,854	767,546	2.65%
Total	$ 4,590,696	$ 4,401,879	2.06%

3. FARMER MAC GUARANTEED SECURITIES AND USDA SECURITIES

The following tables set forth information about on-balance sheet Farmer Mac Guaranteed Securities and USDA Securities as of September 30, 2022 and December 31, 2021:

Table 3.1

	As of September 30, 2022						
	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	$ 1,306,865	$ —	$ 1,306,865	$ (56)	$ —	$ (60,668)	$ 1,246,141
Farmer Mac Guaranteed USDA Securities	21,256	(26)	21,230	—	1	(1,760)	19,471
Total Farmer Mac Guaranteed Securities	1,328,121	(26)	1,328,095	(56)	1	(62,428)	1,265,612
USDA Securities	2,404,124	24,514	2,428,638	—	178	(398,119)	2,030,697
Total held-to-maturity	$ 3,732,245	$ 24,488	$ 3,756,733	$ (56)	$ 179	$ (460,547)	$ 3,296,309
Available-for-sale:							
AgVantage	$ 7,409,650	$ 853	$ 7,410,503	$ (608)	$ 1,946	$ (446,080)	$ 6,965,761
Farmer Mac Guaranteed Securities[3]	—	11,092	11,092	—	—	(2,851)	8,241
Total available-for-sale	$ 7,409,650	$ 11,945	$ 7,421,595	$ (608)	$ 1,946	$ (448,931)	$ 6,974,002
Trading:							
USDA Securities[4]	$ 1,879	$ 79	$ 1,958	$ —	$ —	$ (107)	$ 1,851

(1) Amounts presented exclude $44.0 million, $41.1 million, and $38,000 of accrued interest receivable on available-for-sale, held-to-maturity, and trading securities, respectively, as of September 30, 2022.

(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) Fair value includes $8.2 million of an interest-only security with a notional amount of $251.6 million.

(4) The trading USDA securities had a weighted average yield of 4.84% as of September 30, 2022.

	As of December 31, 2021						
	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	$ 2,003,486	$ —	$ 2,003,486	$ (132)	$ 10,097	$ (12,764)	$ 2,000,687
Farmer Mac Guaranteed USDA Securities	29,859	26	29,885	—	1,162	—	31,047
Total Farmer Mac Guaranteed Securities	2,033,345	26	2,033,371	(132)	11,259	(12,764)	2,031,734
USDA Securities	2,411,649	24,682	2,436,331	—	95,741	—	2,532,072
Total held-to-maturity	$ 4,444,994	$ 24,708	$ 4,469,702	$ (132)	$ 107,000	$ (12,764)	$ 4,563,806
Available-for-sale:							
AgVantage	$ 6,122,240	$ 1,270	$ 6,123,510	$ (263)	$ 212,908	$ (20,010)	$ 6,316,145
Farmer Mac Guaranteed Securities(3)	—	12,297	12,297	—	117	—	$ 12,414
Total available-for-sale	$ 6,122,240	$ 13,567	$ 6,135,807	$ (263)	$ 213,025	$ (20,010)	$ 6,328,559
Trading:							
USDA Securities(4)	$ 4,299	$ 134	$ 4,433	$ —	$ 1	$ (33)	$ 4,401

(1) Amounts presented exclude $29.8 million, $42.1 million, and $0.1 million of accrued interest receivable on available-for-sale, held-to-maturity, and trading securities, respectively, as of December 31, 2021.

(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) Fair value includes $12.4 million of an interest-only security with a notional amount of $275.4 million.

(4) The trading USDA securities had a weighted average yield of 5.05% as of December 31, 2021.

As of September 30, 2022 and December 31, 2021, 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, 2022			
	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	$ 866,689	$ (15,176)	$ 379,508	$ (45,492)
Farmer Mac Guaranteed USDA Securities	19,493	(1,760)	—	—
USDA Securities	2,019,045	(398,119)	—	—
Total held-to-maturity	$ 2,905,227	$ (415,055)	$ 379,508	$ (45,492)
Available-for-sale:				
AgVantage	$ 5,431,594	$ (372,439)	$ 951,481	$ (73,641)
Farmer Mac Guaranteed Securities	8,241	(2,851)	—	—
Total available-for-sale	$ 5,439,835	$ (375,290)	$ 951,481	$ (73,641)

	As of December 31, 2021							
	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	$	1,387,236	$	(12,764)	$	—	$	—
USDA Securities		—		—		—		—
Total held-to-maturity	$	1,387,236	$	(12,764)	$	—	$	—
Available-for-sale:								
AgVantage	$	1,867,364	$	(17,263)	$	90,971	$	(2,747)

The unrealized losses presented above are principally due to changes in interest rates from the date of acquisition to September 30, 2022 and December 31, 2021, as applicable. The unrealized losses on the held-to-maturity USDA Securities as of both September 30, 2022 and December 31, 2021 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 Securities in the Agricultural Finance line of business is covered by the full faith and credit guarantee of the United States of America.

The unrealized losses from AgVantage securities were on 97 and 13 available-for-sale securities as of September 30, 2022 and December 31, 2021, respectively. There were 44 and 10 held-to-maturity AgVantage securities with an unrealized loss as of September 30, 2022 and December 31, 2021, respectively. As of September 30, 2022 and December 31, 2021, 9 and 2 available-for-sale AgVantage securities, respectively, had been in a loss position for more than 12 months. As of September 30, 2022, there were 4 held-to-maturity AgVantage securities in a loss position for more than 12 months. As of December 31, 2021, there were no held-to-maturity AgVantage securities in a loss position for more than 12 months.

During the three and nine months ended September 30, 2022 and 2021, Farmer Mac had no sales of AgVantage Farmer Mac Guaranteed Securities, USDA Farmer Mac Guaranteed Securities or USDA Trading 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, 2022 are set forth below. The balances presented are based on their contractual maturities, although the actual maturities may differ due to prepayments of the underlying assets.

Table 3.3

	As of September 30, 2022		
	Available-for-Sale Securities		
	Amortized Cost[1]	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$ 1,264,459	$ 1,260,840	3.14 %
Due after one year through five years	3,042,213	2,890,360	3.03 %
Due after five years through ten years	1,389,102	1,279,044	3.29 %
Due after ten years	1,725,821	1,543,758	3.53 %
Total	$ 7,421,595	$ 6,974,002	3.21 %

(1) Amounts presented exclude $44.0 million of accrued interest receivable.

	As of September 30, 2022		
	Held-to-Maturity Securities		
	Amortized Cost[1]	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$ 613,850	$ 606,761	2.17 %
Due after one year through five years	727,249	664,058	1.97 %
Due after five years through ten years	266,980	227,512	3.06 %
Due after ten years	2,148,654	1,797,978	3.25 %
Total	$ 3,756,733	$ 3,296,309	2.79 %

(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, 2021, as filed with the SEC on February 28, 2022.

The following tables summarize information related to Farmer Mac's financial derivatives on a gross basis without giving consideration to master netting arrangements. The table below includes accrued interest on cleared swaps, but excludes $4.3 million and $3.0 million of accrued interest receivable and $1.5 million and $1.9 million of accrued interest payable on uncleared swaps as of September 30, 2022 and December 31, 2021, respectively. The aforementioned accrued interest on uncleared swaps is included within Accrued Interest Receivable and Accrued Interest Payable on the Consolidated Balance Sheet.

Table 4.1

	As of September 30, 2022						
		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:							
Receive fixed non-callable	$ 8,984,779	$ 125	$ (10,282)	2.87%	1.56%		1.79
Pay fixed non-callable	7,866,679	29,089	(429)	2.07%	2.85%		11.18
Receive fixed callable	2,491,077	—	(184,088)	2.76%	1.58%		3.34
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	607,000	29,525	(4)	1.94%	3.39%		5.23
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	197,032	1,611	(44)	3.10%	2.61%		4.62
Receive fixed non-callable	404,350	—	(345)	2.88%	0.46%		1.39
Basis swaps	1,818,911	310	(572)	3.02%	3.15%		2.63
Treasury futures	32,700	536	(18)			113.64	
Netting adjustments[1]		(11,228)	11,228				
Total financial derivatives	$ 22,402,528	$ 49,968	$ (184,554)				

(1) Amounts represent the application of the netting requirements that allow Farmer Mac to settle positive and negative positions, including accrued interest, held or placed with the same clearing agent.

	As of December 31, 2021						
		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	$ 6,238,438	$ 205	$ (9,525)	2.06%	0.13%		11.64
Receive fixed non-callable	5,884,529	974	(1,475)	0.17%	0.88%		2.27
Receive fixed callable	1,571,577	103	(17,612)	0.01%	0.80%		4.17
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	570,000	5,426	(3,095)	1.93%	0.49%		5.72
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	229,062	52	(4,807)	3.22%	0.16%		4.95
Receive fixed non-callable	1,377,250	115	(132)	0.13%	0.43%		0.97
Basis swaps	1,608,911	507	(296)	0.17%	0.20%		3.31
Treasury futures	67,600	73	—			130.58	
Credit valuation adjustment		—	14				
Netting adjustments[1]		(1,374)	1,374				
Total financial derivatives	$ 17,547,367	$ 6,081	$ (35,554)				

[1] Amounts represent the application of the netting requirements that allow Farmer Mac to settle positive and negative positions, including accrued interest, held or placed with the same clearing agent.

As of September 30, 2022, Farmer Mac expects to reclassify $12.9 million after-tax from accumulated other comprehensive income to earnings over the next twelve months related to cash flow hedges. 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, 2022. During the three and nine months ended September 30, 2022 and 2021, 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 tables summarize the net income/(expense) recognized in the consolidated statements of operations related to derivatives for the three and nine months ended September 30, 2022 and 2021:

Table 4.2

	For the Three Months Ended September 30, 2022					
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives					
	Net Interest Income				Non-Interest Income	
	Interest Income Investments and Cash Equivalents	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	$ 21,581	$ 74,695	$ 97,514	$ (125,937)	$ 772	$ 68,625
Income/(expense) related to interest settlements on fair value hedging relationships:						
Recognized on derivatives	957	(350)	1,837	(22,679)	—	(20,235)
Recognized on hedged items	4,617	35,763	14,857	(35,263)	—	19,974
Premium/discount amortization recognized on hedged items	(59)	—	—	(549)	—	(608)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 5,515	$ 35,413	$ 16,694	$ (58,491)	$ —	$ (869)
Gains/(losses) on fair value hedging relationships:						
Recognized on derivatives	$ 49,373	$ 201,864	$ 105,683	$ (197,884)	$ —	$ 159,036
Recognized on hedged items	(52,308)	(204,765)	(100,490)	197,902	—	(159,661)
Gains/(losses) on fair value hedging relationships	$ (2,935)	$ (2,901)	$ 5,193	$ 18	$ —	$ (625)
Expense related to interest settlements on cash flow hedging relationships:						
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ —	$ 1,072	$ —	$ 1,072
Recognized on hedged items	—	—	—	(4,046)	—	(4,046)
Discount amortization recognized on hedged items	—	—	—	(15)	—	(15)
Expense recognized on cash flow hedges	$ —	$ —	$ —	$ (2,989)	$ —	$ (2,989)
Gains on financial derivatives not designated in hedging relationships:						
Gains on interest rate swaps	$ —	$ —	$ —	$ —	$ 5,054	$ 5,054
Interest expense on interest rate swaps	—	—	—	—	(2,613)	(2,613)
Treasury futures	—	—	—	—	(1,669)	(1,669)
Gains on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ —	$ 772	$ 772

	For the Three Months Ended September 30, 2021					
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives					
	Net Interest Income				Non-Interest Income	
	Interest Income Investments and Cash Equivalents	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	$ 4,121	$ 42,339	$ 61,923	$ (49,467)	$ (888)	$ 58,028
Income/(expense) related to interest settlements on fair value hedging relationships:						
Recognized on derivatives	(141)	(20,925)	(6,911)	10,886	—	(17,091)
Recognized on hedged items	274	28,937	11,817	(12,940)	—	28,088
Discount amortization recognized on hedged items	—	—	—	(287)	—	(287)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 133	$ 8,012	$ 4,906	$ (2,341)	$ —	$ 10,710
Gains/(losses) on fair value hedging relationships:						
Recognized on derivatives	$ 1,827	$ 33,972	$ 19,652	$ (9,727)	$ —	$ 45,724
Recognized on hedged items	(1,737)	(31,523)	(19,184)	8,712	—	(43,732)
Gains/(losses) on fair value hedging relationships	$ 90	$ 2,449	$ 468	$ (1,015)	$ —	$ 1,992
Expense related to interest settlements on cash flow hedging relationships:						
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ —	$ (1,932)	$ —	$ (1,932)
Recognized on hedged items	—	—	—	(685)	—	(685)
Discount amortization recognized on hedged items	—	—	—	(11)	—	(11)
Expense recognized on cash flow hedges	$ —	$ —	$ —	$ (2,628)	$ —	$ (2,628)
Losses on financial derivatives not designated in hedging relationships:						
Losses on interest rate swaps	$ —	$ —	$ —	$ —	$ (634)	$ (634)
Interest expense on interest rate swaps	—	—	—	—	168	168
Treasury futures	—	—	—	—	(422)	(422)
Losses on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ —	$ (888)	$ (888)

	For the Nine Months Ended September 30, 2022					
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives					
	Net Interest Income				Non-Interest Income	
	Interest Income Investments and Cash Equivalents	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	$ 38,497	$ 169,231	$ 241,393	$ (251,816)	$ 21,551	$ 218,856
Income/(expense) related to interest settlements on fair value hedging relationships:						
Recognized on derivatives	(1,536)	(37,687)	(9,568)	(3,831)	—	(52,622)
Recognized on hedged items	10,433	102,123	41,146	(76,862)	—	76,840
Premium/discount amortization recognized on hedged items	(816)	—	—	(1,478)	—	(2,294)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 8,081	$ 64,436	$ 31,578	$ (82,171)	$ —	$ 21,924
Gains/(losses) on fair value hedging relationships:						
Recognized on derivatives	$ 106,935	$ 563,897	$ 347,034	$ (523,432)	$ —	$ 494,434
Recognized on hedged items	(108,002)	(564,679)	(337,443)	521,643	—	(488,481)
Gains/(losses) on fair value hedging relationships	$ (1,067)	$ (782)	$ 9,591	$ (1,789)	$ —	$ 5,953
Expense related to interest settlements on cash flow hedging relationships:						
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ —	$ (2,094)	$ —	$ (2,094)
Recognized on hedged items	—	—	—	(6,654)	—	(6,654)
Discount amortization recognized on hedged items	—	—	—	(43)	—	(43)
Expense recognized on cash flow hedges	$ —	$ —	$ —	$ (8,791)	$ —	$ (8,791)
Gains on financial derivatives not designated in hedging relationships:						
Gains on interest rate swaps	$ —	$ —	$ —	$ —	$ 10,954	$ 10,954
Interest expense on interest rate swaps	—	—	—	—	(5,496)	(5,496)
Treasury futures	—	—	—	—	16,093	16,093
Gains on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ —	$ 21,551	$ 21,551

	For the Nine Months Ended September 30, 2021					
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives					
	Net Interest Income				Non-Interest Income	
	Interest Income Investments and Cash Equivalents	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:	$ 14,107	$ 127,976	$ 181,631	$ (155,599)	$ 2,581	$ 170,696
Income/(expense) related to interest settlements on fair value hedging relationships:						
Recognized on derivatives	(177)	(63,966)	(20,185)	30,178	—	(54,150)
Recognized on hedged items	341	90,278	34,940	(36,889)	—	88,670
Discount amortization recognized on hedged items	—	—	—	(765)	—	(765)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 164	$ 26,312	$ 14,755	$ (7,476)	$ —	$ 33,755
Gains/(losses) on fair value hedging relationships:						
Recognized on derivatives	$ 1,651	$ 154,188	$ 100,276	$ (41,838)	$ —	$ 214,277
Recognized on hedged items	(1,549)	(150,445)	(99,955)	39,104	—	(212,845)
Gains/(losses) on fair value hedging relationships	$ 102	$ 3,743	$ 321	$ (2,734)	$ —	$ 1,432
Expense related to interest settlements on cash flow hedging relationships:						
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ —	$ (5,454)	$ —	$ (5,454)
Recognized on hedged items	—	—	—	(1,983)	—	(1,983)
Discount amortization recognized on hedged items	—	—	—	(25)	—	(25)
Expense recognized on cash flow hedges	$ —	$ —	$ —	$ (7,462)	$ —	$ (7,462)
(Losses)/gains on financial derivatives not designated in hedge relationships:						
Losses on interest rate swaps	$ —	$ —	$ —	$ —	$ (662)	$ (662)
Interest expense on interest rate swaps	—	—	—	—	3,489	3,489
Treasury futures	—	—	—	—	(246)	(246)
Losses on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ —	$ 2,581	$ 2,581

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, 2022 and December 31, 2021:

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, 2022	December 31, 2021	September 30, 2022	December 31, 2021
	(in thousands)			
Investment securities, Available-for-Sale, at fair value	$ 773,071	$ 458,653	$ (109,220)	$ (1,218)
Farmer Mac Guaranteed Securities, Available-for-Sale, at fair value	4,624,461	4,276,002	(358,160)	206,520
Loans held for investment, at amortized cost	1,610,641	1,668,142	(323,559)	13,832
Notes Payable(1)	(10,700,388)	(7,081,150)	566,406	39,992

(1) Carrying amount represents amortized cost.

The following tables present the fair value of financial assets and liabilities, based on the terms of Farmer Mac's master netting arrangements as of September 30, 2022 and December 31, 2021:

Table 4.4

	September 30, 2022						
				Gross Amounts Not Offset in the Consolidated Balance Sheet			
	Gross Amount Recognized	Gross Amounts offset in the Consolidated Balance Sheet	Net Amount Presented in the Consolidated Balance Sheet(1)	Netting Adjustments	Financial instruments pledged	Cash Collateral (2)	Net Amount
	(in thousands)						
Assets:							
Uncleared derivatives	$ 29,347	$ —	$ 29,347	$ (28,811)	$ —	$ —	$ 536
Cleared derivatives	30,840	(11,228)	19,612	—	205,874	—	225,486
Total	$ 60,187	$ (11,228)	$ 48,959	$ (28,811)	$ 205,874	$ —	$ 226,022
Liabilities:							
Uncleared derivatives	$ (158,031)	$ —	$ (158,031)	$ 28,811	$ —	$ 126,630	$ (2,590)
Cleared derivatives	(11,228)	11,228	—	—	—	—	—
Total	$ (169,259)	$ 11,228	$ (158,031)	$ 28,811	$ —	$ 126,630	$ (2,590)

(1) Amounts presented may not agree to the consolidated balance sheet related to counterparties not subject to master netting agreements.
(2) Cash collateral excludes $24.0 million of collateral posted related to counterparties not subject to master netting agreements.

	December 31, 2021						
				Gross Amounts Not Offset in the Consolidated Balance Sheet			
	Gross Amount Recognized	Gross Amounts offset in the Consolidated Balance Sheet	Net Amount Presented in the Consolidated Balance Sheet(1)	Netting Adjustments	Financial instruments pledged	Cash Collateral (2)	Net Amount
	(in thousands)						
Assets:							
Uncleared derivatives	$ 6,081	$ —	$ 6,081	$ (6,008)	$ —	$ —	$ 73
Cleared derivatives	1,374	(1,374)	—	—	—	—	—
Total	$ 7,455	$ (1,374)	$ 6,081	$ (6,008)	$ —	$ —	$ 73
Liabilities:							
Uncleared derivatives	$ (23,368)	$ —	$ (23,368)	$ 6,008	$ —	$ 14,339	$ (3,021)
Cleared derivatives	(10,993)	1,374	(9,619)	—	177,878	—	168,259
Total	$ (34,361)	$ 1,374	$ (32,987)	$ 6,008	$ 177,878	$ 14,339	$ 165,238

(1) Amounts presented may not agree to the consolidated balance sheet related to counterparties not subject to master netting agreements.
(2) Cash collateral excludes $2.3 million of collateral posted related to counterparties not subject to master netting agreements.

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, 2022 or December 31, 2021, 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, 2022 and December 31, 2021, 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 $22.4 billion notional amount of interest rate swaps outstanding as of September 30, 2022, $18.5 billion were cleared through the swap clearinghouse, the Chicago Mercantile Exchange ("CME"). Of Farmer Mac's $17.5 billion notional amount of interest rate swaps outstanding as of December 31, 2021, $14.9 billion were cleared through the CME. During the first nine months of 2022 and throughout 2021, Farmer Mac continued the use of non-cleared basis swaps to prepare for the transition away from the use of LIBOR as a reference rate.

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. As of both September 30, 2022 and December 31, 2021, Farmer Mac had no loans held for sale, respectively. Farmer Mac did not record any lower of cost or fair value adjustments during the three and nine months ended September 30, 2022 and 2021.

