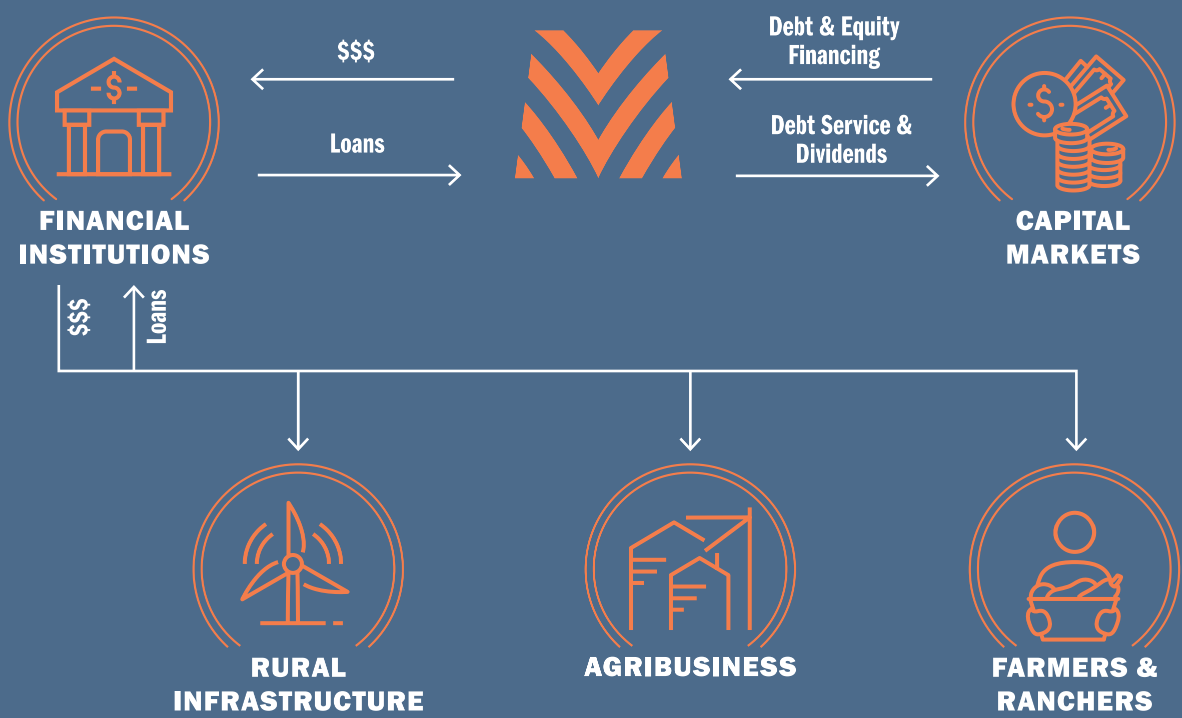
FARMER MAC

Strong Foundations, Steady Growth

2021 ANNUAL REPORT

Farmer Mac Financial Ecosystem



Who We Are

Farmer Mac is the secondary market for U.S. agricultural and rural infrastructure credit and has been a champion for and an integral part of this nation's rural economy for over 30 years. Guided by our mission—**to help build a strong and vital rural America by increasing the availability and affordability of credit for the benefit of American agriculture and rural communities**—we provide lenders access to flexible, competitive financing and effective risk management tools to help their farm, ranch, and rural utilities customers.

LETTER FROM OUR CEO AND CHAIR

BRADFORD T. NORDHOLM
President and
Chief Executive Officer

LOWELL L. JUNKINS
Board Chair

OUR COMMITMENT TO THE BETTERMENT OF RURAL AMERICA

In the last several annual reports, we've discussed how Farmer Mac's Board of Directors, management team, and employees have been united in our work of building strong foundations to better facilitate future growth: growth for our organization, for the reach and value of our mission, and for the durability and vibrancy of America's agricultural economy and rural communities. In 2021, we continued to build on and expand those foundations and achieved financial success that we will reinvest into further mission-focused growth.