The following table includes loans held for investment and displays the composition of the loan balances as of September 30, 2022 and December 31, 2021:

Table 5.1

	As of September 30, 2022			As of December 31, 2021		
	Unsecuritized	In Consolidated Trusts	Total	Unsecuritized	In Consolidated Trusts	Total
	(in thousands)					
Agricultural Finance mortgage loans	$ 6,254,755	$ 1,120,403	$ 7,375,158	$ 5,898,370	$ 948,623	$ 6,846,993
Rural Infrastructure Finance loans	2,885,693	—	2,885,693	2,389,136	—	2,389,136
Total unpaid principal balance[(1)]	9,140,448	1,120,403	10,260,851	8,287,506	948,623	9,236,129
Unamortized premiums, discounts, fair value hedge basis adjustment, and other cost basis adjustments	(322,665)	—	(322,665)	26,590	—	26,590
Total loans	8,817,783	1,120,403	9,938,186	8,314,096	948,623	9,262,719
Allowance for losses	(12,599)	(403)	(13,002)	(13,477)	(564)	(14,041)
Total loans, net of allowance	$ 8,805,184	$ 1,120,000	$ 9,925,184	$ 8,300,619	$ 948,059	$ 9,248,678

(1) 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, 2022 and December 31, 2021:

Table 5.2

	September 30, 2022	December 31, 2021
	Allowance for Losses	Allowance for Losses
	(in thousands)	
Loans:		
Agricultural Finance mortgage loans	$ 4,196	$ 3,442
Rural Infrastructure Finance loans	8,806	10,599
Total	$ 13,002	$ 14,041

The following is a summary of the changes in the allowance for losses for the three and nine month period ended September 30, 2022 and 2021:

Table 5.3

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	Allowance for Losses	Allowance for Losses	Allowance for Losses	Allowance for Losses
	(in thousands)			
Agricultural Finance mortgage loans				
Beginning Balance	$ 4,015	$ 3,092	$ 3,442	$ 3,745
Provision for/(release of) losses	181	414	838	(239)
Charge-offs	—	—	(84)	—
Ending Balance[1]	$ 4,196	$ 3,506	$ 4,196	$ 3,506
Rural Infrastructure Finance loans				
Beginning Balance	$ 8,388	$ 10,908	$ 10,599	$ 10,087
Provision for/(release of) losses	418	(120)	(1,793)	701
Charge-offs	—	—	—	—
Ending Balance[2]	$ 8,806	$ 10,788	$ 8,806	$ 10,788

(1) As of September 30, 2022 and 2021, allowance for losses for Agricultural Finance mortgage loans includes $1.7 million and $1.8 million allowance for collateral dependent assets secured by agricultural real estate, respectively.

(2) As of both September 30, 2022 and 2021, allowance for losses for Rural Infrastructure Finance loans includes no allowance for collateral dependent assets.

The net provision to the allowance for Rural Infrastructure Finance loan losses of $0.4 million recorded during third quarter 2022 was primarily attributable to net new loan volume. The $0.2 million net provision to the allowance for the Agricultural Finance mortgage loan portfolio during third quarter 2022 was primarily attributable to the deterioration of a single agricultural storage and processing loan.

The $1.8 million net release from the allowance for the Rural Infrastructure Finance portfolio for the nine months ended September 30, 2022 was primarily attributable to improvements in forecasts of future economic conditions, and a first quarter risk rating upgrade on a single loan. The risk rating upgrade on that loan reflected that borrower's successful securitization of its large payable that arose during the arctic freeze that struck Texas in February 2021. The $0.8 million net provision to the allowance for the Agricultural Finance mortgage loan portfolio for the nine months ended September 30, 2022 was primarily attributable to a risk rating downgrade on a single agricultural storage and processing loan.

The release from the allowance for Rural Infrastructure Finance loan losses of $0.1 million recorded during third quarter 2021 was primarily attributable to the impact of improving economic factor forecasts. The $0.4 million provision to the allowance for the Agricultural Finance mortgage loan portfolio during third quarter 2021 was primarily attributable to a decline in the economic factor forecast for commodity prices in Farmer Mac's fruit and nuts portfolio.

The net provision recorded to the allowance for the nine months ended September 30, 2021 was primarily a result of the impact of the Texas Arctic Freeze on the Rural Infrastructure Finance portfolio, partially offset by improving economic factor forecasts. The net release from the allowance for the nine months ended September 30, 2021 was primarily a result of improving agricultural commodity prices on the Agricultural Finance mortgage loan portfolio in the first half of the year, partially offset by declines in the third quarter.

The following table presents the unpaid principal balances by delinquency status of Farmer Mac's loans and non-performing assets as of September 30, 2022 and December 31, 2021:

Table 5.4

	As of September 30, 2022						
	Accruing						
	Current	30-59 Days	60-89 Days	90 Days and Greater[2]	Total Past Due	Nonaccrual loans[3][4]	Total Loans
	(in thousands)						
Loans[1]:							
Agricultural Finance mortgage loans	$ 7,277,623	$ 4,665	$ 2,424	$ 6,239	$ 13,328	$ 84,207	$ 7,375,158
Rural Infrastructure Finance loans	2,885,693	—	—	—	—	—	2,885,693
Total	$10,163,316	$ 4,665	$ 2,424	$ 6,239	$ 13,328	$ 84,207	$10,260,851

(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 $33.9 million of nonaccrual loans for which there was no associated allowance. During the three and nine months ended September 30, 2022, Farmer Mac received $1.3 million and $5.0 million in interest on nonaccrual loans, respectively.

	As of December 31, 2021						
	Accruing						
	Current	30-59 Days	60-89 Days	90 Days and Greater[(2)]	Total Past Due	Nonaccrual loans[(3)(4)]	Total Loans
	(in thousands)						
Loans[(1)]:							
Agricultural Finance mortgage loans	$ 6,715,070	$ 4,548	$ 568	$ —	$ 5,116	$ 126,807	$ 6,846,993
Rural Infrastructure Finance loans	2,389,136	—	—	—	—	—	2,389,136
Total	$ 9,104,206	$ 4,548	$ 568	$ —	$ 5,116	$ 126,807	$ 9,236,129

(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 $31.0 million of nonaccrual loans for which there was no associated allowance. During the year ended December 31, 2021, Farmer Mac received $5.0 million in interest on nonaccrual loans.

Credit Quality Indicators

The following tables present credit quality indicators related to Agricultural Finance mortgage loans and Rural Infrastructure Finance loans held as of September 30, 2022 and December 31, 2021, by year of origination:

Table 5.5

	As of September 30, 2022							
	Year of Origination:							
	2022	2021	2020	2019	2018	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance mortgage loans [1]:								
Internally Assigned Risk Rating:								
Acceptable	$1,086,064	$2,023,008	$1,424,641	$ 484,523	$ 290,051	$1,009,207	$ 593,106	$ 6,910,600
Special mention[2]	64,238	89,605	33,431	32,408	35,735	26,774	7,630	289,821
Substandard[3]	1,887	10,087	22,423	24,028	18,146	78,282	19,884	174,737
Total	$1,152,189	$2,122,700	$1,480,495	$ 540,959	$ 343,932	$1,114,263	$ 620,620	$ 7,375,158
For the Three Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ (84)	$ —	$ (84)
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ —	$ —	$ (84)	$ —	$ (84)

(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, 2022							
	Year of Origination:							
	2022	2021	2020	2019	2018	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance loans[1]:								
Internally Assigned Risk Rating:								
Acceptable	$ 584,273	$ 230,232	$ 634,474	$ 748,381	$ 7,932	$ 653,100	$ 27,301	$ 2,885,693
Special mention[2]	—	—	—	—	—	—	—	—
Substandard[3]	—	—	—	—	—	—	—	—
Total	$ 584,273	$ 230,232	$ 634,474	$ 748,381	$ 7,932	$ 653,100	$ 27,301	$ 2,885,693
For the Three Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure 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.

	As of December 31, 2021							
	Year of Origination:							
	2021	2020	2019	2018	2017	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance mortgage loans [1]:								
Internally Assigned Risk Rating:								
Acceptable	$2,138,060	$1,541,509	$ 540,139	$ 324,917	$ 303,852	$1,004,709	$ 545,370	$6,398,556
Special mention[2]	84,795	50,057	51,200	48,078	9,132	14,646	4,771	262,679
Substandard[3]	1,654	4,997	26,237	27,109	38,703	75,780	11,278	185,758
Total	$2,224,509	$1,596,563	$ 617,576	$ 400,104	$ 351,687	$1,095,135	$ 561,419	$6,846,993
For the Three Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance 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.

	As of December 31, 2021							
	Year of Origination:							
	2021	2020	2019	2018	2017	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance loans[1]:								
Internally Assigned Risk Rating:								
Acceptable	$ 242,570	$ 612,366	$ 774,941	$ 8,100	$ 86,878	$ 628,903	$ 12,578	$ 2,366,336
Special mention[2]	—	—	—	—	—	—	—	—
Substandard[3]	—	22,800	—	—	—	—	—	22,800
Total	$ 242,570	$ 635,166	$ 774,941	$ 8,100	$ 86,878	$ 628,903	$ 12,578	$ 2,389,136
For the Three Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure 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.

6. GUARANTEES AND COMMITMENTS

The following table presents the maximum principal amount of potential undiscounted future payments that Farmer Mac could be required to make under all off-balance sheet Farmer Mac Guaranteed Securities as of September 30, 2022 and December 31, 2021, 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, 2022	As of December 31, 2021
	(in thousands)	
Agricultural Finance		
Farmer Mac Guaranteed Securities	$ 509,114	$ 578,358
Rural Infrastructure Finance		
Farmer Mac Guaranteed Securities	2,755	2,755
Total off-balance sheet Farmer Mac Guaranteed Securities	$ 511,869	$ 581,113

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. During third quarter 2022, Farmer Mac executed a structured securitization transaction, whereby it sold and securitized agricultural mortgage loans resulting in $297.7 million of Farmer Mac Guaranteed Securities. In this transaction, Farmer Mac transferred selected loans to a depositor which then deposited the loans into a trust, at which time the loans became assets of the trust. Farmer Mac does not consider these trust fund assets to be available to satisfy the claims of the creditors of Farmer Mac and/or the depositor. 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, 2022	September 30, 2021
	(in thousands)	
Proceeds from new securitizations	$ 305,410	$ 84,131
Guarantee fees received	1,464	848

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, 2022	As of December 31, 2021
	(dollars in thousands)	
Guarantee and commitment obligation	$ 6,607	$ 7,355
Weighted average remaining maturity:		
Farmer Mac Guaranteed Securities	21.4 years	21.7 years
AgVantage Securities	2.2 years	3.0 years

Long-Term Standby Purchase Commitments

Farmer Mac has recorded a liability for its obligation to stand ready under the commitment in the guarantee and commitment obligation on the consolidated balance sheets. 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, 2022	As of December 31, 2021
	(dollars in thousands)	
Guarantee and commitment obligation[1]	$ 39,118	$ 36,571
Maximum principal amount	3,378,654	3,191,061
Weighted-average remaining maturity	15.4 years	15.5 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, 2022 and December 31, 2021:

Table 6.5

	September 30, 2022	December 31, 2021
	Reserve for Losses	Reserve for Losses
	(in thousands)	
Agricultural Finance:		
LTSPCs and Farmer Mac Guaranteed Securities	$ 743	$ 1,068
Rural Infrastructure Finance		
LTSPCs	767	882
Total	$ 1,510	$ 1,950

The following is a summary of the changes in the reserve for losses for the three and nine month periods ended September 30, 2022 and 2021:

Table 6.6

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	Reserve for Losses	Reserve for Losses	Reserve for Losses	Reserve for Losses
	(in thousands)			
Agricultural Finance mortgage loans				
Beginning Balance	$ 882	$ 1,194	$ 1,068	$ 2,097
Release of losses	(139)	(91)	(325)	(994)
Charge-offs	—	—	—	—
Ending Balance	$ 743	$ 1,103	$ 743	$ 1,103
Rural Infrastructure Finance loans				
Beginning Balance	$ 795	$ 917	$ 882	$ 1,180
Release of losses	(28)	(20)	(115)	(283)
Charge-offs	—	—	—	—
Ending Balance	$ 767	$ 897	$ 767	$ 897

The release from the reserve for losses in both the Agricultural Finance and Rural Infrastructure Finance LTSPC and Farmer Mac Guaranteed portfolios recorded during the three and nine months ended September 30, 2022 was primarily due to improvements in risk ratings in those portfolios.

The release from the reserve for losses in the Rural Infrastructure Finance LTSPC portfolio recorded during the three and nine months ended September 30, 2021 was primarily due to improving economic factor forecasts and ratings upgrades. The release in the Agricultural Finance LTSPC portfolio was primarily due to ratings upgrades and updated loss-given-default assumptions.

The following table presents the unpaid principal balances by delinquency status of Agricultural Finance and Rural Infrastructure loans underlying LTSPCs and Farmer Mac Guaranteed Securities as of September 30, 2022 and December 31, 2021:

Table 6.7

	As of September 30, 2022					
	Current	30-59 Days	60-89 Days	90 Days and Greater[1]	Total Past Due	Total Loans
	(in thousands)					
Agricultural Finance:						
LTSPCs and Farmer Mac Guaranteed Securities	$ 3,127,963	$ 2,586	$ 626	$ 2,217	$ 5,429	$ 3,133,392
Rural Infrastructure:						
LTSPCs	$ 541,228	$ —	$ —	$ —	$ —	$ 541,228

(1) Includes loans underlying off-balance sheet Agricultural Finance 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.

	As of December 31, 2021					
	Current	30-59 Days	60-89 Days	90 Days and Greater[1]	Total Past Due	Total Loans
	(in thousands)					
Agricultural Finance:						
LTSPCs and Farmer Mac Guaranteed Securities	$ 2,953,091	$ 8,068	$ —	$ 3,597	$ 11,665	$ 2,964,756
Rural Infrastructure:						
LTSPCs	$ 556,837	$ —	$ —	$ —	$ —	$ 556,837

(1) Includes loans underlying off-balance sheet Agricultural Finance 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.

Credit Quality Indicators

The following tables present credit quality indicators related to Agricultural Finance and Rural Infrastructure loans underlying LTSPCs and Farmer Mac Guaranteed Securities as of September 30, 2022 and December 31, 2021, by year of origination:

Table 6.8

	As of September 30, 2022							
	Year of Origination:							
	2022	2021	2020	2019	2018	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance LTSPCs and Farmer Mac Guaranteed Securities:								
Internally Assigned Risk Rating:								
Acceptable	$ 162,839	$ 489,795	$ 529,605	$ 247,696	$ 199,766	$1,148,637	$ 267,764	$3,046,102
Special mention[1]	—	1,329	826	—	1,209	42,659	9,128	55,151
Substandard[2]	—	—	176	—	3,596	24,947	3,420	32,139
Total	$ 162,839	$ 491,124	$ 530,607	$ 247,696	$ 204,571	$1,216,243	$ 280,312	$3,133,392
For the Three Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance 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, 2022							
	Year of Origination:							
	2022	2021	2020	2019	2018	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance LTSPCs:								
Internally Assigned Risk Rating:								
Acceptable	$ —	$ —	$ —	$ —	$ —	$ 482,427	$ 58,801	$ 541,228
Special mention[1]	—	—	—	—	—	—	—	—
Substandard[2]	—	—	—	—	—	—	—	—
Total	$ —	$ —	$ —	$ —	$ —	$ 482,427	$ 58,801	$ 541,228
For the Three Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2022:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure 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 December 31, 2021							
	Year of Origination:							
	2021	2020	2019	2018	2017	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance LTSPCs and Farmer Mac Guaranteed Securities:								
Internally Assigned Risk Rating:								
Acceptable	$ 376,027	$ 537,521	$ 244,365	$ 188,452	$ 235,865	$1,013,937	$ 252,039	$2,848,206
Special mention[1]	—	5,270	—	6,808	3,154	38,042	2,354	55,628
Substandard[2]	—	1,307	724	5,038	12,793	37,326	3,734	60,922
Total	$ 376,027	$ 544,098	$ 245,089	$ 200,298	$ 251,812	$1,089,305	$ 258,127	$2,964,756
For the Three Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance 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 December 31, 2021							
	Year of Origination:							
	2021	2020	2019	2018	2017	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance LTSPCs:								
Internally Assigned Risk Rating:								
Acceptable	$ —	$ —	$ —	$ —	$ —	$ 499,594	$ 57,243	$ 556,837
Special mention[1]	—	—	—	—	—	—	—	—
Substandard[2]	—	—	—	—	—	—	—	—
Total	$ —	$ —	$ —	$ —	$ —	$ 499,594	$ 57,243	$ 556,837
For the Three Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure net charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
For the Nine Months Ended September 30, 2021:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	—	—	—	—
Current period Rural Infrastructure 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.

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 25.0 years.

The following tables set forth information related to Farmer Mac's borrowings as of September 30, 2022 and December 31, 2021:

Table 7.1

	September 30, 2022			
	Outstanding as of September 30		Average Outstanding During the Quarter	
	Amount	Weighted-Average Rate	Amount	Weighted-Average Rate
	(dollars in thousands)			
Due within one year:				
Discount notes	$ 867,588	2.07 %	$ 1,525,565	0.67 %
Medium-term notes	1,905,291	2.78 %	1,166,242	1.39 %
Current portion of medium-term notes	4,618,265	1.31 %		
Total due within one year	$ 7,391,144	1.78 %		
Due after one year:				
Medium-term notes due in:				
Two years	$ 4,057,284	1.40 %		
Three years	3,184,014	1.59 %		
Four years	2,534,177	1.28 %		
Five years	2,705,529	2.10 %		
Thereafter	4,194,915	2.34 %		
Total due after one year	$ 16,675,919	1.77 %		
Total principal net of discounts	$ 24,067,063	1.77 %		
Hedging adjustments	(566,406)			
Total	$ 23,500,657			

	December 31, 2021			
	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	$ 2,167,979	0.05 %	$ 1,822,714	0.08 %
Medium-term notes	837,580	0.09 %	1,956,870	0.12 %
Current portion of medium-term notes	3,981,240	0.75 %		
Total due within one year	$ 6,986,799	0.45 %		
Due after one year:				
Medium-term notes due in:				
Two years	$ 4,179,985	0.81 %		
Three years	2,554,906	0.87 %		
Four years	2,119,805	0.85 %		
Five years	2,810,894	1.07 %		
Thereafter	4,106,144	1.69 %		
Total due after one year	$ 15,771,734	1.10 %		
Total principal net of discounts	$ 22,758,533	0.90 %		
Hedging adjustments	(44,762)			
Total	$ 22,713,771			

The maximum amount of Farmer Mac's discount notes outstanding at any month end during the nine months ended September 30, 2022 and 2021 was $2.2 billion and $2.4 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 2022 as of September 30, 2022:

Table 7.2

Debt Callable in 2022 as of September 30, 2022, by Maturity		
	Amount	Weighted-Average Rate
	(dollars in thousands)	
Maturity:		
2023	$ 228,884	0.43 %
2024	247,407	0.60 %
2025	236,680	0.93 %
2026	748,989	1.20 %
Thereafter	1,101,493	1.85 %
Total	$ 2,563,453	1.33 %

The following schedule summarizes the earliest interest rate reset date, or debt maturities, of total borrowings outstanding as of September 30, 2022, 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:		
2022	$ 4,168,080	2.55 %
2023	5,824,466	1.52 %
2024	3,627,164	1.35 %
2025	2,742,230	1.44 %
2026	2,749,594	1.18 %
Thereafter	4,955,529	2.24 %
Total principal net of discounts	$ 24,067,063	1.77 %

During the nine months ended September 30, 2022 and 2021, Farmer Mac called $26.0 million and $1.7 billion of callable medium-term notes, respectively.

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 to fulfill 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, 2022, Farmer Mac had not used this borrowing authority.

Gains on Repurchase of Outstanding Debt

No outstanding debt repurchases were made in the three and nine months ended September 30, 2022. During the three and nine months ended September 30, 2021, Farmer Mac repurchased $23.0 million of outstanding debt at a gain of $14,000.

8. EQUITY

Common Stock

During each of the first, second, and third quarters 2022, Farmer Mac paid a quarterly dividend of $0.95 per share on all classes of its common stock. For each quarter in 2021, Farmer Mac paid a quarterly dividend of $0.88 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. In March 2021, Farmer Mac's board of directors reinstated the share repurchase program on its previous terms (with a remaining authorization of up to $9.8 million in stock repurchases) and extended the expiration date of the program to March 2023. Farmer Mac did not repurchase any shares of its Class C non-voting common stock during the first nine months of 2022. As of September 30, 2022, 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.

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, 2022 and December 31, 2021, 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, 2022, Farmer Mac's minimum capital requirement was $781.7 million and its core capital level was $1.3 billion, which was $513.9 million above the minimum capital requirement as of that date. As of December 31, 2021, Farmer Mac's minimum capital requirement was $713.1 million and its core capital level was $1.2 billion, which was $496.8 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, 2022 and December 31, 2021, 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, 2022

	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	$ —	$ —	$ 19,243	$ 19,243
Floating rate Government/GSE guaranteed mortgage-backed securities	—	2,360,528	—	2,360,528
Fixed rate GSE guaranteed mortgage-backed securities	—	841,704	—	841,704
Fixed rate U.S. Treasuries	1,180,404	—	—	1,180,404
Total Available-for-sale Investment Securities	1,180,404	3,202,232	19,243	4,401,879
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	6,965,761	6,965,761
Farmer Mac Guaranteed Securities	—	—	8,241	8,241
Total Farmer Mac Guaranteed Securities	—	—	6,974,002	6,974,002
USDA Securities:				
Trading	—	—	1,851	1,851
Total USDA Securities	—	—	1,851	1,851
Financial derivatives	536	49,432	—	49,968
Guarantee Asset	—	—	4,692	4,692
Total Assets at fair value	$ 1,180,940	$ 3,251,664	$ 6,999,788	$ 11,432,392
Liabilities:				
Financial derivatives	$ 18	$ 184,536	$ —	$ 184,554
Total Liabilities at fair value	$ 18	$ 184,536	$ —	$ 184,554

[1] Level 3 assets represent 26% of total assets and 60% of financial instruments measured at fair value.