Our efforts have been centered around three key areas of focus that are imperative to our strength as a company. **We are focused on our vitally important mission:** to help build a strong and vital rural America by increasing the availability and affordability of credit for the benefit of American agriculture and rural communities. **We are focused on our people**, the passionate and talented team that brings our strategic vision to life. And **we are focused on our financial performance** because financial strength and responsible capital management are vital to our continued success in fulfilling our mission and delivering long-term value to our stockholders.

As a company, we are united in and powered by our mission. Farmer Mac's mission is our competitive advantage that helps cultivate a passionate and focused workforce that is committed to delivering the access to affordable credit that rural America deserves. We are driven by the tangible benefits we see our work bring to our rural economies and the food, fiber, and agribusiness sectors; to farmers and ranchers; and to America's rural communities and the businesses, utilities, and rural infrastructure that supports them. Most of all, we see the value that our mission-focused work brings to our customers—America's lending institutions—to whom we are deeply committed.

Our mission is our guiding star, and we are constantly working to find ways to deepen its value and expand its reach to more corners of rural America than ever before. We are guided in this pursuit by our strategic vision, which calls us to **broaden** our reach—finding new customers by offering new products while exploring new sectors—while **deepening** the value we offer to everyone who transacts with us by improving the customer experience through enhanced products, platforms, and processes.

Our mission is our guiding star, and we are constantly working to find ways to deepen its value and expand its reach to more corners of rural America than ever before.

Through 2021, we continued to build strong foundations and we achieved strong results for our organization. We did so while continuing to operate with full efficiency in a hybrid environment, underscoring the importance of our investments in technology that connect our systems and our people. Though the pandemic has continued to be a disruptive and unpredictable force, planning for uncertainty is a fact of life in agriculture, and we have seen the continued strength and resiliency of rural America. However, we are seeing ongoing issues and disruptions with America's supply chains that highlight an important area of focus for our company: broadening the reach of how our mission can provide support along the farm-to-fork value chain.

In this letter, we will reflect on our financial results for 2021; we will share how we've achieved these results and continued to build the foundations for safe and sound growth; and we will explain how we will follow our strategic vision to build on those foundations, broaden and deepen the reach of our mission, and deliver even more exciting developments in the future.

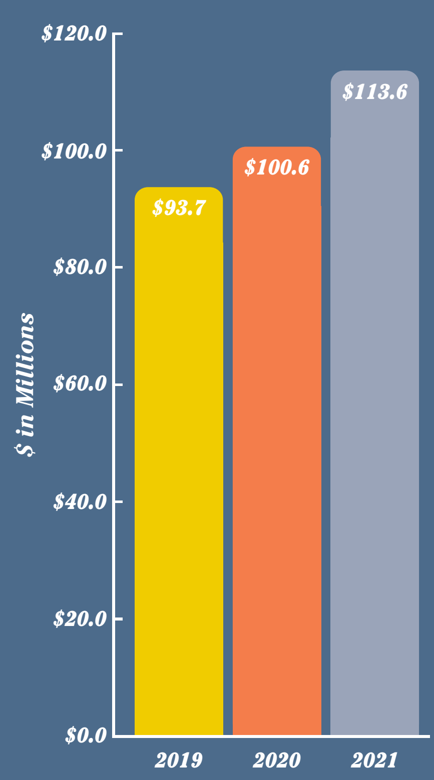
FINANCIAL RESULTS

Our focus on our strategic vision and continued investment in people and technology resulted in a record 2021. We provided a gross $8.6 billion in liquidity and lending capacity to lenders serving rural America last year, which resulted in outstanding business volume of $23.6 billion at year-end. We generated double-digit year-over-year growth in both total revenues and non-GAAP core earnings, which ended the year at $246.4 million and $113.6 million, respectively. Most importantly and fundamentally, our portfolio remains strong and credit performance continues to be stable.