Assets and Liabilities Measured at Fair Value as of December 31, 2021

	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	$ —	$ —	$ 19,254	$ 19,254
Floating rate Government/GSE guaranteed mortgage-backed securities	—	2,178,831	—	2,178,831
Fixed rate GSE guaranteed mortgage-backed securities	—	458,837	—	458,837
Fixed rate U.S. Treasuries	1,179,469	—	—	1,179,469
Total Available-for-sale Investment Securities	1,179,469	2,637,668	19,254	3,836,391
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	6,316,145	6,316,145
Farmer Mac Guaranteed Securities	—	—	12,414	12,414
Total Farmer Mac Guaranteed Securities	—	—	6,328,559	6,328,559
USDA Securities:				
Trading	—	—	4,401	4,401
Total USDA Securities	—	—	4,401	4,401
Financial derivatives	73	6,008	—	6,081
Guarantee Asset	—	—	6,237	6,237
Total Assets at fair value	$ 1,179,542	$ 2,643,676	$ 6,358,451	$ 10,181,669
Liabilities:				
Financial derivatives	$ —	$ 35,554	$ —	$ 35,554
Total Liabilities at fair value	$ —	$ 35,554	$ —	$ 35,554
Non-recurring:				
Assets				
Mortgage Servicing Rights	$ —	$ —	$ 2,681	$ 2,681
Total non-recurring assets at fair value	$ —	$ —	$ 2,681	$ 2,681

(1) Level 3 assets represent 25% of total assets and 62% of financial instruments measured at fair value.

There were no material assets or liabilities measured at fair value on a non-recurring basis as of September 30, 2022 or December 31, 2021.

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 nine months ended September 30, 2022 and 2021, there were no transfers within the fair value hierarchy.

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, 2022 and 2021.

Table 9.2

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended September 30, 2022

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized 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	$ 19,061	$ —	$ —	$ —	$ 11	$ —	$ 171	$ 19,243
Total available-for-sale	19,061	—	—	—	11	—	171	19,243
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	6,440,396	1,370,000	—	(627,131)	(11)	(204,450)	(13,043)	6,965,761
Farmer Mac Guaranteed Securities	9,816	—	—	(468)	—	—	(1,107)	8,241
Total available-for-sale	6,450,212	1,370,000	—	(627,599)	(11)	(204,450)	(14,150)	6,974,002
USDA Securities:								
Trading	2,275	—	—	(383)	—	(41)	—	1,851
Total USDA Securities	2,275	—	—	(383)	—	(41)	—	1,851
Guarantee and commitment obligations:								
Guarantee Asset	5,636	—	—	(229)	—	(715)	—	4,692
Total Guarantee and commitment obligations	5,636	—	—	(229)	—	(715)	—	4,692
Total Assets at fair value	$ 6,477,184	$1,370,000	$ —	$ (628,211)	$ —	$ (205,206)	$ (13,979)	$ 6,999,788

Level 3 Assets and Liabilities Measured at Fair Value for the Three Months Ended September 30, 2021

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized (losses)/gains included in Income	Unrealized gains 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	$ 19,248	$ —	$ —	$ —	$ 6	$ —	$ 246	$ 19,500
Total available-for-sale	19,248	—	—	—	6	—	246	19,500
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	6,877,405	—	—	(708,882)	(70)	(31,462)	1,768	6,138,759
Total available-for-sale	6,877,405	—	—	(708,882)	(70)	(31,462)	1,768	6,138,759
USDA Securities:								
Trading	5,050	—	—	(294)	—	37	—	4,793
Total USDA Securities	5,050	—	—	(294)	—	37	—	4,793
Total Assets at fair value	$ 6,901,703	$ —	$ —	$ (709,176)	$ (64)	$ (31,425)	$ 2,014	$ 6,163,052

Level 3 Assets and Liabilities Measured at Fair Value for the Nine Months Ended September 30, 2022

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized losses included in Income	Unrealized 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	$ 19,254	$ —	$ —	$ —	$ 14	$ —	$ (25)	$ 19,243
Total available-for-sale	19,254	—	—	—	14	—	(25)	19,243
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	6,316,145	2,722,750	—	(1,435,758)	(345)	(564,242)	(72,789)	6,965,761
Farmer Mac Guaranteed Securities	12,414	—	—	(1,205)	—	—	(2,968)	8,241
Total available-for-sale	6,328,559	2,722,750	—	(1,436,963)	(345)	(564,242)	(75,757)	6,974,002
USDA Securities:								
Trading	4,401	—	—	(2,475)	—	(75)	—	1,851
Total USDA Securities	4,401	—	—	(2,475)	—	(75)	—	1,851
Guarantee and commitment obligations:								
Guarantee Asset	6,237	—	—	(672)	—	(873)	—	4,692
Total Guarantee and commitment obligations	6,237	—	—	(672)	—	(873)	—	4,692
Total Assets at fair value	$ 6,358,451	$2,722,750	$ —	$(1,440,110)	$ (331)	$ (565,190)	$ (75,782)	$ 6,999,788

Level 3 Assets and Liabilities Measured at Fair Value for the Nine Months Ended September 30, 2021

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized losses included in Income	Unrealized gains 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	$ 19,171	$ —	$ —	$ —	$ (16)	$ —	$ 345	$ 19,500
Total available-for-sale	19,171	—	—	—	(16)	—	345	19,500
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	6,947,701	578,115	—	(1,263,117)	19	(150,265)	26,306	6,138,759
Total available-for-sale	6,947,701	578,115	—	(1,263,117)	19	(150,265)	26,306	6,138,759
USDA Securities:								
Trading	6,695	—	—	(1,864)	—	(38)	—	4,793
Total USDA Securities	6,695	—	—	(1,864)	—	(38)	—	4,793
Total Assets at fair value	$ 6,973,567	$ 578,115	$ —	$ (1,264,981)	$ 3	$ (150,303)	$ 26,651	$ 6,163,052

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, 2022 and December 31, 2021:

Table 9.3

	As of September 30, 2022			
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	$ 19,243	Indicative bids	Range of broker quotes	97.9% - 97.9% (97.9%)
Farmer Mac Guaranteed Securities:				
AgVantage	$ 6,965,761	Discounted cash flow	Discount rate	4.6% - 5.1% (4.9%)
Farmer Mac Guaranteed Securities	$ 8,241	Discounted cash flow	Discount rate	4.9% - 5.4% (5.1%)
			CPR	8%
USDA Securities	$ 1,851	Discounted cash flow	Discount rate	5.6% - 6.4% (5.8%)
			CPR	19% - 24% (23%)
Guarantee Asset	$ 4,692	Discounted cash flow	Discount rate	5.4% - 5.9% (5.7%)
			CPR	8%

	As of December 31, 2021			
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	$ 19,254	Indicative bids	Range of broker quotes	98.0% - 98.0% (98.0%)
Farmer Mac Guaranteed Securities:				
AgVantage	$ 6,316,145	Discounted cash flow	Discount rate	0.9% - 2.1% (1.7%)
Farmer Mac Guaranteed Securities	$ 12,414	Discounted cash flow	Discount rate	2.3% - 2.8% (2.6%)
			CPR	8%
USDA Securities	$ 4,401	Discounted cash flow	Discount rate	1.4% - 3.1% (2.8%)
			CPR	25% - 42% (39%)
Guarantee Asset	$ 6,237	Discounted cash flow	Discount rate	5.4% - 5.8% (5.6%)
			CPR	7% - 12% (8%)

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 do not 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, 2022 and December 31, 2021:

Table 9.4

	As of September 30, 2022		As of December 31, 2021	
	Fair Value	Carrying Amount	Fair Value	Carrying Amount
	(in thousands)			
Financial assets:				
Cash and cash equivalents	$ 868,234	$ 868,234	$ 908,785	$ 908,785
Investment securities	4,447,259	4,449,017	3,884,202	3,882,590
Farmer Mac Guaranteed Securities	8,239,615	8,302,041	8,360,293	8,361,798
USDA Securities	2,032,548	2,430,489	2,536,473	2,440,732
Loans	8,965,973	9,925,184	9,814,642	9,248,678
Financial derivatives	49,968	49,968	6,081	6,081
Guarantee and commitment fees receivable	49,328	46,347	42,533	45,538
Financial liabilities:				
Notes payable	22,578,047	23,500,657	22,716,791	22,713,771
Debt securities of consolidated trusts held by third parties	977,411	1,090,539	1,005,306	981,379
Financial derivatives	184,554	184,554	35,554	35,554
Guarantee and commitment obligations	48,705	45,726	40,920	43,926

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 table presents the alignment of the Farmer Mac's seven segments:

Agricultural Finance		**Rural Infrastructure Finance**		**Treasury**		
Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Funding	Investments	Corporate

The financial information presented below reflects the accounts of Farmer Mac and its subsidiaries on a consolidated basis. Accordingly, the core earnings for Farmer Mac's segments would differ from any stand-alone financial statements of Farmer Mac's subsidiaries. These differences would be due to various factors, including the exclusion of unrealized gains and losses related to fair value changes of trading assets and financial derivatives, as well as the allocation of certain expenses such as operating expenses, dividends and interest expense related to the issuance of capital and the issuance of indebtedness managed at the corporate level.

The following tables present core earnings for Farmer Mac's segments and a reconciliation to consolidated net income for the three and nine months ended September 30, 2022 and 2021. The amounts for the three and nine months ended September 30, 2021 have been revised to conform to the transcurrent year's segment alignment.

Table 10.1

Core Earnings by Business Segment

For the Three Months Ended September 30, 2022

	Agricultural Finance		Rural Infrastructure		Treasury				
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Funding	Investments	Corporate	Reconciling Adjustments	Consolidated Net Income
					(in thousands)				
Net interest income	$ 34,173	$ 7,600	$ 4,253	$ 705	$ 23,913	$ (2,791)	$ —	$ —	$ 67,853
Less: reconciling adjustments[(1)(2)(3)]	(830)	—	(33)	—	(1,349)	—	—	2,212	—
Net effective spread	33,343	7,600	4,220	705	22,564	(2,791)	—	2,212	—
Guarantee and commitment fees	3,833	46	309	13	—	—	—	(1,558)	2,643
Other income/(expense)[(3)]	469	4	—	—	—	—	—	909	1,382
Total revenues	37,645	7,650	4,529	718	22,564	(2,791)	—	1,563	71,878
Release of/(provision for) losses	93	(333)	(414)	26	—	11	—	—	(617)
Release of reserve for losses	139	—	28	—	—	—	—	—	167
Operating expenses	—	—	—	—	—	—	(19,379)	—	(19,379)
Total non-interest expense	139	—	28	—	—	—	(19,379)	—	(19,212)
Core earnings before income taxes	37,877	7,317	4,143	744	22,564	(2,780)	(19,379)	1,563 (4)	52,049
Income tax (expense)/benefit	(7,953)	(1,536)	(869)	(156)	(4,739)	584	4,366	(328)	(10,631)
Core earnings before preferred stock dividends	29,924	5,781	3,274	588	17,825	(2,196)	(15,013)	1,235 (4)	41,418
Preferred stock dividends	—	—	—	—	—	—	(6,791)	—	(6,791)
Segment core earnings/(losses)	$ 29,924	$ 5,781	$ 3,274	$ 588	$ 17,825	$ (2,196)	$ (21,804)	$ 1,235 (4)	$ 34,627
Total Assets	$14,113,686	$1,558,139	$5,779,300	$ 186,832	$ —	$ 4,608,868	$ 194,763	$ —	26,441,588
Total on- and off-balance sheet program assets at principal balance	$17,199,347	$1,634,786	$6,296,263	$ 196,242	$ —	$ —	$ —	$ —	25,326,638

(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 "Gains/(losses) on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) 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, 2021

	Agricultural Finance		Rural Infrastructure		Treasury				
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Funding	Investments	Corporate	Reconciling Adjustments	Consolidated Net Income
	(in thousands)								
Net interest income	$ 30,063	$ 7,162	$ 2,101	$ 237	$ 19,195	$ 158	$ —	$ —	$ 58,916
Less: reconciling adjustments(1)(2)(3)	(1,148)	—	(34)	—	(1,809)	—	—	2,991	—
Net effective spread	28,915	7,162	2,067	237	17,386	158	—	2,991	—
Guarantee and commitment fees	3,988	9	325	—	—	—	—	(1,167)	3,155
Other income/ (expense)(3)	557	—	2	—	—	—	128	(703)	(16)
Total revenues	33,460	7,171	2,394	237	17,386	158	128	1,121	62,055
Release of/(provision for) losses	(261)	(191)	45	35	—	6	—	—	(366)
Provision for reserve for losses	91	—	20	—	—	—	—	—	111
Operating expenses	—	—	—	—	—	—	(17,107)	—	(17,107)
Total non-interest expense	91	—	20	—	—	—	(17,107)	—	(16,996)
Core earnings before income taxes	33,290	6,980	2,459	272	17,386	164	(16,979)	1,121 (4)	44,693
Income tax (expense)/ benefit	(6,991)	(1,466)	(516)	(57)	(3,651)	(35)	3,564	(236)	(9,388)
Core earnings before preferred stock dividends	26,299	5,514	1,943	215	13,735	129	(13,415)	885 (4)	35,305
Preferred stock dividends	—	—	—	—	—	—	(6,774)	—	(6,774)
Loss on retirement of preferred stock	—	—	—	—	—	—	—	—	—
Segment core earnings/(losses)	$ 26,299	$ 5,514	$ 1,943	$ 215	$ 13,735	$ 129	$ (20,189)	$ 885 (4)	$ 28,531
Total Assets	$12,845,105	$1,347,182	$5,511,782	$ 88,738	$ —	$ 4,919,431	$ 32,130	$ —	$ 24,744,368
Total on- and off-balance sheet program assets at principal balance	$15,565,589	$1,379,816	$6,080,691	$ 92,695	$ —	$ —	$ —	$ —	$ 23,118,791

(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 "Gains/(losses) on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) 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, 2022

	Agricultural Finance		Rural Infrastructure		Treasury				
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Funding	Investments	Corporate	Reconciling Adjustments	Consolidated Net Income
					(in thousands)				
Net interest income	$ 99,197	$ 21,738	$ 11,218	$ 1,548	$ 67,673	$ (4,069)	$ —	$ —	$ 197,305
Less: reconciling adjustments[1][2][3]	(2,910)	—	(106)	—	(9,863)	—	—	12,879	—
Net effective spread	96,287	21,738	11,112	1,548	57,810	(4,069)	—	12,879	—
Guarantee and commitment fees	12,387	108	929	43	—	—	—	(3,916)	9,551
Other income/(expense)[3]	1,030	261	—	—	—	—	3	21,987	23,281
Total revenues	109,704	22,107	12,041	1,591	57,810	(4,069)	3	30,950	230,137
Release of/(provision for) losses	440	(1,498)	1,927	(184)	—	14	—	—	699
Release of reserve for losses	324	—	116	—	—	—	—	—	440
Operating expenses	—	—	—	—	—	—	(60,815)	—	(60,815)
Total non-interest expense	324	—	116	—	—	—	(60,815)	—	(60,375)
Core earnings before income taxes	110,468	20,609	14,084	1,407	57,810	(4,055)	(60,812)	30,950 [4]	170,461
Income tax (expense)/benefit	(23,196)	(4,327)	(2,956)	(295)	(12,141)	852	12,827	(6,499)	(35,735)
Core earnings before preferred stock dividends	87,272	16,282	11,128	1,112	45,669	(3,203)	(47,985)	24,451 [4]	134,726
Preferred stock dividends	—	—	—	—	—	—	(20,374)	—	(20,374)
Segment core earnings/(losses)	$ 87,272	$ 16,282	$ 11,128	$ 1,112	$ 45,669	$ (3,203)	$ (68,359)	$ 24,451 [4]	$ 114,352
Total Assets	$14,113,686	$1,558,139	$5,779,300	$ 186,832	$ —	$ 4,608,868	$ 194,763	$ —	26,441,588
Total on- and off-balance sheet program assets at principal balance	$17,199,347	$1,634,786	$6,296,263	$ 196,242	$ —	$ —	$ —	$ —	25,326,638

(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 "Gains/(losses) on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) 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, 2021

	Agricultural Finance		Rural Infrastructure		Treasury					
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Funding	Investments	Corporate	Reconciling Adjustments		Consolidated Net Income
					(in thousands)					
Net interest income	$ 88,186	$ 20,760	$ 5,648	$ 863	$ 52,260	$ 398	$ —	$ —		$ 168,115
Less: reconciling adjustments(1)(2)(3)	(3,647)	—	(102)	—	1,969	—	—	1,780		—
Net effective spread	84,539	20,760	5,546	863	54,229	398	—	1,780		—
Guarantee and commitment fees	11,906	18	958	14	—	—	—	(3,714)		9,182
Other income/(expense)(3)	1,560	—	4	—	—	—	(125)	2,957		4,396
Total revenues	98,005	20,778	6,508	877	54,229	398	(125)	1,023		181,693
Release of/(provision for) losses	322	(157)	(490)	(177)	—	(16)	—	—		(518)
Provision for reserve for losses	996	—	281	—	—	—	—	—		1,277
Operating expenses	—	—	—	—	—	—	(52,866)	—		(52,866)
Total non-interest expense	996	—	281	—	—	—	(52,866)	—		(51,589)
Core earnings before income taxes	99,323	20,621	6,299	700	54,229	382	(52,991)	1,023	(4)	129,586
Income tax (expense)/ benefit	(20,857)	(4,330)	(1,322)	(147)	(11,388)	(80)	10,989	(215)		(27,350)
Core earnings before preferred stock dividends	78,466	16,291	4,977	553	42,841	302	(42,002)	808	(4)	102,236
Preferred stock dividends	—	—	—	—	—	—	(17,885)	—		(17,885)
Segment core earnings/(losses)	$ 78,466	$ 16,291	$ 4,977	$ 553	$ 42,841	$ 302	$ (59,887)	$ 808	(4)	$ 84,351
Total Assets	$12,845,105	$1,347,182	$5,511,782	$ 88,738	$ —	$ 4,919,431	$ 32,130	$ —		$ 24,744,368
Total on- and off-balance sheet program assets at principal balance	$15,565,589	$1,379,816	$6,080,691	$ 92,695	$ —	$ —	$ —	$ —		$ 23,118,791

(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 "Gains/(losses) on financial derivatives" on the consolidated financial statements, to determine the effective funding cost for each operating segment.

(4) 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.