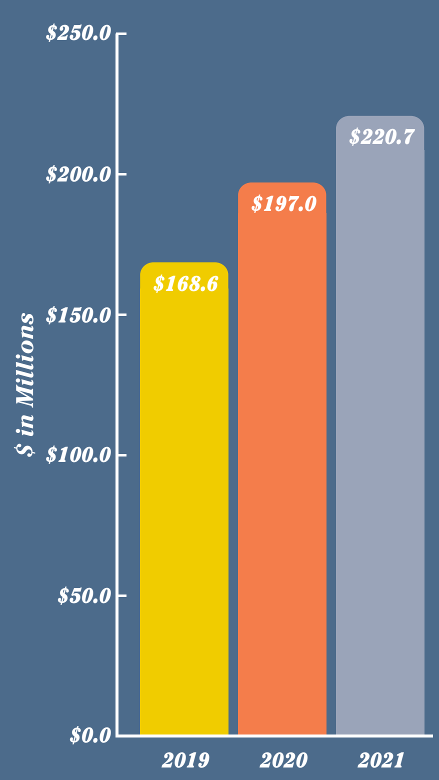
Net effective spread (a non-GAAP measure) was $220.7 million in 2021, a 12% improvement from the prior year, primarily due to the shift to higher-earning assets and continued competitive execution on debt funding with disciplined asset-liability management. As we prepare for a steepening yield curve, we are carefully analyzing our duration and convexity to minimize our interest rate risk as rates rise. Our inaugural FARM securitization transaction, which closed in October 2021, has provided us with an opportunity to diversify long-term funding sources, reduce credit exposures, and optimize capital usage. The successful execution of this transaction expands our investor base, allowing us to optimize our funding strategy when faced with widening issuances for longer-term assets. This disciplined approach of managing our portfolio duration and convexity should allow us to achieve consistent performance in our net effective spread in both rising and falling rate environments.

We remain well-capitalized with capital ratios in excess of regulatory minimums. We opportunistically issued $125 million of Series G preferred stock in

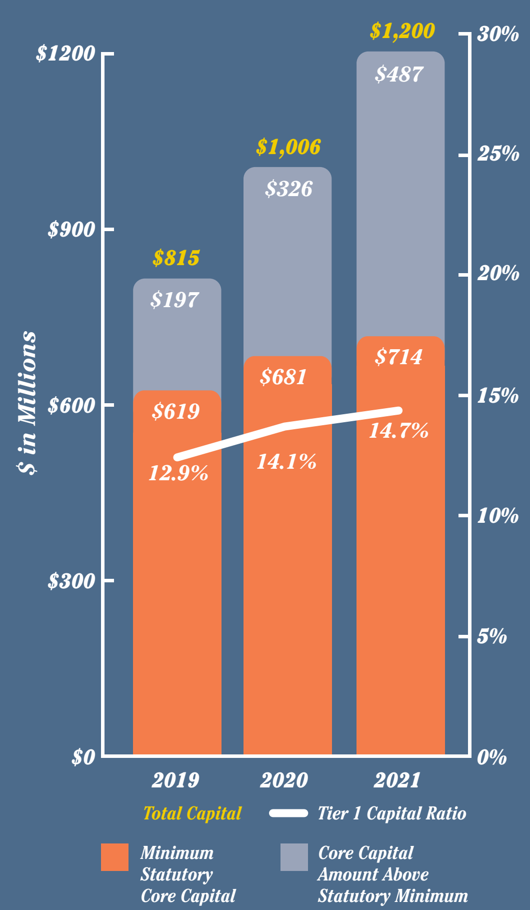
CORE EARNINGS*



NET EFFECTIVE SPREAD*



ENHANCED CAPITAL POSITION**



* *Core earnings and net effective spread are non-GAAP measures. For a reconciliation of core earnings to GAAP net income and net effective spread to GAAP net interest income, please refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations."*

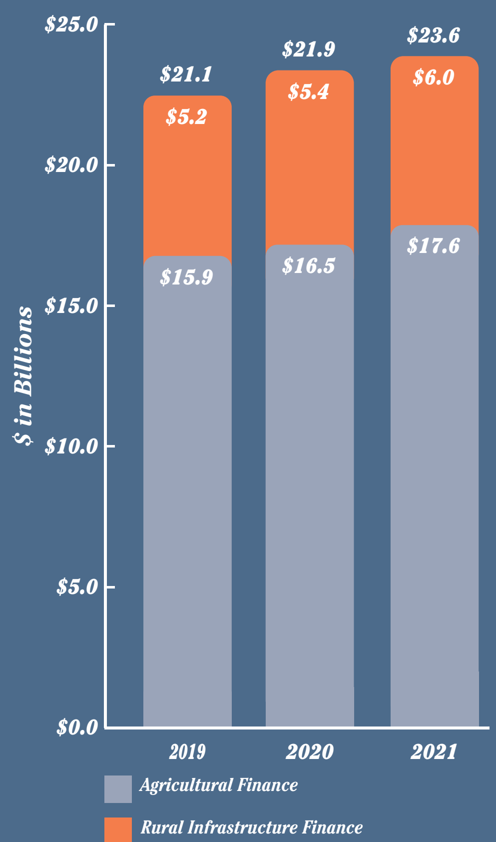
the second quarter of 2021, further enhancing our capital position and positioning us well for an inflationary environment. The capital efficiency of our securitization transaction improved our Tier 1 capital position, reducing the need in the immediate future for preferred stock issuances.

Our continued strong financial performance, well-capitalized position, and positive outlook on the long-term growth of our business allowed us to increase our quarterly dividend once again. We raised our quarterly dividend to $0.95 per share of common stock in 2022, which reflects the eleventh consecutive year with consistent dividend growth.

As we expand and scale our company, the transparency and utility of our disclosures must align. This year, we introduced a realignment of our lines of business and operating segments, which we believe will make it easier for all of our stakeholders to digest and evaluate our results across these segments. We have consolidated our reporting from four lines of business to two—Agricultural Finance and Rural Infrastructure Finance—with seven operating sub-segments. These lines of business reflect how we are managing, evaluating, and serving our business based on type of customer and market rather than according to the type of product offerings. We believe the simplified reporting format will more clearly present the distinct contributions of our operating segments and how they drive value for the overall company.

We are very proud of our 2021 results and encouraged by the successes of our recent initiatives. Even during times of uncertainty, we believe that Farmer Mac can provide more liquidity and capital, produce consistent earnings results, and deliver long-term value for all of our stakeholders, including farmers, ranchers, rural communities, employees, and shareholders.

OUTSTANDING BUSINESS VOLUME**



** *Charts may not sum to total due to rounding*

QUARTERLY DIVIDENDS

BUILDING FOUNDATIONS FOR GROWTH

Our strategic vision calls for consistent and accretive growth for our company, so we are not only focused on delivering strong year-over-year performance but also investing in initiatives that will serve as strong foundations for future growth. We worked on building and expanding several of these initiatives throughout 2021 and will continue to do so in the years to come.

These initiatives are focused on three main areas: (1) continuing to implement and strengthen a powerful suite of process, product, and platform improvements; (2) continuing to focus on our people, attracting and developing talent while ensuring our departments are appropriately aligned to carry out our strategic vision; and (3) engaging in other innovative investments, including expanding our offerings and entering into a strategic alliance.

Our digital transformation journey isn't just about strengthening our operational efficiencies to better serve our customers; it's also about continuing to be an efficient and interconnected organization.