11. REVISION OF PRIOR PERIOD FINANCIAL STATEMENTS

Farmer Mac revised certain prior period financial statements to correct an error related to the recognition of accrual of interest for derivative contracts cleared through the swap clearinghouse, the CME. Farmer Mac determined that the error was immaterial to these previous consolidated financial statements, taken as a whole. Although Farmer Mac has concluded these errors are immaterial to the previously issued consolidated financial statements, Farmer Mac has corrected this error by revising the accompanying consolidated financial statements. Farmer Mac will also correct previously reported financial information for such immaterial errors in future filings, as applicable. The following tables summarize the effect of the revision on each financial statement line item:

Revised Consolidated Balance Sheet

	As of December 31, 2021		
	As previously Reported	Adjustments	As Revised
		(in thousands)	
Assets			
Financial Derivatives, at fair value	$ 19,139	$ (13,058)	$ 6,081
Interest Receivable	177,355	(11,751)	165,604
Deferred Tax Asset, net	15,558	311	15,869
Prepaid Expenses and Other Assets	45,318	16	45,334
Total Assets	$ 25,145,491	$ (24,482)	$ 25,121,009
Liabilities			
Notes Payable	$ 22,716,156	$ (2,385)	$ 22,713,771
Financial Derivatives, at fair value	34,248	1,306	35,554
Accrued Interest Payable	83,992	(24,989)	59,003
Accounts Payable and Accrued Expenses	79,427	(7,701)	71,726
Total Liabilities	$ 23,941,078	$ (33,769)	$ 23,907,309
Equity			
Retained Earnings	$ 579,270	$ 9,287	$ 588,557
Total Equity	1,204,413	9,287	1,213,700
Total Liabilities and Equity	$ 25,145,491	$ (24,482)	$ 25,121,009

Revised Consolidated Statements of Operations

	Three Months Ended September 30, 2021			Nine Months Ended September 30, 2021		
	As previously Reported	Adjustments	As Revised	As previously Reported	Adjustments	As Revised
			(in thousands)			
Interest Income:						
Farmer Mac Guaranteed Securities and USDA Securities	$ 38,428	$ 3,911	$ 42,339	$ 123,246	$ 4,730	$ 127,976
Total interest income	104,472	3,911	108,383	318,984	4,730	323,714
Net interest income	55,005	3,911	58,916	163,385	4,730	168,115
Non-interest income/(expense):						
(Losses)/gains on financial derivatives	(2,347)	1,459	(888)	(1,120)	3,701	2,581
Non-Interest Income	1,791	1,459	3,250	11,154	3,701	14,855
Income before income taxes	39,323	5,370	44,693	121,155	8,431	129,586
Income tax expense	8,260	1,128	9,388	25,579	1,771	27,350
Net Income	31,063	4,242	35,305	95,576	6,660	102,236
Net Income attributable to common stockholders	24,289	4,242	28,531	77,691	6,660	84,351

Revised Consolidated Statements of Comprehensive Income

	Three Months Ended September 30, 2021			Nine Months Ended September 30, 2021		
	As previously Reported	Adjustments	As Revised	As previously Reported	Adjustments	As Revised
			(in thousands)			
Net Income	$ 31,063	$ 4,242	$ 35,305	$ 95,576	$ 6,660	$ 102,236
Comprehensive Income	32,536	4,242	36,778	127,705	6,660	134,365

Revised Consolidated Statements of Equity

	Retained Earnings			Total Equity		
	As previously Reported	Adjustments	As Revised	As previously Reported	Adjustments	As Revised
			(in thousands)			
Balance as of December 31, 2021	$ 579,270	$ 9,287	$ 588,557	$ 1,204,413	$ 9,287	$ 1,213,700
Net Income	47,837	3,616	51,453	47,837	3,616	51,453
Balance as of March 31, 2022	$ 610,087	$ 12,903	$ 622,990	$ 1,192,844	$ 12,903	$ 1,205,747
Net Income	45,896	(4,041)	41,855	45,896	(4,041)	41,855
Balance as of June 30, 2022	$ 638,935	$ 8,862	$ 647,797	$ 1,212,348	$ 8,862	$ 1,221,210

	Retained Earnings			Total Equity		
	As previously Reported	Adjustments	As Revised	As previously Reported	Adjustments	As Revised
			(in thousands)			
Balance as of December 31, 2020	$ 509,560	$ 5,457	$ 515,017	$ 992,477	$ 5,457	$ 997,934
Net Income	33,227	4,842	38,069	33,227	4,842	38,069
Balance as of March 31, 2021	$ 528,068	$ 10,299	$ 538,367	$ 1,077,492	$ 10,299	$ 1,087,791
Net Income	31,286	(2,423)	28,863	31,286	(2,423)	28,863
Balance as of June 30, 2021	$ 544,038	$ 7,876	$ 551,914	$ 1,180,215	$ 7,876	$ 1,188,091
Net Income	31,063	4,242	35,305	31,063	4,242	35,305
Balance as of September 30, 2021	$ 558,853	$ 12,118	$ 570,971	$ 1,197,298	$ 12,118	$ 1,209,416

Revised Consolidated Statements of Cash Flows

	For the Nine Months Ended September 30, 2021		
	As previously Reported	Adjustments	As Revised
		(in thousands)	
Cash flows from operating activities:			
Net income/(loss)	$ 95,576	$ 6,660	$ 102,236
Adjustments to reconcile net income to net cash provided by operating activities:			
Net change in fair value of trading securities, hedged assets, and financial derivatives	226,895	(11,126)	215,769
Deferred income taxes	(1,302)	844	(458)
Net change in:			
Interest receivable	40,509	(1,479)	39,030
Other assets	2,431	3,163	5,594
Accrued interest payable	(9,475)	(2,939)	(12,414)
Other liabilities	(8,346)	4,877	(3,469)
Net cash provided by operating activities	433,219	—	433,219

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

The objective of this section of the report is to provide a discussion and analysis, from management's perspective, of the material information necessary to assess Farmer Mac's financial condition and results of operations for the quarter ended September 30, 2022. 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, 2021, as filed with the SEC on February 28, 2022 (the "2021 Annual Report").

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 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 effect 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;
- assessment of economic and market trends;
- 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 2021 Annual Report, as well as uncertainties about:

- the availability to Farmer Mac of debt and equity financing and, if available, the reasonableness of rates and terms;
- legislative or regulatory developments that could affect Farmer Mac, its sources of business, or agricultural or rural infrastructure 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, supply chain disruptions, increases in input costs, labor availability, volatility in commodity prices, and the effects of the conflict between Russia and Ukraine;
- 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 effects of the Federal Reserve's efforts to achieve monetary policy normalization and slow inflation;
- other factors that could hinder agricultural mortgage lending or borrower repayment capacity, including the effects of severe weather and drought, climate change, or fluctuations in agricultural real estate values; and
- the duration, mitigation efforts, spread, severity, and social and economic disruption of the COVID-19 pandemic and its effects on the business operations of agricultural and rural borrowers, the capital markets, and Farmer Mac's business operations.

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

Farmer Mac is a mission-focused, purpose-driven company determined to improve the economic opportunity in rural America by increasing the availability and affordability of credit. As the nation's secondary market for agricultural and rural infrastructure loans, we provide a broad array of financial solutions to lenders that support flexible low-cost financing to farmers, ranchers, agribusinesses, renewable energy projects, rural utilities, and other related rural businesses and enterprises. Farmer Mac also serves as a critical investment tool for entities such as states, counties, municipalities, pension funds, banks, public trust funds, and credit unions. Farmer Mac offers those entities a variety of investment opportunities that may diversify their investment portfolios and provide the opportunity to earn a competitive return on their investment dollars.

Farmer Mac’s performance during third quarter 2022, described in more detail below, reflects the success of our continued focus on pursuing new channels and innovative ways to further our mission to help build a strong and vital rural America. Despite ongoing macroeconomic concerns and potential headwinds such as deteriorating macroeconomic conditions, inflation, rising interest rates, the COVID-19 pandemic, and war in Ukraine, Farmer Mac delivered solid financial results. These financial results in the first three quarters of 2022 reflected a variety of factors, including: (1) the resilience of the farm economy, as producers have benefited from healthy farm incomes and liquidity from relatively high commodity prices resulting from heightened demand, with revenues rising faster than the costs of inputs; (2) an increase in Farmer Mac's outstanding business volume at higher spreads while credit quality improved; (3) Farmer Mac's disciplined approach to interest rate risk management that helps to protect earnings from the effects of interest rate volatility and are accretive to Farmer Mac during periods of rising interest rates; and (4) Farmer Mac's effective funding strategies that resulted in advantageous funding during the first nine months of 2022, which have also benefited from the rising interest rate environment in the current period. The discussion below of Farmer Mac's financial information includes "non-GAAP measures," which are measures of financial performance not presented in accordance with generally accepted accounting principles in the United States ("GAAP"). For more information about the non-GAAP measures Farmer Mac uses, see "Management's Discussion and Analysis of Financial Condition and Results of Operations —Use of Non-GAAP Measures."

Net Income and Core Earnings

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 differ from net income attributable to common stockholders and earnings per common share, respectively, by excluding the effects of fair value fluctuations and specified infrequent or unusual transactions.

Table 1

	For the Three Months Ended		
	September 30, 2022	June 30, 2022	September 30, 2021
		(in thousands)	
Net income attributable to common stockholders	$ 34,627	$ 35,063	$ 28,531
Core earnings	33,392	30,748	27,646

The $0.4 million sequential decrease in net income attributable to common stockholders was due to a $2.4 million after-tax decrease in the fair value of undesignated financial derivatives and a $1.6 million after-tax increase in the provision for credit losses. These factors were partially offset by a $3.1 million after-tax increase in net interest income and a $0.5 million after-tax decrease in operating expenses.

The $6.1 million year-over-year increase in net income attributable to common stockholders was due to a $7.1 million after-tax increase in net interest income and a $1.3 million after-tax increase in the fair value of undesignated financial derivatives. These factors were partially offset by a $1.8 million after-tax increase in operating expenses and a $0.4 million decrease in guarantee fees.

The $2.6 million sequential increase in core earnings was due to a $3.7 million after-tax increase in net effective spread and a $0.5 million after-tax decrease in operating expenses. These factors were partially offset by an increase in our provision for credit losses of $1.6 million after tax.

The $5.7 million year-over-year increase in core earnings was due to a $7.7 million after-tax increase in net effective spread, partially offset by a $1.8 million after-tax increase in operating expenses.

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

Net Interest Income and Net Effective Spread

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, 2022	June 30, 2022	September 30, 2021
		(in thousands)	
Net interest income	$ 67,853	$ 63,914	$ 58,916
Net interest yield %	1.04 %	1.00 %	1.00 %
Net effective spread	$ 65,641	$ 60,946	$ 55,925
Net effective spread %	1.03 %	0.99 %	0.99 %

The $3.9 million sequential increase in net interest income was primarily due to a $2.9 million decrease in funding costs, due to increasing yields on interest-earning assets on our short-term investments that are funded by non-interest bearing excess equity, and an increase of $1.9 million from net new business volume. These factors were partially offset by a $1.2 million decrease in the fair value of designated financial derivatives. In percentage terms, the sequential 0.04% increase was primarily attributable to a decrease of 0.04% in funding costs and an increase of 0.01% in net new business volume, partially offset by a decrease of 0.02% in net fair value changes from financial derivatives designated in hedge accounting relationships (designated financial derivatives).

The $8.9 million year-over-year increase in net interest income was primarily attributable to a $6.0 million increase from net new business volume and a $5.5 million decrease in funding costs, due to increasing yields on interest-earning assets on our short-term investments that are funded by non-interest bearing excess equity. These factors were partially offset by a $2.6 million decrease in the fair value of designated financial derivatives. In percentage terms, the year-over-year 0.04% increase was primarily attributable to a decrease of 0.07% in funding costs, partially offset by a decrease of 0.04% in net fair value changes from financial derivatives designated in hedge accounting relationships (designated financial derivatives).

The $4.7 million sequential increase in net effective spread in dollars was primarily due to an increase of $3.2 million from net new business volume and a $2.2 million decrease in non-GAAP funding costs, due to increasing yields on interest-earning assets on our short-term investments that are funded by non-interest bearing excess equity. These factors were partially offset by a $0.4 million decrease in cash-basis interest income. In percentage terms, the sequential increase of 0.04% was primarily attributable to a decrease of 0.04% in non-GAAP funding costs and an increase of 0.02% in net new business volume.

The $9.7 million year-over-year increase in net effective spread in dollars was primarily due to a $7.1 million increase from net new business volume, a $2.3 million decrease in non-GAAP funding costs, due to increasing yields on interest-earning assets on our short-term investments that are funded by non-interest bearing excess equity, and a $0.6 million increase in cash-basis interest income. In percentage terms, the year-over-year increase of 0.04% was primarily attributable to an decrease of 0.01% in non-GAAP funding costs and an increase of 0.02% in net new business volume.

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 10 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 $25.3 billion as of September 30, 2022, a net increase of $0.8 billion from June 30, 2022 after taking into account all new business, maturities, sales, and paydowns on existing assets. The net increase was primarily attributable to net increases of $0.2 billion in the Rural Infrastructure Finance line of business and $0.7 billion in the Agricultural Finance line of business.

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, 2022	December 31, 2021
	(in thousands)	
Core capital	$ 1,295,612	$ 1,209,847
Capital in excess of minimum capital level required	513,896	496,771

The increase in capital in excess of the minimum capital level required was primarily due to an increase in retained earnings.

Credit Quality

The following table presents Agricultural Finance on-balance sheet loan purchase and off-balance sheet LTSPCs and Farmer Mac Guaranteed Securities substandard assets, in dollars and as a percentage of the respective portfolio as of September 30, 2022, June 30, 2022, and December 31, 2021:

Table 4

	On-Balance Sheet		Off-Balance Sheet	
	Substandard Assets	% of Portfolio	Substandard Assets	% of Portfolio
	(dollars in thousands)			
September 30, 2022	$ 174,737	2.4 %	$ 32,139	1.0 %
June 30, 2022	169,310	2.4 %	44,362	1.5 %
December 31, 2021	185,758	2.7 %	60,922	2.1 %
Increase/(decrease) from prior quarter-ending	$ 5,427	— %	$ (12,223)	(0.5)%
Increase/(decrease) from prior year-ending	$ (11,021)	(0.3)%	$ (28,783)	(1.1)%

The increase of $5.4 million in on-balance sheet substandard assets during third quarter was primarily driven by credit downgrades in permanent plantings, part-time farms, and agricultural storage and processing, partially offset by credit upgrades during the quarter in crops and livestock. The on-balance sheet Agricultural Finance mortgage loan portfolio grew by $176.3 million, but the net credit downgrades had an offsetting impact, which caused the percentage of substandard assets to remain constant. The $12.2 million decrease in substandard assets in our off-balance sheet LTSPC and Farmer Mac Guaranteed Securities portfolios during third quarter was primarily due to credit upgrades in permanent plantings, crops, livestock and part-time farms.

There were no substandard assets in the Rural Infrastructure Finance portfolio as of September 30, 2022 and one loan classified as substandard in that portfolio as of December 31, 2021.

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 90-day delinquencies for on-balance sheet Agricultural Finance mortgage loan purchases and off-balance sheet LTSPCs and Farmer Mac Guaranteed Securities, in dollars and as a percentage of the respective balance sheet category as of September 30, 2022, June 30, 2022, and December 31, 2021:

Table 5

	On-Balance Sheet		Off-Balance Sheet	
	90-Day Delinquencies	% of Portfolio	90-Day Delinquencies	% of Portfolio
	(dollars in thousands)			
September 30, 2022	$ 42,015	0.57 %	$ 2,217	0.07 %
June 30, 2022	18,751	0.26 %	1,872	0.06 %
December 31, 2021	43,710	0.64 %	3,597	0.12 %
Increase/(decrease) from prior quarter-ending	$ 23,264	0.31 %	$ 345	0.01 %
Increase/(decrease) from prior year-ending	$ (1,695)	(0.07)%	$ (1,380)	(0.05)%

On-balance sheet Agricultural Finance loans 90 or more days delinquent increased in all commodity groups, except agricultural storage and processing. Off-balance sheet Agricultural Finance LTSPCs and Farmer Mac Guaranteed Securities 90 days or more delinquent increased in permanent plantings and part-time farms. The top ten borrower exposures over 90 days delinquent in either the on- or off-balance sheet Agricultural Finance portfolio represented over half of the aggregate 90-day delinquencies as of September 30, 2022.

As of both September 30, 2022 and December 31, 2021, there were no 90-day delinquencies in Farmer Mac's portfolio of Rural Infrastructure Finance loan purchases and loans underlying LTSPCs.

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

COVID-19 Pandemic

Farmer Mac has operated successfully throughout the COVID-19 pandemic with most employees still working remotely. Farmer Mac has adopted a "Presence with Purpose" work arrangement, a flexible, hybrid approach under which employees spend a combination of time working remotely or in one of Farmer Mac's offices depending on the nature of the work and the related business needs. Farmer Mac has maintained uninterrupted access to the debt capital markets and remains a source of capital and liquidity to rural borrowers facing economic or market volatility stemming from the ongoing pandemic. For more information on the effects of the COVID-19 pandemic on Farmer Mac's business, see "Business—Human Capital" in the 2021 Annual Report and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Outlook" in the 2021 Annual Report and in this report.

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

The main difference between core earnings and core earnings per share (non-GAAP measures) and net income attributable to common stockholders and earnings per common share (GAAP measures) is that those non-GAAP measures exclude 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. Another difference is that these two non-GAAP measures exclude 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 and core earnings per share any losses on retirement of preferred stock. 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. As further explained below, net effective spread differs from net interest income and net interest yield by excluding certain items from net interest income and net interest yield and including certain other items that net interest income and net interest yield do not contain.

Farmer Mac 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 accounting 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 differs from net interest income and net interest yield because it includes the accrual of income and expense related to the contractual amounts due on financial derivatives that are not designated in hedge accounting relationships ("undesignated financial derivatives"). Farmer Mac uses interest rate swaps to manage its interest rate risk exposure by synthetically modifying the interest rate reset or maturity characteristics of certain assets and liabilities. The accrual of the contractual amounts due on interest rate swaps designated in hedge accounting relationships is included as an adjustment to the yield or cost of the hedged item and is included in net interest income. For undesignated financial derivatives, Farmer Mac records the income or expense related to the accrual of the contractual amounts due in "Gains/(losses) on financial derivatives" 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 10 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, 2022	September 30, 2021
	(in thousands, except per share amounts)	
Net income attributable to common stockholders	$ 34,627	$ 28,531
Less reconciling items:		
Gains/(losses) on undesignated financial derivatives due to fair value changes (see Table 13)	6,441	(405)
(Losses)/gains on hedging activities due to fair value changes	(624)	1,818
Unrealized (losses)/gains on trading securities	(757)	36
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	24	23
Net effects of terminations or net settlements on financial derivatives	(3,522)	(351)
Income tax effect related to reconciling items	(327)	(236)
Sub-total	1,235	885
Core earnings	$ 33,392	$ 27,646
Composition of Core Earnings:		
Revenues:		
Net effective spread[(1)]	$ 65,641	$ 55,925
Guarantee and commitment fees[(2)]	4,201	4,322
Other[(3)]	473	687
Total revenues	70,315	60,934
Credit related expense (GAAP):		
Provision for losses	450	255
Total credit related expense	450	255
Operating expenses (GAAP):		
Compensation and employee benefits	11,648	10,027
General and administrative	6,919	6,330
Regulatory fees	812	750
Total operating expenses	19,379	17,107
Net earnings	50,486	43,572
Income tax expense[(4)]	10,303	9,152
Preferred stock dividends (GAAP)	6,791	6,774
Core earnings	$ 33,392	$ 27,646
Core earnings per share:		
Basic	$ 3.09	$ 2.57
Diluted	$ 3.07	$ 2.55
Weighted-average shares:		
Basic	10,799	10,766
Diluted	10,874	10,842

(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 10 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, 2022	September 30, 2021
	(in thousands, except per share amounts)	
Net income attributable to common stockholders	$ 114,352	$ 84,351
Less reconciling items:		
Gains/(losses) on undesignated financial derivatives due to fair value changes (see Table 13)	11,899	(189)
Gains on hedging activities due to fair value changes	5,491	269
Unrealized losses on trading securities	(948)	(39)
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	(18)	59
Net effects of terminations or net settlements on financial derivatives	14,526	923
Income tax effect related to reconciling items	(6,499)	(215)
Sub-total	24,451	808
Core earnings	$ 89,901	$ 83,543
Composition of Core Earnings:		
Revenues:		
Net effective spread(1)	$ 184,426	$ 166,335
Guarantee and commitment fees(2)	13,467	12,896
Other(3)	1,294	1,439
Total revenues	199,187	180,670
Credit related expense (GAAP):		
Release of losses	(1,139)	(759)
Total credit related expense	(1,139)	(759)
Operating expenses (GAAP):		
Compensation and employee benefits	36,661	31,601
General and administrative	21,717	19,015
Regulatory fees	2,437	2,250
Total operating expenses	60,815	52,866
Net earnings	139,511	128,563
Income tax expense(4)	29,236	27,135
Preferred stock dividends (GAAP)	20,374	17,885
Core earnings	$ 89,901	$ 83,543
Core earnings per share:		
Basic	$ 8.33	$ 7.77
Diluted	$ 8.27	$ 7.71
Weighted-average shares:		
Basic	10,787	10,756
Diluted	10,875	10,834

(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 10 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, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	(in thousands, except per share amounts)			
GAAP - Basic EPS	$ 3.21	$ 2.65	$ 10.61	$ 7.84
Less reconciling items:				
Gains/(losses) on undesignated financial derivatives due to fair value changes (see Table 13)	0.60	(0.04)	1.10	(0.02)
(Losses)/gains on hedging activities due to fair value changes	(0.06)	0.17	0.51	0.02
Unrealized losses on trading securities	(0.07)	—	(0.09)	—
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	—	—	—	0.01
Net effects of terminations or net settlements on financial derivatives	(0.32)	(0.03)	1.36	0.08
Income tax effect related to reconciling items	(0.03)	(0.02)	(0.60)	(0.02)
Sub-total	0.12	0.08	2.28	0.07
Core Earnings - Basic EPS	$ 3.09	$ 2.57	$ 8.33	$ 7.77
Shares used in per share calculation (GAAP and Core Earnings)	10,799	10,766	10,787	10,756

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, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	(in thousands, except per share amounts)			
GAAP - Diluted EPS	$ 3.18	$ 2.63	$ 10.51	$ 7.79
Less reconciling items:				
Gains/(losses) on undesignated financial derivatives due to fair value changes (see Table 13)	0.59	(0.04)	1.09	(0.02)
(Losses)/gains on hedging activities due to fair value changes	(0.06)	0.17	0.50	0.02
Unrealized losses on trading securities	(0.07)	—	(0.09)	—
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	—	—	—	0.01
Net effects of terminations or net settlements on financial derivatives	(0.32)	(0.03)	1.34	0.09
Income tax effect related to reconciling items	(0.03)	(0.02)	(0.60)	(0.02)
Sub-total	0.11	0.08	2.24	0.08
Core Earnings - Diluted EPS	$ 3.07	$ 2.55	$ 8.27	$ 7.71
Shares used in per share calculation (GAAP and Core Earnings)	10,874	10,842	10,875	10,834

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

1. Gains/(losses) on financial derivatives due to fair value changes are presented by two reconciling items in Table 6 above: (a) Gains/(losses) on undesignated financial derivatives due to fair value changes; and (b) (Losses)/gains on hedging activities due to fair value changes.

2. Unrealized (losses)/gains on trading securities. The unrealized (losses)/gains 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. The net effects of 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.