PROCESS, PRODUCT, AND PLATFORM IMPROVEMENTS

One way that we are focused on deepening our business is through a series of process, product, and platform improvements, which we refer to collectively as our "Great Reimagined" journey. This enterprise-wide initiative is aimed at both internal improvements—connecting and streamlining our platforms and processes—and external improvements, with the goal of significantly elevating the customer experience and making it faster, easier, and cheaper to transact with us.

A major component of Great Reimagined is our digital transformation journey, which includes activities devoted to digitization (e.g., moving data from physical to digital storage) and digitalization (e.g., leveraging digital information to improve processes). True digital transformation takes this even further, using analytics and technology to drive internal and external improvements in business processes and products that would be impossible to replicate manually. Digital transformation does not describe a fixed destination; it is an ongoing journey, which requires continuous investment to keep pace not only with technological progress, but with our customers' expectations to be able to transact quickly, easily, on their own time, and with the resources they need at their fingertips.

Farmer Mac has already created a robust base of digitization, and we are making measured progress towards true digital transformation. In 2021, that included launching an intuitive online application for our popular Farm & Ranch scorecard product, AgXpress. Our digital transformation journey isn't just about strengthening our operational efficiencies to better serve our customers; it's also about continuing to be an efficient and interconnected organization. We're therefore continuing to bolster our enterprise efficiency, connecting our systems and building pathways enterprise-wide to make our procedures more effective and efficient. We are committed to continuing to build a strong foundation and making steady progress on our digital transformation journey in the years to come.

Our Great Reimagined Journey

Our ongoing Great Reimagined journey represents all of the process and system improvements we're implementing to strengthen our organizational connectivity and to significantly elevate our customers' experience when they transact with us. The initiative is a major driver of our "deepen" strategy, which guides us to continuously make our financial solutions more accessible to our customers while leveraging the power of analytics and implementing helpful tools that are only possible by having our origination and servicing platforms online.

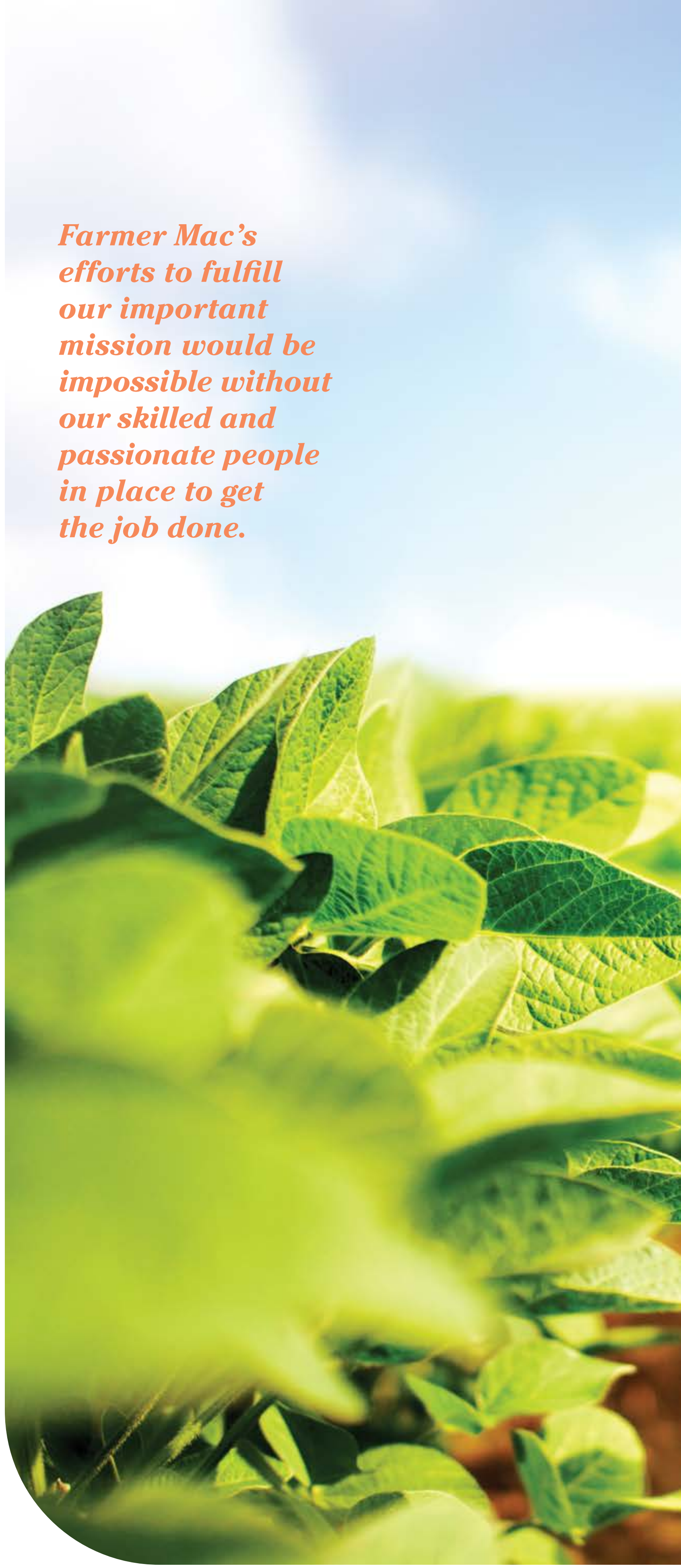
We have also continued to progress in our Great Reimagined journey, helping to make Farmer Mac more effective, efficient, and easier to work with. One major step forward was launching a new online pathway for AgXpress, our premier loan scorecard product, which includes innovative new features including an automated rate lock feature that allows AgXpress customers to lock in a rate with the simple click of a button. We are continuing to devote time and resources towards all our Great Reimagined initiatives to develop more system and product improvements that will further elevate our customers' experience, our efficiency, and the strength of the valuable products we offer.

GROWING OUR TALENTED TEAM

Ensuring the strength of our talented team is fundamental to our efforts to broaden and deepen the business. Farmer Mac's efforts to fulfill our important mission would be impossible without our skilled and passionate people in place to get the job done.

We've been growing our team with individuals with new ideas and strong backgrounds in areas we're targeting for growth. We grew by approximately 26%, to 153 employees, in 2021, with a notable portion of that growth coming in the form of acquiring a talented team of servicers, enabling us to quickly implement our expanded servicing function with no interruption of service to our customers.

Our focus on our people doesn't end at having a talented team in place and guiding their work towards our strategic vision—it's also vital that we support and incentivize our workforce. In addition to initiatives related to talent development, a major way that we nurture our employees and create a productive workplace comes in the form of our continued commitment to diversity, equity, and inclusion ("DEI") to maintain and enhance a corporate culture where all employees belong and can bring their best selves to work. This initiative saw a meaningful step forward in 2021 with the first regular meetings of our inaugural DEI Council, which is currently focused on building out a strategic DEI plan for our company.



Our Commitment to Diversity, Equity, and Inclusion

Our successes wouldn't be possible without a knowledgeable, well-equipped, and passionate team of people who make up our Board, management, and employees. To that extent, it is vital that we invest in our team, nourishing and supporting them. A huge part of that is fostering and maintaining a culture of inclusion where a diversity of ideas and a diversity of people can all flourish.

Celebrating our diversity and ensuring a comfortable work environment helps our talented team to flourish and innovate. And strengthening our talent acquisition, selection, and retention processes and ensuring transparent tracking, monitoring, and communication of our processes is integral to the council's goals. Externally, it is important that we ensure there is equitable access to Farmer Mac's products and solutions, including for small farms and family farmers. These goals are closely tied to our mission, as shown in our DEI vision statement:

"At Farmer Mac, we each share a passion for our mission, connecting rural Americans with the affordable financing they deserve. It is that shared commitment to our mission and rural America that drives us to innovate, collaborate, and bring our whole selves to work. Cultivating a diverse, inclusive, and equitable workplace ensures that every employee feels valued, supported, and empowered to give it their all. It's the best way we can support America's agriculture and rural communities—and it's the right thing to do."