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, 2022 and 2021. 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 8

	For the Nine Months Ended					
	September 30, 2022			September 30, 2021		
	Average Balance	Income/ Expense	Average Rate	Average Balance	Income/ Expense	Average Rate
	(dollars in thousands)					
Interest-earning assets:						
Cash and investments	$ 5,114,900	$ 38,497	1.00 %	$ 4,752,815	$ 14,107	0.40 %
Loans, Farmer Mac Guaranteed Securities and USDA Securities(1)	19,543,316	386,968	2.64 %	17,614,644	279,513	2.12 %
Total interest-earning assets	24,658,216	425,465	2.30 %	22,367,459	293,620	1.75 %
Funding:						
Notes payable due within one year	2,741,738	21,630	1.05 %	3,991,539	3,235	0.11 %
Notes payable due after one year(2)	20,735,954	209,573	1.35 %	17,623,610	125,983	0.95 %
Total interest-bearing liabilities(3)	23,477,692	231,203	1.31 %	21,615,149	129,218	0.80 %
Net non-interest-bearing funding	1,180,524	—		752,310	—	
Total funding	24,658,216	231,203	1.25 %	22,367,459	129,218	0.77 %
Net interest income/yield prior to consolidation of certain trusts	24,658,216	194,262	1.05 %	22,367,459	164,402	0.98 %
Net effect of consolidated trusts(4)	852,223	3,043	0.48 %	1,083,729	3,713	0.46 %
Net interest income/yield	$ 25,510,439	$ 197,305	1.03 %	$ 23,451,188	$ 168,115	0.96 %

(1) Excludes interest income of $23.7 million and $30.1 million in first nine months of 2022 and 2021, 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 $20.6 million and $26.4 million in first nine months of 2022 and 2021, 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 $29.2 million year-over-year increase in net interest income was primarily due to a $12.3 million increase from net new business volume, a $12.0 million decrease in funding costs, due to increasing yields on interest-earning assets, and a $4.5 million increase in the fair value of derivatives designated in fair value hedge accounting relationships (designated financial derivatives). In percentage terms, the year-over-year 0.07% increase was primarily attributable to an increase of 0.06% related to the decrease in funding costs.

The following table sets forth information about changes in the components of Farmer Mac's net interest income prior to consolidation of certain trusts for the periods indicated. For each category, information is provided on changes attributable to changes in volume (change in volume multiplied by old rate), and changes in rate (change in rate multiplied by old volume), and then allocated based on the relative size of rate and volume changes from the prior period.

Table 9

	For the Nine Months Ended September 30, 2022 Compared to Same Period in 2021		
	Increase/(Decrease) Due to		
	Rate	Volume	Total
	(in thousands)		
Income from interest-earning assets:			
Cash and investments	$ 23,237	$ 1,153	$ 24,390
Loans, Farmer Mac Guaranteed Securities and USDA Securities	74,526	32,929	107,455
Total	97,763	34,082	131,845
Expense from other interest-bearing liabilities	90,004	11,981	101,985
Change in net interest income prior to consolidation of certain trusts(1)	$ 7,759	$ 22,101	$ 29,860

(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 10

	For the Three Months Ended				For the Nine Months Ended			
	September 30, 2022		September 30, 2021		September 30, 2022		September 30, 2021	
	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield
	(dollars in thousands)							
Net interest income/yield	$ 67,853	1.04 %	$ 58,916	1.00 %	$197,305	1.03 %	$168,115	0.96 %
Net effects of consolidated trusts	(843)	0.02 %	(1,167)	0.02 %	(3,044)	0.02 %	(3,713)	0.02 %
Expense related to undesignated financial derivatives	(2,613)	(0.05)%	117	— %	(5,633)	(0.03)%	3,154	0.02 %
Amortization of premiums/discounts on assets consolidated at fair value	(21)	— %	(15)	— %	28	— %	(36)	— %
Amortization of losses due to terminations or net settlements on financial derivatives	640	0.01 %	65	— %	1,723	0.01 %	246	— %
Fair value changes on fair value hedge relationships	625	0.01 %	(1,991)	(0.03)%	(5,953)	(0.03)%	(1,431)	(0.01)%
Net effective spread	$ 65,641	1.03 %	$ 55,925	0.99 %	$184,426	1.00 %	$166,335	0.99 %

The $18.1 million year-over-year increase in net effective spread in dollars was primarily due to a $15.8 million increase from net new business volume and a $2.1 million increase in net coupon yields related to the acquisition of loan servicing rights. In percentage terms, net effective spread increased by 0.01% as a result of increased spreads on net new business volume.

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, 2022 and 2021:

Table 11

	As of September 30, 2022			As of September 30, 2021		
	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	$ 13,092	$ 1,677	$ 14,769	$ 14,450	$ 2,111	$ 16,561
Provision for/(release of) losses	617	(167)	450	366	(111)	255
Charge-offs	—	—	—	—	—	—
Ending balance	$ 13,709	$ 1,510	$ 15,219	$ 14,816	$ 2,000	$ 16,816
For the Nine Months Ended						
Beginning balance	$ 14,492	$ 1,950	$ 16,442	$ 14,298	$ 3,277	$ 17,575
(Release of)/provision for losses	(699)	(440)	(1,139)	518	(1,277)	(759)
Charge-offs	(84)	—	(84)	—	—	—
Ending balance	$ 13,709	$ 1,510	$ 15,219	$ 14,816	$ 2,000	$ 16,816

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."

During the three months ended September 30, 2022, we recorded a $0.5 million provision to the allowance for losses primarily as a result of further deterioration of one agricultural storage and processing loan and net new loan volume. During the nine months ended September 30, 2022 we recorded a $1.1 million release from the allowance primarily as a result of updated credit loss model forecast assumptions and improvements in risk ratings, partially offset by a risk rating downgrade of the one agricultural storage and processing loan mentioned previously.

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, 2022 and 2021:

Table 12

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2022	September 30, 2021	$	%	September 30, 2022	September 30, 2021	$	%
	(dollars in thousands)							
Contractual guarantee fees	$ 3,494	$ 3,155	$ 339	11 %	$ 10,556	$ 9,182	$ 1,374	15 %
Guarantee obligation amortization	1,030	1,179	(149)	(13)%	4,821	5,406	(585)	(11)%
Guarantee asset fair value changes	(1,880)	(1,179)	(701)	59 %	(5,826)	(5,406)	(420)	8 %
Guarantee fee income	$ 2,644	$ 3,155	$ (511)	(16)%	$ 9,551	$ 9,182	$ 369	4 %

Guarantee and commitment fees decreased for the three months ended September 30, 2022 compared to 2021, which was due to a decrease in the fair value of retained beneficial interests in off-balance sheet structured securitizations during third quarter 2022. Guarantee and commitment fees increased for the nine months ended September 30, 2022 compared to 2021, which was due to increases in the average outstanding balance of LTSPCs during the period. As adjusted for the core earnings presentation, guarantee and commitment fees were $4.2 million and $13.5 million for the three and nine months ended September 30, 2022, respectively, compared to $4.3 million and $12.9 million for the three and nine months ended September 30, 2021, respectively.

In Farmer Mac's presentation of core earnings, guarantee and commitment fees include interest income and interest expense related to consolidated trusts owned by third parties to reflect management's view that the net interest income Farmer Mac earns is effectively a guarantee fee on those consolidated Farmer Mac Guaranteed Securities. Additionally, Farmer Mac has excluded guarantee asset fair value changes, because these fluctuations are not expected to have a cumulative net impact on Farmer Mac's financial condition or results of operations if Farmer Mac fulfills its guarantee obligation throughout the term of the guaranteed securities, as is expected.

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 Table 6 in "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."

Gains/(losses) on financial derivatives. The components of gains and losses on financial derivatives for the three and nine months ended September 30, 2022 and 2021 are summarized in the following table:

Table 13

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2022	September 30, 2021	$	%	September 30, 2022	September 30, 2021	$	%
	(dollars in thousands)							
Gains/(losses) due to fair value changes	$ 6,441	$ (405)	$ 6,846	(1,690)%	$ 11,899	$ (189)	$12,088	(6,396)%
Accrual of contractual payments	(2,613)	117	(2,730)	(2,333)%	(5,633)	3,154	(8,787)	(279)%
(Losses)/gains due to terminations or net settlements	(3,056)	(600)	(2,456)	409 %	15,285	(384)	15,669	(4,080)%
Gains/(losses) on financial derivatives	$ 772	$ (888)	$ 1,660	(187)%	$ 21,551	$ 2,581	$18,970	735 %

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 "Gains/(losses) due to terminations or net settlements" in the table above.

Other Income. The following table presents other income for the three and nine months ended September 30, 2022 and 2021:

Table 14

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2022	September 30, 2021	$	%	September 30, 2022	September 30, 2021	$	%
	(dollars in thousands)							
Late fees	$ 397	$ 266	$ 131	49 %	$ 1,042	$ 805	$ 237	29 %
Servicing fees	232	35	197	563 %	764	35	729	2,083 %
Mortgage servicing rights amortization	(80)	—	(80)	N/A	(347)	—	(347)	N/A
Other	102	281	(179)	(64)%	346	760	(414)	(54)%
Total other income	$ 651	$ 582	$ 69	12 %	$ 1,805	$ 1,600	$ 205	13 %

The increase in other income for the three and nine months ended September 30, 2022 compared to 2021 is primarily due to an increase in fees related to Farmer Mac's master and central servicing operations for off-balance sheet Farmer Mac Guaranteed Securities, partially offset by a decrease in loan rate modification fees.

Operating Expenses. The components of operating expenses for the three and nine months ended September 30, 2022 and 2021 are summarized in the following table:

Table 15

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2022	September 30, 2021	$	%	September 30, 2022	September 30, 2021	$	%
	(dollars in thousands)							
Compensation and employee benefits	$ 11,648	$ 10,027	$ 1,621	16 %	$ 36,661	$ 31,601	$ 5,060	16 %
General and administrative	6,919	6,330	589	9 %	21,717	19,015	2,702	14 %
Regulatory fees	812	750	62	8 %	2,437	2,250	187	8 %
Total Operating Expenses	$ 19,379	$ 17,107	$ 2,272	13 %	$ 60,815	$ 52,866	$ 7,949	15 %

Compensation and Employee Benefits. The increase in compensation and employee benefits expenses for 2022 compared to 2021 was due to increased headcount and increased stock compensation.

General and Administrative Expenses (G&A). The increase in G&A expenses for 2022 compared to 2021 was primarily due to increased spending on software licenses and information technology and other consultants to support growth and strategic initiatives. We entered into a transition services agreement in connection with the strategic acquisition of loan servicing rights in third quarter 2021. Under that agreement, we have agreed to pay $1.25 million to the seller of the servicing rights in installments through December 31, 2022 for continuing transition assistance.

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, 2022 and 2021:

Table 16

	For the Three Months Ended				For the Nine Months Ended			
			Change				Change	
	September 30, 2022	September 30, 2021	$	%	September 30, 2022	September 30, 2021	$	%
	(dollars in thousands)							
Income tax expense	$ 10,631	$ 9,388	$ 1,243	13 %	$ 35,735	$ 27,350	$ 8,385	31 %
Effective tax rate	20.5 %	21.0 %		(0.5)%	21.0 %	21.1 %		(0.1)%

Business Volume.

The following table sets forth the net growth or decrease in Farmer Mac's lines of business for the three and nine months ended September 30, 2022 and 2021:

Table 17

Net New Business Volume					
		For the Three Months Ended		For the Nine Months Ended	
		September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	On or Off Balance Sheet	Net Growth/ (Decrease)	Net Growth/ (Decrease)	Net Growth/ (Decrease)	Net Growth/ (Decrease)
		(in thousands)			
Agricultural Finance:					
Farm & Ranch:					
Loans	On-balance sheet	$ (160,600)	$ 257,645	$ 278,637	$ 854,551
Loans held in consolidated trusts:					
Beneficial interests owned by third-party investors (Pass-Through)	On-balance sheet	(11,835)	(100,621)	(125,517)	(309,673)
Beneficial interests owned by third-party investors (Structured)	On-balance sheet	297,298	—	297,298	—
IO-FMGS[(1)]	On-balance sheet	(469)	—	(1,205)	—
USDA Securities	On-balance sheet	(2,149)	6,552	(18,548)	(24,611)
AgVantage Securities	On-balance sheet	310,000	355,000	580,000	(20,000)
LTSPCs and unfunded commitments	Off-balance sheet	189,906	189,503	165,219	250,795
Farmer Mac Guaranteed Securities	Off-balance sheet	(14,466)	(16,417)	(69,244)	(58,368)
Loans serviced for others	Off-balance sheet	(337)	—	(1,932)	—
Total Farm & Ranch		**$ 607,348**	**$ 691,662**	**$ 1,104,708**	**$ 692,694**
Corporate AgFinance:					
Loans	On-balance sheet	$ 51,433	$ 19,519	$ 77,747	$ 56,432
AgVantage Securities	On-balance sheet	(4,282)	(332,580)	(18,778)	(371,766)
Unfunded Loan Commitments	Off-balance sheet	20,324	28,818	37,983	31,035
Total Corporate AgFinance		**$ 67,475**	**$ (284,243)**	**$ 96,952**	**$ (284,299)**
Total Agricultural Finance		**$ 674,823**	**$ 407,419**	**$ 1,201,660**	**$ 408,395**
Rural Infrastructure Finance:					
Rural Utilities:					
Loans	On-balance sheet	$ 67,721	$ (6,626)	$ 397,042	$ (32,513)
AgVantage Securities	On-balance sheet	76,425	476,810	29,567	785,710
LTSPCs and Unfunded Loan Commitments	Off-balance sheet	(19,946)	43,917	(25,573)	13,443
Farmer Mac Guaranteed Securities	Off-balance sheet	—	—	—	—
Total Rural Utilities		**$ 124,200**	**$ 514,101**	**$ 401,036**	**$ 766,640**
Renewable Energy:					
Loans	On-balance sheet	$ 59,979	$ 3,229	$ 99,515	$ 15,272
Unfunded Loan Commitments	Off-balance sheet	(11,755)	(3,120)	9,964	4,388
Total Renewable Energy		**$ 48,224**	**$ 109**	**$ 109,479**	**$ 19,660**
Total Rural Infrastructure Finance		**$ 172,424**	**$ 514,210**	**$ 510,515**	**$ 786,300**
Total		**$ 847,247**	**$ 921,629**	**$ 1,712,175**	**$ 1,194,695**

(1) An interest-only Farmer Mac Guaranteed Security retained as part of a structured securitization.

Farmer Mac's outstanding business volume was $25.3 billion as of September 30, 2022, a net increase of $0.8 billion from June 30, 2022 after taking into account all new business, maturities, sales, and paydowns on existing assets.

The $607.3 million net increase in Farm & Ranch during third quarter 2022 resulted from $1.9 billion of new purchases, commitments, and guarantees, mostly offset by $1.3 billion of scheduled maturities and repayments. Farmer Mac purchased a total of $303.9 million in loans, which was primarily driven by improved borrower economics albeit navigating a substantially higher interest rate environment. The $303.9 million in gross Farm & Ranch loan purchases was partially offset by $166.8 million in scheduled maturities and repayments.

Farmer Mac also purchased a total of $1.0 billion in Farm & Ranch AgVantage Securities during third quarter 2022, which primarily reflected the refinancing of maturing securities as well as financial counterparties seeking to add longer term AgVantage securities to manage their asset-liability maturity profile given recent increases in credit spreads and interest rates. The $1.0 billion in gross purchases was partially offset by $0.7 billion in scheduled maturities.

The $67.5 million net increase in Corporate AgFinance during third quarter 2022 resulted from $169.9 million of new purchases and commitments, which was offset by $102.5 million of scheduled maturities and repayments. Farmer Mac purchased a total of $136.0 million in loans, which was offset by $84.6 million in scheduled maturities and repayments. This net increase in loans was primarily due to Farmer Mac's continued focus to support loans to larger and more complex agribusinesses focused on food and fiber processing, and other food supply chain production.

The $124.2 million net increase in Rural Utilities during third quarter 2022 resulted from $547.1 million of new purchases, commitments, and guarantees, which was partially offset by $422.9 million of scheduled maturities and repayments. Farmer Mac purchased a total of $400.0 million in AgVantage Securities, $75.8 million in telecommunications loans and $60.0 million in electric distribution and generation and transmission loans. The $135.8 million in loan purchases was partially offset by $68.1 million in scheduled maturities and repayments.

The $48.2 million net increase in Renewable Energy during third quarter 2022 primarily reflects $61.7 million in loan purchases, partially offset by $13.4 million in repayments.

Farmer Mac's outstanding business volume was $23.1 billion as of September 30, 2021, a net increase of $0.9 billion from June 30, 2021 after taking into account all new business, scheduled maturities, and paydowns on existing assets.

The $691.7 million net increase in Farm & Ranch during third quarter 2021 resulted from $1.8 billion of new purchases and guarantees, partially offset by $1.1 billion of scheduled maturities and repayments.

The $284.2 million net decrease in Corporate AgFinance during third quarter 2021 resulted from $406.3 million of scheduled maturities, repayments, and sales. This was partially offset by $122.0 million of new purchases.

The $514.1 million net increase in Rural Utilities during third quarter 2021 resulted from $609.7 million of new purchases and guarantees, which was partially offset by $96.6 million of scheduled maturities and repayments.

The level and composition of Farmer Mac's outstanding business volume is based on the relationship between new business, loan sales, scheduled maturities, and repayments on existing assets from year to year. 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 18

	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
	(dollars in thousands)			
AgVantage securities	$ 1,398,807	$ 1,368,912	$ 4,245,963	$ 2,280,440
Loans securitized and held in consolidated trusts with beneficial interests owned by third parties	318,997	34,998	344,925	84,131
Total Farmer Mac Guaranteed Securities Issuances	$ 1,717,804	$ 1,403,910	$ 4,648,741	$ 2,364,571

Farmer Mac either retains the loans it purchases or securitizes them and retains or sells Farmer Mac Guaranteed Securities backed by those loans. During third quarter 2022, Farmer Mac executed a structured securitization transaction, whereby it sold and securitized agricultural mortgage loans resulting in $297.7 million of Farmer Mac Guaranteed Securities. In this transaction, Farmer Mac transferred selected loans to a depositor which then deposited the loans into a trust, at which time the loans became assets of the trust. Farmer Mac does not consider these trust fund assets to be available to satisfy the claims of the creditors of Farmer Mac and/or the depositor.

During the three and nine months ended September 30, 2022 and 2021, Farmer Mac realized no gains or losses from the securitization of loans that it holds in consolidated trusts. Farmer Mac consolidates these loans and presents them as "Loans held for investment in consolidated trusts, at amortized cost" on the consolidated balance sheets.

During the three and nine months ended September 30, 2022 and 2021, Farmer Mac realized no gains or losses from the issuance of Farmer Mac Guaranteed USDA Securities or AgVantage Securities.

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

Table 19

Outstanding Business Volume

	On or Off Balance Sheet	As of September 30, 2022	As of December 31, 2021
		(in thousands)	
Agricultural Finance:			
Farm & Ranch:			
Loans	On-balance sheet	$ 5,053,707	$ 4,775,070
Loans held in consolidated trusts:			
Beneficial interests owned by third-party investors (Pass-Through)	On-balance sheet	823,106	948,623
Beneficial interests owned by third-party investors (Structured)	On-balance sheet	297,298	—
IO-FMGS[(1)]	On-balance sheet	11,092	12,297
USDA Securities	On-balance sheet	2,427,258	2,445,806
AgVantage Securities	On-balance sheet	5,305,000	4,725,000
LTSPCs and unfunded commitments	Off-balance sheet	2,752,373	2,587,154
Farmer Mac Guaranteed Securities	Off-balance sheet	509,114	578,358
Loans serviced for others	Off-balance sheet	20,399	22,331
Total Farm & Ranch		**$ 17,199,347**	**$ 16,094,639**
Corporate AgFinance:			
Loans	On-balance sheet	$ 1,201,047	$ 1,123,300
AgVantage Securities	On-balance sheet	348,686	367,464
Unfunded Loan Commitments	Off-balance sheet	85,053	47,070
Total Corporate AgFinance		**$ 1,634,786**	**$ 1,537,834**
Total Agricultural Finance		**$ 18,834,133**	**$ 17,632,473**
Rural Infrastructure Finance:			
Rural Utilities:			
Loans	On-balance sheet	$ 2,699,415	$ 2,302,373
AgVantage Securities	On-balance sheet	3,062,829	3,033,262
LTSPCs and Unfunded Loan Commitments	Off-balance sheet	531,264	556,837
Farmer Mac Guaranteed Securities	Off-balance sheet	2,755	2,755
Total Rural Utilities		**$ 6,296,263**	**$ 5,895,227**
Renewable Energy:			
Loans	On-balance sheet	$ 186,278	$ 86,763
Unfunded Loan Commitments	Off-balance sheet	9,964	—
Total Renewable Energy		**$ 196,242**	**$ 86,763**
Total Rural Infrastructure Finance		**$ 6,492,505**	**$ 5,981,990**
Total		**$ 25,326,638**	**$ 23,614,463**

(1) An interest-only Farmer Mac Guaranteed Security retained as part of a structured securitization.

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, 2022:

Table 20

Schedule of Principal Amortization as of September 30, 2022

	Loans	Loans Underlying Off-Balance Sheet Farmer Mac Guaranteed Securities and LTSPCs	USDA Securities and Farmer Mac Guaranteed USDA Securities	Total
		(in thousands)		
2022	$ 77,484	$ 73,668	$ 26,301	$ 177,453
2023	439,110	264,394	114,140	817,644
2024	431,973	210,951	112,260	755,184
2025	458,766	215,412	116,164	790,342
2026	480,902	253,781	118,995	853,678
Thereafter	8,372,616	2,656,414	2,152,546	13,181,576
Total	$ 10,260,851	$ 3,674,620	$ 2,640,406	$ 16,575,877

Of Farmer Mac's $25.3 billion outstanding principal balance of business volume as of September 30, 2022, $8.7 billion were AgVantage securities included in the Agricultural Finance and Rural Infrastructure Finance lines 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, 2022:

Table 21

AgVantage Balances by Year of Maturity

	As of September 30, 2022
	(in thousands)
2022	$ 363,855
2023	1,970,635
2024	1,098,655
2025	586,025
2026	975,660
Thereafter[(1)]	3,724,440
Total	$ 8,719,270

(1) Includes various maturities ranging from 2027 to 2044.

The weighted-average remaining maturity of the outstanding AgVantage securities shown in the table above was 5.1 years as of September 30, 2022.

Outlook

Farmer Mac continues to provide a stable source of liquidity, capital, and risk management tools as a secondary market that helps meet the financing needs of rural America. The pace and trajectory of Farmer Mac's growth will depend on the capital and liquidity needs of the lending institutions in servicing agriculture and rural infrastructure businesses and the overall financial health of 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 infrastructure lenders seek to manage equity capital and return on equity capital requirements or reduce exposure due to lending or concentration limits, Farmer Mac can provide relief for those institutions through loan and portfolio purchases, participations, guarantees, LTSPCs, wholesale funding, or securitizations.

- As a result of business and product development efforts and continued interest in the agricultural asset class from institutional investors and nontraditional agricultural real estate lenders, Farmer Mac's customer base and product set continue to expand and diversify, which may generate more demand for Farmer Mac's products from new sources.

- Farmer Mac's growing relationships with larger regional and national lenders, as well as consolidation within the agricultural lending industry, continue to provide opportunities that could influence Farmer Mac's loan demand and increase the average transaction size within Farmer Mac's lines of business.

- Future growth opportunities in Farmer Mac's Rural Infrastructure Finance line of business may evolve by deepening business relationships with eligible counterparties, financing broadband-related capital expenditures and rural telecommunications facilities, growing opportunities for renewable energy project finance, and exploring new types of loan products. These opportunities may be limited by sector growth, credit quality, and the competitiveness of Farmer Mac's products.

- Expansion and acquisition opportunities for agricultural producers resulting from high agricultural incomes and rising costs 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.

- Investments necessary to support consumer demand could increase the need for financing within the food and agriculture supply chain, which may increase the need for incremental capital support from the secondary market.

- Market interest rates have increased significantly since the lows experienced in 2021, and rates are now higher than Farmer Mac's 15-year historical averages. New loan origination and sales volumes tend to correlate inversely with changes in interest rates. However, prepayment rates also generally correlate inversely with changes in interest rates, with higher interest rates typically slowing the pace of portfolio loan repayments. Future changes to monetary policy and the overall level and pace of the increase in interest rates could continue to impact the pace and timing of Agricultural Finance mortgage loan purchase demand and repayments.

The war in Ukraine continues to affect volatility for commodity prices and agricultural production costs for farmers and ranchers, who were already challenged by a strong inflationary environment. While agricultural commodity prices have thus far outpaced the significant increase in input costs, the impact on global commodity markets from the Ukraine conflict creates further uncertainty for farmers and ranchers in terms of global production, prices, and costs for the remainder of 2022 and into 2023. Heightened market volatility is likely to persist until there is more certainty around the timing, pace, and conclusion of the conflict in Ukraine.

In addition to continued uncertainty from supply-side disruptions, market interest rates increased rapidly during third quarter 2022, driven by the Federal Reserve's accelerated efforts to achieve monetary policy normalization and decelerate inflation. A higher interest rate environment could slow the pace of farm mortgage refinancing. While lower refinances could result in lower levels of new loan purchases in Farm & Ranch and USDA Guarantees products, it could also result in lower portfolio prepayment speeds, as was Farmer Mac's experience between 2014 and 2018. Loan prepayment speeds in 2022 have fallen to pre-pandemic levels, and they are likely to correlate inversely with interest rates. Farmer Mac offers a range of interest rates, tenors, and resetting options for loan products, allowing flexibility for originators and borrowers in all interest rate environments.

The U.S. economy continued to slow in third quarter 2022 after a rapid expansion in 2021. Higher consumer price inflation, particularly for food and energy, combined with a rising interest rate environment, has curtailed economists' outlooks for the U.S. economy heading into 2023. And while labor markets remain resilient, slower consumer spending and declines in residential housing investment indicate that the probability of a U.S. or global recession is increasing. Farmer Mac believes that its portfolio is sufficiently balanced to withstand the market volatility that arises with an economic recession, as the agricultural, food, and infrastructure industries tend not to be directly correlated with the general economy. Farmer Mac believes these sectors are generally well positioned to withstand an economic downturn due to ample consumer demand and government support.

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. Farmer Mac expects continued increases in its operating expenses over the next several years, along with business and revenue growth. We expect these efforts to continue and increase over the next 1 - 2 years as we continue to grow our revenue and diversify our funding sources. We will continue making investments in our infrastructure and funding platforms to support these strategies and scale with our growth.

During 2021, we closed on a strategic acquisition that enhanced our operations by expanding our internal loan servicing function and acquiring the loan servicing rights for a sizeable portion of our Farm & Ranch loan and USDA Securities portfolios. This acquisition should increase our interest income on our Farm & Ranch loans and USDA Securities that we service because there will not be any third-party central servicer retaining a central servicer fee on those assets. That increased interest income is expected to be partially offset by the increase in our operating expenses relating to our enhanced internal loan servicing operations. In the short term, we do not expect the effect on core earnings to be significant. In the medium to long term, the effect will depend on the size of our portfolio that we service and the long-run costs of our servicing operations.

Agricultural Industry. The agricultural economy experienced largely favorable conditions in third quarter 2022, with strong commodity prices partially offset by elevated input prices. In response to Russia's invasion of Ukraine, grain commodity prices rose rapidly during first quarter 2022 and continued to be elevated during much of the second and third quarters of 2022. Higher commodity prices for grains and many animal proteins are likely to substantially increase gross cash receipts for the 2022 marketing year. Farm expenses remained elevated in third quarter 2022, driven by rising feed, energy, interest, and labor costs. While commodity prices declined in the second quarter due to a strengthening U.S. dollar and reduced demand due to the high-price conditions, most major commodities remained elevated in third quarter 2022. Prices are likely to remain elevated as a result of the global supply shortages in food and energy.

Growth in farm income outpaced growth in expense in 2021 and again in 2022. Net cash farm income increased by nearly 25% in 2021 to $146.4 billion. The USDA forecasts that net cash farm income will climb another 15% to $168.5 billion by the end of 2022, a new all-time high. For both years, the primary driver of increased profitability is higher cash revenues and not government support payments like in 2019 and 2020. The USDA forecasts production expenses to rise by 17.8% in 2022, a level experienced in the 1970s and again in the 2012-2014 agricultural economy expansion.

The increase in farm profitability combined with low interest rates in 2020 and 2021 drove a rapid rise in land values and a decrease in farm delinquencies and bankruptcies. Land value survey data from the USDA show a 12.4% increase in average farm real estate values from June 2021 to June 2022. Annual farm real estate value gains were highest in the Northern Plains (19.8%) and the Corn Belt (14.9%) but also strong in the Lake states (13.7%), the Southern Plains (11.3%), and the Pacific (9.7%). The Federal Reserve Bank of Chicago AgLetter reported a 22% gain in farmland values in the Seventh District (primarily Iowa, Indiana, Illinois, and Wisconsin) between July 2021 and July 2022. Data from the Federal Reserve Bank of Kansas City show a similar rise in land values in the Tenth District (primarily Kansas, Missouri, Nebraska, and Oklahoma). Historically, rising farm real estate values have paired with an increase in real estate secured debt. 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 in farmland values than state or national averages indicate.

Economic conditions are likely to bring mixed effects to credit demand heading into 2023. Strong asset appreciation and rising interest rates could signal a credit cycle expansion as financial decision-makers look to lock in long-term economics for their appreciating farm and agribusiness assets. Farm profitability generally increases asset values and demand for the asset class, which also contributes to increasing credit demand. A rising interest rate environment could have mixed effects on mortgage portfolios, potentially lowering new sales and originations but also slowing portfolio prepayments. Finally, a changing yield curve coupled with widening market credit spreads could increase opportunities for corporate and institutional lending, as Farmer Mac's programs become more attractive at higher costs of capital. Combined, these factors are expected to be generally supportive of continued net portfolio growth for Farmer Mac in fourth quarter 2022.

Positive economic conditions in the agricultural economy improved Farmer Mac's portfolio performance in 2022, and they could continue to positively influence loan delinquencies and losses into 2023. Farmer Mac's 90-day delinquency levels increased in third quarter 2022 relative to second quarter 2022. The overall delinquency rate increased from 0.20% of the Farm & Ranch operating segment as of June 30, 2022 to 0.42% of the Farm & Ranch operating segment as of September 30, 2022, although the third quarter percentage is lower than the 0.58% delinquency rate as of September 30, 2021. The percentage of the portfolio rated substandard also continued to improve in third quarter 2022 to the lowest levels since

2016. However, rising input costs, market volatility, and the potential for continued economic and weather-related stress increase the level of uncertainty inherent in the agricultural credit sector, which could negatively affect the trajectory of the current agricultural cycle. Farmer Mac believes that its portfolio continues to be 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 from cyclical and external factors. For more information about the loan balances, loan-to-value ratios, 90-day delinquencies, and substandard asset rate for the Agricultural Finance mortgage loans in Farmer Mac's portfolio as of September 30, 2022, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk—Loans and Guarantees."

Exogenous factors facing farm and food producers can create uncertainty and market instability within the sector. External market conditions that could adversely impact the farm and food sectors in the remaining months of 2022 and into 2023 include U.S. dollar strength, supply chain disruptions, foreign trade and trade policy, and environmental conditions. The U.S. agricultural sector has become increasingly dependent on foreign markets as a source of demand, making trade policy increasingly important to farms and food. The USDA's estimate for fiscal year 2022 is a sizable increase in export value over 2021, and through August 2022, agricultural export values are up 16% in 2022 compared to 2021. However, a deteriorating global economic outlook combined with the continued tightening of U.S. central bank policy has increased the relative value of the U.S. dollar, which could provide a headwind for future export sales in 2022 and 2023. Disruptions to global grain supplies in Ukraine and Russia could continue to boost U.S. agricultural product demand. Slower global growth could be a headwind for consumer-oriented products like animal proteins, dairy, fruits, and nuts, and Ukrainian corn and wheat production may eventually stabilize. Because Farmer Mac has significant exposure to crop commodities like corn, soybeans, hay, wheat, and cotton, a sustained rally in agricultural commodities is likely to continue to benefit Farmer Mac's overall portfolio credit quality more than degradation from downward pressure on livestock and consumer product profitability.

Severe weather conditions and long-term environmental change continue to shape agricultural sectors. The U.S. experienced 15 separate billion-dollar weather disasters in 2022 through October 11, 2022, as tracked by the National Oceanic and Atmospheric Administration. Many of those events affected agriculture, including midwestern storms, western wildfires, and drought. Federal crop insurance provides a strong mitigator against this risk, but farmers and ranchers face increasingly-severe weather incidents. Long and persistent drought conditions have impacted agricultural production regions in the West and Midwest in 2021 and 2022, but there has been a modest improvement in conditions in third quarter 2022. Roughly 14% of the continental U.S. remained in exceptional or extreme drought as of October 25, 2022, according to data from the National Drought Mitigation Center. Extended periods of drought and dryness can reduce agricultural productivity, cause lasting damage to permanent crops like fruit and tree nuts, and result in producers leaving some fields fallow due to lack of water. States also regulate water use, and state laws like California's Sustainable Groundwater Management Act (SGMA) will continue to shape state-led efforts to manage water infrastructure and use and could potentially impact producers. Agricultural production in California, Oregon, Washington, Arizona, and Utah is likely to experience the greatest impact from the 2021 and 2022 droughts. For loans in areas that commonly experience exceptional drought (primarily in California), Farmer Mac's underwriting process includes an assessment of anticipated long-term water availability for the related property and how that impacts the collateral value and borrower's cash flow position to mitigate that risk. During the latter part of third quarter 2022, hurricane Ian made landfall in southwestern Florida, and after crossing over the Florida peninsula, the hurricane made a second landfall in South Carolina. The storm caused significant damage and has impacted numerous counties and communities in its wake. Farmer Mac is assessing any potential impacts to farmers, ranchers, and rural utility customers that were in the path of the hurricane Ian, but at this time, we do not anticipate any material risks to Farmer Mac customers or credit exposures. For more information about Farmer Mac's environmental risk mitigation requirements, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk—Loans and Guarantees—Environmental Considerations" in Farmer Mac's 2021 Annual Report.

Rural Infrastructure Industry. Economic conditions affecting the rural infrastructure industry typically follow those in the general economy. According to data from the U.S. Energy Information Administration, sales and the revenue from the sale of electricity to customers increased by 3.9% and 14.2%, respectively, in the last 12 months through July 2022 compared to July 2021. This increase was driven by a sharp increase in sales to the commercial, industrial, and transportation sectors and an increase in the retail price of electricity. Higher energy input prices such as natural gas and coal have become more of a headwind in 2022. Natural gas prices rose consistently in 2021 and 2022 because of reduced supply and additional demand for U.S. liquified natural gas from European countries. Coal prices also rapidly increased in third quarter 2022, driven by higher natural gas prices and additional overseas demand to offset limited Russian coal exports. Despite higher input costs, power producers are generally able to pass cost increases through higher retail electricity prices, which has contributed to the increase in electricity costs impacting retail customers during third quarter 2022. Oil and natural gas prices were volatile during third quarter 2022 and have recently come off their 2022 highs, a positive signal for sector profitability entering fourth quarter 2022. Through September 30, 2022, Farmer Mac had not observed material degradation in the financial performance of its rural infrastructure portfolio, and that portfolio has never experienced a serious delinquency or default since inception.

Prospects for loan growth within the rural infrastructure industry overall appear to be moderate in the near 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 financing the electric 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 changing interest rate environment, increased policy initiatives to support rural connectivity, and competitive dynamics within the rural utilities cooperative finance industry. Cooperatives and service providers have access to numerous federally funded programs in 2022, such as the Federal Communications Commission's Rural Digital Opportunity Fund (RDOF), the USDA’s ReConnect, and the USDA’s Telecommunications Infrastructure Loan and Loan Guarantee program. In addition to capital projects spurred by these programs, Farmer Mac could see an increase in financing opportunities for other telecommunications providers in rural areas, with wireless broadband increasingly important to economic opportunity and precision agriculture.

The growth in renewable energy generation and deployment of energy storage technologies may help deepen Farmer Mac's relationships with existing customers through new business opportunities. According to data from the U.S. Energy Information Administration, renewable electricity capacity is expected to grow by 48% in the next five years, compared to total electric capacity growth of 10%. The rising cost of fossil fuel-based inputs combined with the falling costs of renewable power generation may hasten this increase in capacity along with recently enacted legislature, such as the Inflation Reduction Act of 2022, aimed at incentivizing domestic production in clean energy technologies such as solar and wind. This growth may broaden Farmer Mac's customer base with cooperative lenders focused on lending to renewable energy customers. In response to this growth, 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 initiative, Farmer Mac's total outstanding loans and loan commitments of renewable energy financing transactions was $196.2 million as of September 30, 2022.

Legislative and Regulatory Outlook. Farmer Mac continues to monitor potential legislative and regulatory changes that could affect Farmer Mac or its stakeholders, including:

- On August 16, 2022, President Biden signed into law the Inflation Reduction Act of 2022 ("IRA") which included debt relief for economically distressed borrowers of Farm Service Agency direct and guaranteed farm ownership and operating loans programs. Farmer Mac provides a secondary market for the USDA guaranteed portion of these loans. On October 18, 2022, USDA announced that approximately 11,000 delinquent direct and guaranteed borrowers had their accounts brought current. Notably, the relief provided was not full debt forgiveness that had been previously contemplated by the American Recovery Act. Farmer Mac does not anticipate an acceleration of prepayments on the USDA-guaranteed loans it holds due to the IRA debt relief provision.

- The IRA also included $20 billion for financial and technical assistance to help farmers and ranchers implement and expand conservation practices that help address climate change, as well as several renewable energy initiatives aimed at boosting long-term resiliency, reliability, and affordability of rural electric systems. Under the IRA, rural electric cooperatives are directly eligible for energy innovation tax credits for the first time. A new voluntary $9.7 billion USDA loan and grant program was also established for rural electric cooperatives that build or purchase renewable energy systems. These initiatives, together with other provisions in the IRA, aim to boost renewable energy production in rural areas, which could lead to increased business volumes for Farmer Mac's Rural Infrastructure Finance business segment.

- The IRA also included a fifteen-percent alternative minimum tax on corporations with book incomes over $1 billion for taxable years beginning after December 31, 2022 and a one-percent excise tax on stock repurchases by public companies that occur after December 31, 2022. The IRA's corporate alternative minimum tax is not expected to apply to Farmer Mac any time in the near future based on the company's current level of reported financial statement income. Farmer Mac has sponsored a stock repurchase program since 2015 but has not repurchased any shares of its Class C common stock since first quarter 2020. Farmer Mac's current repurchase program authorizes up to $9.8 million in repurchases of its Class C common stock. The IRA's excise tax on stock repurchases will apply to the extent Farmer Mac buys back any shares of Class C common stock after December 31, 2022.

- Congress is scheduled to reauthorize the farm bill in 2023. This omnibus piece of legislation contains several programs that impact farm profitability, agricultural credit, and rural infrastructure. Farmer Mac has been seeking modifications to its charter during the farm bill reauthorization to enhance its partners and services in support of farmers, ranchers, agribusinesses, and rural infrastructure. Farmer Mac will continue to monitor this legislation for any impact it may have on Farmer Mac and its stakeholders.

- Agricultural exports from the United States were valued at more than $177 billion in the 2021 fiscal year. In 2021, Congress passed a $550 billion bipartisan infrastructure bill that provides for key investments to improve roads, bridges, freight rail, electric, broadband, ports, and waterways that are expected to support farmers and ranchers' profitability, competitiveness, and access to global markets. As these investments are made, they may have a positive impact on the global competitiveness of U.S. agriculture. The ability to produce food and fiber and transport it efficiently across the globe is critical for the U.S. food and agricultural sectors' competitiveness internationally.

- The Farm Credit Administration ("FCA") is the prudential regulator of Farmer Mac. On September 29, 2022, the U.S. Senate confirmed Vincent Logan to be a member of the FCA board. Mr. Logan was subsequently appointed to be the Chairman and CEO of the FCA by President Biden on October 21, 2022. Mr. Logan is expected to serve in this role until his term expires on May 21, 2026. As a board member, he and the other board members are responsible for making policy, adopting regulations, and overseeing and examining Farmer Mac.

- Two of FCA's three board members are currently serving in holdover status because their terms have expired. They will continue to serve in their roles until the President nominates individuals to replace the board members and they are confirmed by the U.S. Senate. Farmer Mac will continue to monitor changes to the composition of the FCA board, as it may affect Farmer Mac's regulatory environment.

Balance Sheet Review

The following table summarizes Farmer Mac's balance sheet as of the periods indicated:

Table 22

	As of		Change	
	September 30, 2022	December 31, 2021	$	%
		(in thousands)		
Assets				
Cash and cash equivalents	$ 868,234	$ 908,785	$ (40,551)	(4)%
Investment securities, net of allowance	4,449,017	3,882,590	566,427	15 %
Farmer Mac Guaranteed Securities, net of allowance	8,302,041	8,361,798	(59,757)	(1)%
USDA Securities	2,430,489	2,440,732	(10,243)	— %
Loans, net of allowance	8,805,184	8,300,619	504,565	6 %
Loans held in trusts, net of allowance	1,120,000	948,059	171,941	18 %
Other	466,623	278,426	188,197	68 %
Total assets	$ 26,441,588	$ 25,121,009	$ 1,320,579	5 %
Liabilities				
Notes Payable	$ 23,500,657	$ 22,713,771	$ 786,886	3 %
Debt securities of consolidated trusts held by third parties	1,090,539	981,379	109,160	11 %
Other	618,369	212,159	406,210	191 %
Total liabilities	$ 25,209,565	$ 23,907,309	$ 1,302,256	5 %
Total equity	1,232,023	1,213,700	18,323	2 %
Total liabilities and equity	$ 26,441,588	$ 25,121,009	$ 1,320,579	5 %

Assets. The increase in total assets was primarily attributable to new loan volume and a larger investment portfolio.

Liabilities. The increase in total liabilities was primarily due to an increase in total notes payable to fund the acquisition of loan volume.

Equity. The increase in total equity was primarily due to an increase in retained earnings, partially offset by a decrease in accumulated other comprehensive income.

Risk Management

<u>*Credit Risk – Loans and Guarantees*</u>.

Agricultural Finance - Direct Credit Exposure

Farmer Mac's direct credit exposure to Agricultural Finance mortgage loans as of September 30, 2022 was $10.1 billion across 48 states. Farmer Mac applies credit underwriting standards and methodologies to help assess exposures to loan purchases, which may include collateral valuation, financial metrics, and other appropriate borrower financial and credit information. For Corporate AgFinance loans, which are often larger loan exposures to agriculture production and agribusinesses that support agriculture production, food and fiber processing, and other supply chain production, and which may have risk profiles that differ from smaller agricultural mortgage loans, Farmer Mac has implemented methodologies and parameters that help assess credit risk based on the appropriate sector, borrower construct, and transaction complexity. For more information about Farmer Mac's underwriting and collateral valuation standards for Agricultural Finance mortgage loans, see "Business—Farmer Mac's Lines of Business—Agricultural Finance—Underwriting and Collateral Standards—Farm & Ranch" and "Business—Farmer Mac's Lines of Business—Agricultural Finance—Underwriting and Collateral Standards—Corporate AgFinance" in Farmer Mac's 2021 Annual Report.

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. For Agricultural Finance mortgage loans to which Farmer Mac has direct credit exposure, Farmer Mac's 90-day delinquencies as of September 30, 2022, were $44.2 million (0.42% of the Agricultural Finance mortgage loan portfolio to which Farmer Mac has direct credit exposure), compared to $20.6 million (0.20% of the Agricultural Finance mortgage loan portfolio) as of June 30, 2022 and $47.3 million (0.48% of the Agricultural Finance mortgage loan portfolio) as of December 31, 2021. Those 90-day delinquencies were comprised of 31 delinquent loans as of September 30, 2022, compared to 19 delinquent loans as of June 30, 2022 and 32 delinquent loans as of December 31, 2021. The increase in 90-day delinquencies was primarily driven by increased delinquencies in crops, permanent plantings, livestock, and part-time farms. The top ten borrower exposures over 90 days delinquent represented over half of the 90-day delinquencies as of September 30, 2022. Farmer Mac believes that it remains adequately collateralized on its delinquent loans.

Farmer Mac's 90-day delinquency rate as of September 30, 2022 was below Farmer Mac's historical average. In the near-term, our delinquency rate may exceed our historical average due to the impact of adverse weather events and/or supply chain disruptions on the agricultural economy. Farmer Mac's average 90-day delinquency rate as a percentage of its Agricultural Finance mortgage loan 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 ethanol loan portfolio.

The following table presents historical information about Farmer Mac's 90-day delinquencies in the Agricultural Finance mortgage loan portfolio compared to the unpaid principal balance of all Agricultural Finance mortgage loans to which Farmer Mac has direct credit exposure:

Table 23

	Agricultural Finance Mortgage Loans	90-Day Delinquencies	Percentage
	(dollars in thousands)		
As of:			
September 30, 2022	$ 10,508,549	$ 44,232	0.42 %
June 30, 2022	10,128,083	20,623	0.20 %
March 31, 2022	9,879,978	55,847	0.57 %
December 31, 2021	9,811,749	47,307	0.48 %
September 30, 2021	9,445,359	54,792	0.58 %
June 30, 2021	9,056,152	63,076	0.70 %
March 31, 2021	8,629,352	72,346	0.84 %
December 31, 2020	8,581,181	46,232	0.54 %
September 30, 2020	8,249,349	88,041	1.07 %

Across all of Farmer Mac's lines of business, 90-day delinquencies represented 0.17% of total outstanding business volume as of September 30, 2022, compared to 0.20% as of December 31, 2021 and 0.24% as of September 30, 2021.

The following table presents outstanding Agricultural Finance mortgage loans and 90-day delinquencies as of September 30, 2022 by year of origination, geographic region, commodity/collateral type, original loan-to-value ratio, and range in the size of borrower exposure:

Table 24

Agricultural Finance Mortgage Loans 90-Day Delinquencies as of September 30, 2022				
	Distribution of Agricultural Loans	Agricultural Loans	90-Day Delinquencies[(1)]	Percentage
		(dollars in thousands)		
By year of origination:				
2012 and prior	6 %	$ 640,497	$ 2,824	0.44 %
2013	3 %	278,121	3,318	1.19 %
2014	2 %	234,378	1,114	0.48 %
2015	4 %	367,907	10,236	2.78 %
2016	5 %	567,688	1,560	0.27 %
2017	5 %	551,530	6,111	1.11 %
2018	6 %	618,799	8,729	1.41 %
2019	8 %	879,071	2,518	0.29 %
2020	20 %	2,138,874	5,004	0.23 %
2021	27 %	2,782,219	931	0.03 %
2022	14 %	1,449,465	1,887	0.03 %
Total	100 %	$ 10,508,549	$ 44,232	0.42 %
By geographic region[(2)]:				
Northwest	13 %	$ 1,339,934	$ 4,470	0.33 %
Southwest	31 %	3,221,292	15,956	0.50 %
Mid-North	26 %	2,739,085	9,305	0.34 %
Mid-South	18 %	1,884,742	10,915	0.58 %
Northeast	4 %	426,332	2,335	0.55 %
Southeast	8 %	897,164	1,251	0.14 %
Total	100 %	$ 10,508,549	$ 44,232	0.42 %
By commodity/collateral type:				
Crops	50 %	$ 5,259,688	$ 23,232	0.44 %
Permanent plantings	22 %	2,323,444	13,930	0.60 %
Livestock	18 %	1,941,923	4,090	0.21 %
Part-time farm	5 %	479,667	2,980	0.62 %
Ag. Storage and Processing	5 %	485,859	—	— %
Other	—	17,968	—	— %
Total	100 %	$ 10,508,549	$ 44,232	0.42 %
By original loan-to-value ratio:				
0.00% to 40.00%	19 %	$ 1,973,456	$ 3,180	0.16 %
40.01% to 50.00%	22 %	2,348,156	11,103	0.47 %
50.01% to 60.00%	36 %	3,738,959	22,465	0.60 %
60.01% to 70.00%	21 %	2,160,798	7,175	0.33 %
70.01% to 80.00%[(3)]	2 %	259,084	309	0.12 %
80.01% to 90.00%[(3)]	— %	28,096	—	— %
Total	100 %	$ 10,508,549	$ 44,232	0.42 %
By size of borrower exposure[(4)]:				
Less than $1,000,000	26 %	$ 2,788,773	$ 5,798	0.21 %
$1,000,000 to $4,999,999	37 %	3,860,864	17,571	0.46 %
$5,000,000 to $9,999,999	16 %	1,655,895	11,248	0.68 %
$10,000,000 to $24,999,999	12 %	1,279,386	9,615	0.75 %
$25,000,000 and greater	9 %	923,631	—	— %
Total	100 %	$ 10,508,549	$ 44,232	0.42 %

(1) Includes loans held and loans underlying off-balance sheet Agricultural Finance 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 Agricultural Finance mortgage loans is the level of internally-rated "substandard" assets, both in dollars and as a percentage of the outstanding 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, 2022, Farmer Mac's Agricultural Finance mortgage loans (to which it has direct credit exposure) comprising substandard assets were $206.9 million (2.0% of the portfolio), compared to $213.7 million (2.1% of the portfolio) as of June 30, 2022 and $246.7 million (2.5% of the portfolio) as of December 31, 2021. Those substandard assets comprised 251 loans as of September 30, 2022, 249 loans as of June 30, 2022, and 274 loans as of December 31, 2021.

The decrease of $6.8 million in substandard assets during third quarter 2022 was driven by credit upgrades in our off-balance sheet portfolio, partially offset by credit downgrades in our on-balance sheet portfolio. Substandard assets remained constant as a percentage of the total on-balance sheet portfolio due to volume growth being offset by credit downgrades. Substandard assets decreased as a percentage of the total off-balance sheet portfolio due to a combination of credit upgrades and volume growth.

The percentage of substandard assets within the portfolio as of September 30, 2022 was below the historical average. Farmer Mac's average substandard assets as a percentage of its Agricultural Finance mortgage loans over the last 15 years is approximately 4%. 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 ethanol portfolio. 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.

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, 2022 and December 31, 2021, the average unpaid principal balances for Agricultural Finance mortgage loans outstanding and to which Farmer Mac has direct credit exposure was $804,000 and $790,000, 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 Agricultural Finance mortgage loans purchased during third quarter 2022 was 37%, compared to 51% for loans purchased during third quarter 2021. The weighted-average original loan-to-value ratio for Agricultural Finance mortgage loans and loans underlying off-balance sheet Agricultural Finance Guaranteed Securities and LTSPCs was 51% and 52% as of September 30, 2022 and December 31, 2021, respectively. The weighted-average original loan-to-value ratio for all 90-day delinquencies was 55% and 51% as of September 30, 2022 and December 31, 2021, 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 Agricultural Finance mortgage loans and loans underlying off-balance sheet Agricultural Finance Guaranteed Securities and LTSPCs was 46% and 47% as of September 30, 2022 and December 31, 2021, respectively.

The following table presents the current loan-to-value ratios for the Agricultural Finance mortgage loans to which Farmer Mac has direct credit exposure, as disaggregated by internally assigned risk ratings:

Table 25

Agricultural Finance Mortgage Loans current loan-to-value ratio by internally assigned risk rating as of September 30, 2022

	Acceptable	Special Mention	Substandard	Total
	(in thousands)			
Current loan-to-value ratio[1]:				
0.00% to 40.00%	$ 3,049,824	$ 50,515	$ 73,891	$ 3,174,230
40.01% to 50.00%	2,517,294	130,995	53,669	2,701,958
50.01% to 60.00%	2,838,434	94,836	41,945	2,975,215
60.01% to 70.00%	1,399,942	41,868	22,818	1,464,628
70.01% to 80.00%	137,485	26,227	14,299	178,011
80.01% and greater	13,722	531	254	14,507
Total	$ 9,956,701	$ 344,972	$ 206,876	$ 10,508,549

(1) The current loan-to-value ratio is based on original appraised value (or most recently obtained valuation, 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 Agricultural Finance mortgage loans as of September 30, 2022 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 26

Agricultural Finance Mortgage Loans Credit Losses Relative to Cumulative Original Loans, Guarantees, and LTSPCs as of September 30, 2022

	Cumulative Original Loans, Guarantees and LTSPCs	Cumulative Net Credit Losses/ (Recoveries)	Cumulative Loss Rate
	(dollars in thousands)		
By year of origination:			
2012 and prior	$ 17,252,470	$ 33,785	0.20 %
2013	1,476,129	—	— %
2014	1,085,167	—	— %
2015	1,242,462	(516)	(0.04)%
2016	1,584,522	84	0.01 %
2017	1,677,035	4,311	0.26 %
2018	1,372,614	—	— %
2019	1,578,264	—	— %
2020	2,878,677	—	— %
2021	3,231,011	—	— %
2022	1,518,681		— %
Total	$ 34,897,032	$ 37,664	0.11 %
By geographic region[(1)]:			
Northwest	$ 4,512,146	$ 11,275	0.25 %
Southwest	11,723,092	8,542	0.07 %
Mid-North	8,702,476	17,165	0.20 %
Mid-South	5,028,697	(613)	(0.01)%
Northeast	1,822,190	323	0.02 %
Southeast	3,108,431	972	0.03 %
Total	$ 34,897,032	$ 37,664	0.11 %
By commodity/collateral type:			
Crops	$ 16,188,280	$ 2,971	0.02 %
Permanent plantings	7,538,378	9,783	0.13 %
Livestock	7,704,405	3,836	0.05 %
Part-time farm	1,881,099	1,090	0.06 %
Ag. Storage and Processing	1,416,289	19,984	1.41 %
Other	168,581	—	— %
Total	$ 34,897,032	$ 37,664	0.11 %

(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 Agricultural Finance mortgage loans by commodity type within geographic region and cumulative credit losses by origination year and commodity type:

Table 27

	As of September 30, 2022						
	Agricultural Finance Mortgage Loans 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	$ 694,435	$ 217,110	$ 289,423	$105,578	$ 33,365	$ 23	$1,339,934
	6.6 %	2.1 %	2.8 %	1.0 %	0.3 %	— %	12.8 %
Southwest	668,185	1,731,382	555,633	107,431	142,660	16,001	3,221,292
	6.4 %	16.5 %	5.3 %	1.0 %	1.4 %	0.2 %	30.8 %
Mid-North	2,316,903	10,653	212,835	89,699	107,269	1,726	2,739,085
	22.0 %	0.1 %	2.0 %	0.9 %	1.0 %	— %	26.0 %
Mid-South	1,084,753	75,943	586,698	63,617	73,714	17	1,884,742
	10.3 %	0.7 %	5.6 %	0.6 %	0.7 %	— %	17.9 %
Northeast	193,619	42,523	75,845	51,306	63,039	—	426,332
	1.8 %	0.4 %	0.7 %	0.5 %	0.6 %	— %	4.0 %
Southeast	301,793	245,833	221,489	62,036	65,812	201	897,164
	2.9 %	2.3 %	2.1 %	0.6 %	0.6 %	— %	8.5 %
Total	$5,259,688	$2,323,444	$1,941,923	$479,667	$485,859	$17,968	$10,508,549
	50.0 %	22.1 %	18.5 %	4.6 %	4.6 %	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 28

	As of September 30, 2022					
	Agricultural Loans 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:						
2012 and prior	$ 3,427	$ 9,783	$ 3,836	$ 1,066	$ 15,673	$ 33,785
2013	—	—	—	—	—	—
2014	—	—	—	—	—	—
2015	(540)	—	—	24	—	(516)
2016	84	—	—	—	—	84
2017	—	—	—	—	4,311	4,311
2018	—	—	—	—	—	—
2019	—	—	—	—	—	—
2020	—	—	—	—	—	—
2021	—	—	—	—	—	—
2022	—	—	—	—	—	—
Total	$ 2,971	$ 9,783	$ 3,836	$ 1,090	$ 19,984	$ 37,664

For more information about the credit quality of Farmer Mac's Agricultural Finance mortgage loans and the associated allowance for losses please refer to Note 5 and Note 6 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."

Rural Infrastructure Finance - Direct Credit Exposure

Farmer Mac's direct credit exposure to Rural Infrastructure Finance loans held and loans underlying LTSPCs as of September 30, 2022 was $3.4 billion across 45 states. For more information about Farmer Mac's underwriting and collateral valuation standards for Rural Infrastructure Finance loans, see "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Underwriting and Collateral Standards" in Farmer Mac's 2021 Annual Report. As of September 30, 2022, there were no delinquencies in Farmer Mac's portfolio of Rural Infrastructure Finance loans.

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 29

	Rural Infrastructure Finance portfolio by internally assigned risk rating as of September 30, 2022			
	Acceptable	Special Mention	Substandard	Total
	(in thousands)			
Distribution Cooperative	$ 2,284,917	$ —	$ —	$ 2,284,917
G&T Cooperative	693,096	—	—	693,096
Renewable Energy	196,242	—	—	196,242
Telecommunications	252,666	—	—	252,666
Rural Utilities Total	$ 3,426,921	$ —	$ —	$ 3,426,921

For more information about the credit quality of Farmer Mac's Rural Infrastructure Finance 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 to the USDA Securities in the Agricultural Finance line of business because of the USDA guarantee. As of September 30, 2022, Farmer Mac had not experienced any credit losses on any USDA Securities or Farmer Mac Guaranteed USDA Securities 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 Securities.

Farmer Mac requires many lenders to make representations and warranties about the conformity of Agricultural Finance mortgage loans and Rural Infrastructure Finance 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, 2022, 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 Finance mortgage loans (other than rural housing and part-time farm mortgage loans) and Rural Infrastructure Finance 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. For more information about Farmer Mac's loan eligibility requirements and underwriting standards, see "Business—Farmer Mac's Lines of Business—Agricultural Finance—Loan Eligibility," "Business—Farmer Mac's Lines of Business—Agricultural Finance—Underwriting and Collateral Standards—Farm & Ranch," "Business—Farmer Mac's Lines of Business—Agricultural Finance—Underwriting and Collateral Standards—Corporate AgFinance," and "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Underwriting and Collateral Standards" in Farmer Mac's 2021 Annual Report.

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, 2022, 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—Agricultural Finance—Loan Servicing" and "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Lenders and Loan Servicing" in Farmer Mac's 2021 Annual Report.

Credit Risk – Counterparty Risk. 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 loans that become and remain (within specified parameters) delinquent in the payment of principal or interest and to substitute eligible loans that are current in payment or pay down the AgVantage securities to maintain the minimum required collateralization level.

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. As a result, Farmer Mac has indirect credit exposure to the Agricultural Finance mortgage loans and Rural Utilities loans that secure AgVantage securities. For AgVantage counterparties that are institutional real estate investors or financial funds and other similar entities, Farmer Mac also typically requires that the counterparty (1) maintain a higher collateralization level, through either a higher overcollateralization percentage or lower loan-to-value ratio thresholds and (2) comply with specified financial covenants for the life of the related AgVantage security to avoid default. As of September 30, 2022, Farmer Mac had not experienced any credit losses on any AgVantage securities. For a more detailed description of AgVantage securities, see "Business—Farmer Mac's Lines of Business—Agricultural Finance—Other Products – Agricultural Finance—AgVantage Securities" and "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Other Products – Rural Infrastructure Finance—AgVantage Securities" in Farmer Mac's 2021 Annual Report.

The unpaid principal balance of outstanding on-balance sheet AgVantage securities secured by loans eligible for the Agricultural Finance line of business totaled $5.7 billion as of September 30, 2022 and $5.1 billion as of December 31, 2021. The unpaid principal balance of on-balance sheet AgVantage securities secured by loans eligible for the Rural Infrastructure Finance line of business totaled $3.1 billion as of September 30, 2022 and $3.0 billion as of December 31, 2021. The unpaid principal balance of outstanding off-balance sheet AgVantage securities totaled $2.8 million as of both September 30, 2022 and December 31, 2021.

The following table provides information about the issuers of AgVantage securities and the required collateralization levels for those transactions as of September 30, 2022 and December 31, 2021:

Table 30

	As of September 30, 2022		As of December 31, 2021	
Counterparty	Balance	Required Collateralization	Balance	Required Collateralization
		(dollars in thousands)		
AgVantage:				
CFC	$ 3,065,584	100%	$ 3,036,017	100%
MetLife	2,050,000	103%	2,050,000	103%
Rabo AgriFinance	2,755,000	105%	2,550,000	105%
Other[(1)]	848,686	106% to 125%	492,464	106% to 125%
Total outstanding	$ 8,719,270		$ 8,128,481	

(1) Consists of AgVantage securities issued by 12 and 13 different issuers as of September 30, 2022 and December 31, 2021, 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 credit rating agency reports. For more information about Farmer Mac's lender eligibility requirements, see "Business—Farmer Mac's Lines of Business—Agricultural Finance—Lenders" and "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Lenders and Loan Servicing" in Farmer Mac's 2021 Annual Report.

Farmer Mac manages institutional credit risk related to its interest rate swap counterparties through collateralization provisions contained in each of its swap agreements that vary 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, 2022, Farmer Mac had $0.9 billion of cash and cash equivalents and $4.4 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 FCA regulations found at 12 C.F.R. §§ 652.1-652.45 (the "Liquidity and Investment Regulations"). 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.

The Liquidity and Investment Regulations and Farmer Mac's 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.

The Liquidity and Investment Regulations and Farmer Mac's internal policies also establish concentration limits, which are intended to limit exposure to any single entity, issuer, or obligor. The 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 ($131.1 million as of September 30, 2022). However, Farmer Mac's current policy limits this total credit exposure to 5% of its regulatory capital ($65.5 million as of September 30, 2022). 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 interest-earning assets on its balance sheet because of timing differences in the cash flows due to maturity, paydown, or repricing of the assets and debt together with financial derivatives. 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 realize a decline in income if assets repay more slowly than originally forecasted and the associated maturing debt must be replaced by debt issuances at higher interest rates.

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 sensitivities 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 interest-earning 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, establishes guidelines, 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 and help mitigate impacts from interest rate changes across the yield curve. As part of this strategy, Farmer Mac seeks to issue debt securities across a variety of maturities that together with financial derivatives closely align the forecasted debt and financial derivative cash flows with forecasted asset cash flows.

Farmer Mac issues discount notes and both callable and non-callable medium-term notes across a spectrum of maturities to execute its debt issuance strategy. Portions of Farmer Mac's callable debt is issued to mitigate prepayment risk associated with certain interest-earning assets held on balance sheet. In general, as interest rates decline, prepayments typically increase, and Farmer Mac is able to economically extinguish certain callable debt issuances. In addition, Farmer Mac enters into financial derivatives, primarily interest rate swaps, 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 interest-earning assets, Farmer Mac incorporates behavioral models when projecting and valuing cash flows associated with these assets. In recognition that 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 the timing of asset prepayments which may, in turn, impact durations and values of the assets. Declining interest rates generally result in increased prepayments, which shortens the duration of these assets, while rising interest rates generally result in lower prepayments, thereby extending the duration of the assets.

Farmer Mac is subject to interest rate risk on loans and securities it has committed to acquire but 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 assets, 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 these loans. Farmer Mac manages the interest rate risk exposure related to these loans by entering into exchange-traded futures contracts involving U.S. Treasury securities and other financial derivatives. Similarly, when Farmer Mac commits to sell certain assets, the associated interest rate exposure is primarily managed with exchange-traded futures contracts involving U.S. Treasury securities and other financial derivatives.

Farmer Mac's $0.9 billion of cash and cash equivalents held as of September 30, 2022 mature within three months. As of September 30, 2022, $3.3 billion of the $4.4 billion of investment securities (75%) were floating rate securities with rates that adjust within one year or fixed rate securities with original maturities between three months and one year. Farmer Mac's floating rate investment securities are funded with floating rate debt. 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 evaluates and conducts interest rate shock simulations on its portfolio of financial assets, debt, and financial derivatives and examines a variety of metrics to quantify and manage its exposure to interest rate risk. These metrics include sensitivity to interest rate movements on the market value of equity ("MVE") and forecasted net effective spread ("NES") as well as a duration gap analysis.

MVE represents management's estimate of the present value of all future cash flows from its current portfolio of 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. The MVE sensitivity analysis measures the degree to which the market values of Farmer Mac's assets, liabilities, and financial derivatives are estimated to change for a given change in interest rates.

Farmer Mac's NES simulation represents the difference between projected income over the next twelve months from the current portfolio of interest-earning assets and interest expense produced by the related funding, including associated financial derivatives. Farmer Mac's NES simulation may be impacted by changes in market interest rates resulting from timing differences between maturities and re-pricing characteristics of funded assets and debt together with the associated financial derivatives. The direction and magnitude of any such effect depends on the direction and magnitude of the change in interest rates across the yield curve as well as the composition of Farmer Mac's portfolio. The NES simulation 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, the NES simulation sensitivity statistics provide a short-term view of Farmer Mac's NES income sensitivity to interest rate shocks.

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

Each of the interest rate risk metrics is quantified using asset/liability models and derived based on management's best estimates of factors such as implied forward interest rates across the yield curve, interest rate volatility, and timing of asset prepayments and callable debt redemptions. Accordingly, these metrics are estimates rather than precise measurements. Actual results may differ to the extent there are material changes to Farmer Mac's financial asset portfolio or changes in funding or hedging 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, 2022 and December 31, 2021 to an immediate and instantaneous uniform or "parallel" shift in the yield curve:

Table 31

	Percentage Change in MVE from Base Case	
Interest Rate Scenario[1]	As of September 30, 2022	As of December 31, 2021[1]
+100 basis points	(2.5)%	3.7 %
-100 basis points	0.8 %	(0.1)%

	Percentage Change in NES from Base Case	
Interest Rate Scenario	As of September 30, 2022	As of December 31, 2021[1]
+100 basis points	1.5 %	6.6 %
-100 basis points	(1.4)%	(0.1)%

(1) The down 100 basis points shock scenario was replaced in 2020 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. The replacement down shock scenario was negative 2 basis points as of December 31, 2021.

As of September 30, 2022, Farmer Mac's duration gap was positive 2.8 months, compared to negative 1.5 months as of December 31, 2021. Farmer Mac updated its duration gap measure to interest-earning assets, debt, and financial derivatives as of December 31, 2021. Interest rates within the yield curve flattened during the first nine months of 2022 with the 2-year and 10-year U.S. Treasury Note yield-to-maturity increasing by approximately 355 basis points and 232 basis points, respectively, versus year-end 2021. This rate movement contributed to extending the duration of Farmer Mac's funded assets compared to its debt and financial derivatives, thereby lengthening Farmer Mac's duration gap.

Financial Derivatives Transactions

The economic effects of financial derivatives are included in Farmer Mac's MVE, NES, and duration gap analyses. Farmer Mac typically enters into the following types of financial derivative transactions principally to protect against risk from the effects of market price or interest rate movements on the value of interest-earning assets, future cash flows, and debt issuance, and 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;
- "basis swaps," in which Farmer Mac pays floating rates of interest based on one index to, and receives floating rates of interest based on a different index from, counterparties; and
- exchange-traded futures contracts involving U.S. Treasury securities.

As of September 30, 2022, Farmer Mac had $22.4 billion combined notional amount of interest rate swaps, with terms ranging from less than one year to just over thirty years, of which $8.7 billion were pay-fixed interest rate swaps, $11.9 billion were receive-fixed interest rate swaps, and $1.8 billion were basis swaps.

Farmer Mac enters into interest rate swaps to more closely match the cash flow and duration characteristics of its interest-earning assets with those of its debt. For example, Farmer Mac transacts pay-fixed interest rate swaps and issues floating rate debt to effectively create fixed rate funding that approximately matches the duration of the corresponding fixed rate assets being funded. Farmer Mac evaluates the overall cost of using interest rate swaps 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 or Secured Overnight Financing Rate (“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 undesignated financial derivatives are reported in "Gains/(losses) 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 floating 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 interest rate swap transactions are conducted under standard collateralized agreements that limit Farmer Mac's potential credit exposure to any counterparty. As of both September 30, 2022 and December 31, 2021, Farmer Mac had no uncollateralized net exposures based on the mark-to-market value of the portfolio of interest rate swaps

Re-funding and repricing risk

Farmer Mac is subject to re-funding and repricing risk on any floating rate assets that are not funded to contractual maturity. Re-funding and repricing risk arises from potential changes in funding costs resulting from a funding strategy whereby Farmer Mac issues floating rate debt across a variety of maturities to fund floating rate or synthetically floating rate assets that on average may have longer maturities. Changes in Farmer Mac's funding costs relative to the benchmark market index rate to which the assets are indexed can cause changes to net interest income when debt matures and is reissued at then current interest rates to continue funding those assets.

Farmer Mac is 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 floating rate assets that require floating rate funding.

Farmer Mac can meet floating rate funding needs in several ways, including:

- issuing short-term fixed rate 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, fixed rate discount notes or medium-term notes swapped to floating rate to match the interest rate reset dates of the assets.

To meet certain floating rate funding needs, Farmer Mac frequently issues shorter-term floating-rate medium-term notes or fixed rate medium-term notes paired with a received-fixed interest rate swap because these funding alternatives 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 debt issuance and liquidity management strategies.

However, if the funding cost of Farmer Mac’s discount notes or medium-term notes increased relative to the benchmark market index of the associated assets 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 of net effective spread. Conversely, if the funding cost on Farmer Mac’s discount notes or medium-term notes decreased relative to the benchmark market index during that time, Farmer Mac would benefit from a commensurate increase to net effective spread.

Farmer Mac's debt 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. Farmer Mac regularly adjusts its funding strategies to mitigate the effects of interest rate variability and seeks to maintain an effective mixture of funding structures in the context of its overall liability and liquidity management strategies.

As of September 30, 2022, Farmer Mac held $6.2 billion of floating rate assets in its lines of business and its investment portfolio that reset based on floating rate market indices, such as LIBOR or SOFR. As of the same date, Farmer Mac also had $8.7 billion of interest rate swaps outstanding where Farmer Mac pays a fixed rate of interest and receives a floating rate of interest, primarily LIBOR or SOFR.

Discontinuation of LIBOR

As described in "Risk Factors—Market Risk" in Part I, Item 1A of the 2021 Annual Report, 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. Farmer Mac is 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, 2022, Farmer Mac held $2.9 billion of floating rate assets in its lines of business and its investment portfolio, had issued $0.3 billion of floating rate debt, and had entered into $11.1 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 alternative benchmark interest rate indices 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 rate indices. The transition may also result in different financial performance for existing transactions, require different hedging strategies, or require renegotiation of existing transactions. As of September 30, 2022, we had $1.2 billion outstanding in medium-term notes based on SOFR, a potential alternative benchmark interest rate index.

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 and investment securities. Farmer Mac regularly accesses the debt capital markets for funding, and Farmer Mac has maintained steady access to the debt capital markets throughout third quarter 2022. 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 debt capital markets. As of September 30, 2022, Farmer Mac had outstanding discount notes of $0.9 billion, medium-term notes that mature within one year of $6.5 billion, and medium-term notes that mature after one year of $16.7 billion.

Assuming continued access to the debt 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 has a contingency funding plan to manage unanticipated disruptions in its access to the debt capital markets. Farmer Mac must maintain a minimum of 90 days of liquidity under the Liquidity and Investment Regulations prescribed for Farmer Mac by FCA. In accordance with the methodology for calculating available days of liquidity under those regulations, Farmer Mac maintained a monthly average of 351 days of liquidity during third quarter 2022 and had 355 days of liquidity as of September 30, 2022.

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, 2022 and December 31, 2021:

Table 32

	As of September 30, 2022	As of December 31, 2021
	(in thousands)	
Cash and cash equivalents	$ 868,234	$ 908,785
Investment securities:		
Guaranteed by U.S. Government and its agencies	1,497,866	1,579,452
Guaranteed by GSEs	2,929,802	2,282,655
Asset-backed securities	19,243	19,254
Total	$ 5,315,145	$ 4,790,146

The objectives of the investment portfolio as of September 30, 2022 and December 31, 2021 are to provide a level of liquidity that mitigates enterprise risk, provides a reliable source of short-term and long-term liquidity, to prepare for the possibility of future volatility in the debt capital markets, and to support program asset growth.

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, 2022, Farmer Mac was in compliance with its statutory capital requirements and was classified as within "level 1" (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, 2022 and December 31, 2021, Farmer Mac's Tier 1 capital ratio was 14.9% and 14.8%, respectively. As of September 30, 2022, 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 2021 Annual Report. See Note 8 to the consolidated financial statements for more information about Farmer Mac's capital position.

Other Matters

None.

Supplemental Information

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

Table 33

New Business Volume

	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
			(in thousands)		
For the quarter ended:					
September 30, 2022	$ 1,927,209	$ 169,932	$ 547,117	$ 61,653	$ 2,705,911
June 30, 2022	1,418,397	107,916	326,899	35,307	1,888,519
March 31, 2022	2,452,539	103,353	377,965	41,636	2,975,493
December 31, 2021	2,075,540	411,838	631,338	12,594	3,131,310
September 30, 2021	1,791,662	122,043	609,745	4,152	2,527,602
June 30, 2021	925,950	159,958	410,666	3,441	1,500,015
March 31, 2021	1,087,897	186,393	171,546	23,484	1,469,320
December 31, 2020	907,316	242,394	145,416	44,313	1,339,439
September 30, 2020	1,059,891	212,829	52,300	10,000	1,335,020
For the year ended:					
December 31, 2021	$ 5,881,049	$ 880,232	$ 1,823,295	$ 43,671	$ 8,628,247
December 31, 2020	3,805,600	899,372	949,250	64,313	5,718,535

Table 34

Repayments of Assets					
	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
			(in thousands)		
For the quarter ended:					
Scheduled	$ 724,580	$ 38,018	$ 422,917	$ 13,429	$ 1,198,944
Unscheduled	296,763	64,439	—	—	361,202
September 30, 2022	$ 1,021,343	$ 102,457	$ 422,917	$ 13,429	$ 1,560,146
Scheduled	$ 1,114,779	$ 42,162	$ 159,491	$ 7,898	$ 1,324,330
Unscheduled	286,303	30,203	1,791	—	318,297
June 30, 2022	$ 1,401,082	$ 72,365	$ 161,282	$ 7,898	$ 1,642,627
Scheduled	$ 1,535,369	$ 39,480	$ 266,349	$ 7,790	$ 1,848,988
Unscheduled	434,794	60,947	397	—	496,138
March 31, 2022	$ 1,970,163	$ 100,427	$ 266,746	$ 7,790	$ 2,345,126
Scheduled	$ 928,663	$ 205,778	$ 816,802	$ 18,526	$ 1,969,769
Unscheduled	318,024	48,042	—	—	366,066
December 31, 2021	$ 1,246,687	$ 253,820	$ 816,802	$ 18,526	$ 2,335,835
Scheduled	$ 725,713	$ 406,285	$ 95,443	$ 4,043	$ 1,231,484
Unscheduled	374,287	—	201	—	374,488
September 30, 2021	$ 1,100,000	$ 406,285	$ 95,644	$ 4,043	$ 1,605,972
Scheduled	$ 380,684	$ 139,774	$ 225,257	$ 4,704	$ 750,419
Unscheduled	409,393	3,921	1,652	—	414,966
June 30, 2021	$ 790,077	$ 143,695	$ 226,909	$ 4,704	$ 1,165,385
Scheduled	$ 721,090	$ 120,621	$ 100,482	$ 2,671	$ 944,864
Unscheduled	501,651	82,090	2,279	—	586,020
March 31, 2021	$ 1,222,741	$ 202,711	$ 102,761	$ 2,671	$ 1,530,884
Scheduled	$ 365,732	$ 197,108	$ 405,597	$ 561	$ 968,998
Unscheduled	400,809	27,850	1,610	—	430,269
December 31, 2020	$ 766,541	$ 224,958	$ 407,207	$ 561	$ 1,399,267
Scheduled	$ 569,820	$ 74,038	$ 211,152	$ 279	$ 855,289
Unscheduled	531,062	1,489	—	—	532,551
September 30, 2020	$ 1,100,882	$ 75,527	$ 211,152	$ 279	$ 1,387,840
For the year ended:					
Scheduled	$ 2,756,150	$ 872,458	$ 1,237,984	$ 29,944	$ 4,896,536
Unscheduled	1,603,355	134,053	4,132	—	1,741,540
December 31, 2021	$ 4,359,505	$ 1,006,511	$ 1,242,116	$ 29,944	$ 6,638,076
Scheduled	$ 1,779,761	$ 475,464	$ 849,924	$ 1,080	$ 3,106,229
Unscheduled	1,706,849	88,394	5,545	—	1,800,788
December 31, 2020	$ 3,486,610	$ 563,858	$ 855,469	$ 1,080	$ 4,907,017

Table 35

Outstanding Business Volume

	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
			(in thousands)		
As of:					
September 30, 2022	$ 17,199,347	$ 1,634,786	$ 6,296,263	$ 196,242	$ 25,326,638
June 30, 2022	16,591,999	1,567,311	6,172,063	148,018	24,479,391
March 31, 2022	16,575,595	1,540,760	6,006,446	120,609	24,243,410
December 31, 2021	16,094,639	1,537,834	5,895,227	86,763	23,614,463
September 30, 2021	15,565,589	1,379,816	6,080,691	92,695	23,118,791
June 30, 2021	14,873,926	1,664,059	5,566,591	92,585	22,197,161
March 31, 2021	14,738,052	1,647,796	5,382,835	93,848	21,862,531
December 31, 2020	14,872,894	1,664,115	5,314,051	73,035	21,924,095
September 30, 2020	14,737,485	1,646,679	5,575,841	29,283	21,989,288

Table 36

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, 2022	$ 13,810,162	$ 2,960,596	$ 4,644,958	$ 21,415,716
June 30, 2022	13,798,771	2,939,467	3,993,956	20,732,194
March 31, 2022	14,174,611	2,858,521	3,443,816	20,476,948
December 31, 2021	13,228,675	2,896,014	3,695,269	19,819,958
September 30, 2021	12,921,572	2,872,499	3,818,550	19,612,621
June 30, 2021	11,800,429	2,878,637	4,254,625	18,933,691
March 31, 2021	11,454,321	2,824,551	4,410,661	18,689,533
December 31, 2020	11,330,414	2,816,840	4,511,964	18,659,218
September 30, 2020	10,879,372	2,811,547	5,013,640	18,704,559

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

Table 37

	Net Effective Spread[1]													
	Agricultural Finance				Rural Infrastructure Finance				Treasury					
	Farm & Ranch		Corporate AgFinance		Rural Utilities		Renewable Energy		Funding		Investments		Net Effective Spread	
	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield	Dollars	Yield
	(dollars in thousands)													
For the quarter ended:														
September 30, 2022[2]	$33,343	1.04 %	$ 7,600	1.99 %	$ 4,220	0.30 %	$ 705	1.97 %	$22,564	0.36 %	$(2,791)	(0.21)%	$65,641	1.03 %
June 30, 2022	32,590	1.05 %	6,929	1.87 %	3,733	0.27 %	468	1.78 %	18,508	0.30 %	(1,282)	(0.10)%	60,946	0.99 %
March 31, 2022	30,354	1.02 %	7,209	1.96 %	3,159	0.23 %	375	1.69 %	16,738	0.28 %	4	— %	57,839	0.97 %
December 31, 2021	28,998	0.99 %	6,321	1.84 %	2,521	0.19 %	356	1.53 %	15,979	0.28 %	158	0.01 %	54,333	0.94 %
September 30, 2021[2]	28,914	1.06 %	7,163	1.80 %	2,067	0.16 %	236	1.09 %	17,386	0.31 %	159	0.01 %	55,925	0.99 %
June 30, 2021	29,163	1.06 %	6,676	1.65 %	1,759	0.14 %	378	1.80 %	18,449	0.33 %	126	0.01 %	56,551	1.01 %
March 31, 2021	26,461	0.98 %	6,921	1.67 %	1,720	0.14 %	249	1.28 %	18,394	0.33 %	114	0.01 %	53,859	0.97 %
December 31, 2020	25,596	0.95 %	6,237	1.53 %	1,838	0.15 %	123	1.20 %	20,585	0.37 %	143	0.01 %	54,522	0.98 %
September 30, 2020	23,735	0.89 %	5,786	1.45 %	2,022	0.16 %	75	1.19 %	20,034	0.37 %	150	0.01 %	51,802	0.96 %

(1) Farmer Mac excludes the Corporate segment in the presentation above because the segment does not have any interest-earning assets.

(2) See Note 10 to the consolidated financial statements for a reconciliation of GAAP net interest income by segment to net effective spread by segment for the three months ended September 30, 2022 and 2021.

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

Table 38

	Core Earnings by Quarter End								
	September 2022	June 2022	March 2022	December 2021	September 2021	June 2021	March 2021	December 2020	September 2020
	(in thousands)								
Revenues:									
Net effective spread	$ 65,641	$ 60,946	$ 57,839	$ 54,333	$ 55,925	$ 56,551	$ 53,859	$ 54,522	$ 51,802
Guarantee and commitment fees	4,201	4,709	4,557	4,637	4,322	4,334	4,240	4,652	4,659
Gain on sale of mortgage loans	—	—	—	6,539	—	—	—	—	—
Other	473	307	514	241	687	301	451	512	453
Total revenues	70,315	65,962	62,910	65,750	60,934	61,186	58,550	59,686	56,914
Credit related expense/(income):									
Provision for/(release of) losses	450	(1,535)	(54)	(1,428)	255	(983)	(31)	2,973	1,200
REO operating expenses		—	—	—	—	—	—	—	—
Losses on sale of REO		—	—	—	—	—	—	22	—
Total credit related expense/(income)	450	(1,535)	(54)	(1,428)	255	(983)	(31)	2,995	1,200
Operating expenses:									
Compensation and employee benefits	11,648	11,715	13,298	11,246	10,027	9,779	11,795	9,497	8,791
General and administrative	6,919	7,520	7,278	8,492	6,330	6,349	6,336	6,274	5,044
Regulatory fees	812	813	812	812	750	750	750	750	725
Total operating expenses	19,379	20,048	21,388	20,550	17,107	16,878	18,881	16,521	14,560
Net earnings	50,486	47,449	41,576	46,628	43,572	45,291	39,700	40,170	41,154
Income tax expense	10,303	9,909	9,024	9,809	9,152	9,463	8,520	8,470	8,297
Preferred stock dividends	6,791	6,792	6,791	6,792	6,774	5,842	5,269	5,269	5,166
Core earnings	$ 33,392	$ 30,748	$ 25,761	$ 30,027	$ 27,646	$ 29,986	$ 25,911	$ 26,431	$ 27,691
Reconciling items:									
Gains/(losses) on undesignated financial derivatives due to fair value changes	$ 6,441	$ 2,846	$ 2,612	$ (1,242)	$ (405)	$ (3,020)	$ 3,236	$ (3,005)	$ (4,286)
(Losses)/gains on hedging activities due to fair value changes	(624)	428	5,687	(2,079)	1,818	(5,866)	4,317	7,954	1,562
Unrealized (losses)/gains on trading assets	(757)	(285)	94	(76)	36	(61)	(14)	223	(258)
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	24	(62)	20	71	23	20	16	(77)	97
Net effects of terminations or net settlements on financial derivatives	(3,522)	2,536	15,512	(429)	(351)	109	1,165	1,583	233
Issuance costs on the retirement of preferred stock	—	—	—	—	—	—	—	—	(1,667)
Income tax effect related to reconciling items	(327)	(1,148)	(5,024)	789	(236)	1,852	(1,831)	(1,403)	556
Net income attributable to common stockholders	$ 34,627	$ 35,063	$ 44,662	$ 27,061	$ 28,531	$ 23,020	$ 32,800	$ 31,706	$ 23,928

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, 2022.

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, 2022.

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, 2022 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

Information about risk factors can be found in “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Forward-Looking Statements” in Part I, Item 2 of this Form 10-Q and in Part I, Item 1A of Farmer Mac’s 2021 Annual Report.

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 2022, 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 496 shares of its Class C non-voting common stock in July 2022 to the six 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 $97.65 per share, which was the closing price of the Class C non-voting common stock on June 30, 2022 (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 (includes correction to CEO's authority to appoint Treasurer compared to version previously filed as Exhibit 3.1 to Form 8-K filed August 17, 2022).
*	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 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).
*	4.4.1	—	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).
*	4.5	—	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).
*	4.5.1	—	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).
*	4.6	—	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).
*	4.6.1	—	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).
*	4.7	—	Specimen Certificate for 5.250% Non-Cumulative Preferred Stock, Series F (Previously filed as Exhibit 4.8 to Form 10-Q filed November 9, 2020).
*	4.7.1	—	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).
*	4.8		Specimen Certificate for 4.875% Non-Cumulative Preferred Stock, Series G (Previously filed as Exhibit 4.8 to Form 10-Q filed August 5, 2021).
*	4.8.1		Certificate of Designation of Terms and Conditions of 4.875% Non-Cumulative Preferred Stock, Series G (Previously filed as Exhibit 4.1 to Form 8-A filed May 27, 2021).
*	4.9	—	Description of the Registrant's securities that are registered under Section 12 of the Securities Exchange Act of 1934 (Previously filed as Exhibit 4.9 to Form 10-Q filed August 5, 2021).
*	10.1		First Amendment to Amended Employment Agreement dated as of September 28, 2022 between Bradford T. Nordholm and the Registrant (Previously filed as Exhibit 10.1 to Form 8-K filed October 4, 2022
**	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, 2022, 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, 2022, 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 year ended September 30, 2022, 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 7, 2022
By: Bradford T. Nordholm President and Chief Executive Officer (Principal Executive Officer)	
/s/ Aparna Ramesh	November 7, 2022
By: Aparna Ramesh Executive Vice President – Chief Financial Officer and Treasurer (Principal Financial Officer)	