OTHER WAYS WE'RE BUILDING FOR THE FUTURE

As we've discussed, 2021 was a year of building foundations for growth. Our Great Reimagined and digital transformation journey will continue to help us make it faster, easier, and more affordable to transact with Farmer Mac. And we will continue to work to cultivate a skilled and driven employee base to bring our plans to fruition. But these initiatives are far from the only foundational steps we're taking for our future and for the future of rural America. We've also made significant and exciting progress in other projects that we expect to build on and continue to grow in the years to come.

We **expanded our internal servicing function** and now service a sizeable portion of our Farm & Ranch portfolio internally. This move gives us better oversight of and insight into our network of servicers and will ultimately help us to standardize the loan servicing process. We were able to quickly implement this function with no interruption in service by forming a new operations department and through a strategic acquisition that put in place a knowledgeable servicing staff whom our customers already know and trust.

We **entered into a strategic alliance** with Ag-Analytics and helped support Ag-Analytics' acquisition of the industry's premier farmland information and evaluation platform, AcreValue. We expect this alliance to help harness farm data and analytics in more active and innovative ways in the years to come.

As discussed in the Financial Results section, we also completed a newly-designed structured agricultural mortgage-backed **securitization** transaction, which you can read more about on page 13. Securitizations offer an opportunity to help diversify our funding sources and can provide increased capital efficiencies. In the future, we expect that issuing more multi-tranche, credit-released securities backed by agricultural mortgages will lead to a more effective and lower cost of capital for Farmer Mac. The securitization effort also increases investor knowledge and familiarity with a very strong asset class, helping to more closely connect American farmers and ranchers with investors around the globe.

We expanded our internal servicing function and now service a sizeable portion of our Farm & Ranch portfolio internally. This move gives us better oversight of and insight into our network of servicers and will ultimately help us to standardize the loan servicing process.

A New Alliance with Ag-Analytics

In 2021, we embarked on a new strategic alliance with Ag-Analytics, a leading farmland data technology software provider, and assisted in their acquisition of AcreValue, a premier farmland information and evaluation platform. This acquisition will help connect farmers and landowners with powerful analytics, and we expect to see it drive considerable positive changes in rural America.

As part of this alliance, Farmer Mac now has the opportunity to integrate the powerful analytics of AcreValue/Ag-Analytics to combine collateral mapping tools with advanced automated valuation modeling to better understand, predict, and value collateral from the dirt up.

We are excited to use this foundation to work towards a future where we can use remote data to analyze and predict environmentally sustainable practices on-farm, something that ultimately benefits everyone in America by protecting the health and vitality of our arable land. We believe that the tremendous power of analytics will continue to drive new benefits for Farmer Mac, for our customers, and for their borrowers in the years to come.

Investing in Servicing

One of our major initiatives in 2021 was the expansion of our internal loan servicing function through a strategic acquisition of servicing rights for a portion of our Farm & Ranch and USDA Guaranteed loans from one of the third-party “Central Servicers” that has traditionally serviced Farmer Mac loans.

We determined that taking this step forward now and becoming a Central Servicer gives us the unique opportunity for enhanced oversight of our Central Servicer network, provides more insight into how we can provide an elevated experience to our customers, and better supports our growth as we broaden into new markets and lines of business.

We were able to quickly implement this function with no disruption to our customers, largely due to the acquisition of a talented team of servicers that are familiar with our loans and our customers. This initiative is therefore emblematic of most of our core areas of focus in 2021, and also represents a big step forward in how Farmer Mac will continue to innovate and drive even more value to our customers and to rural America as we carry out our mission.

OUR VISION FOR THE FUTURE

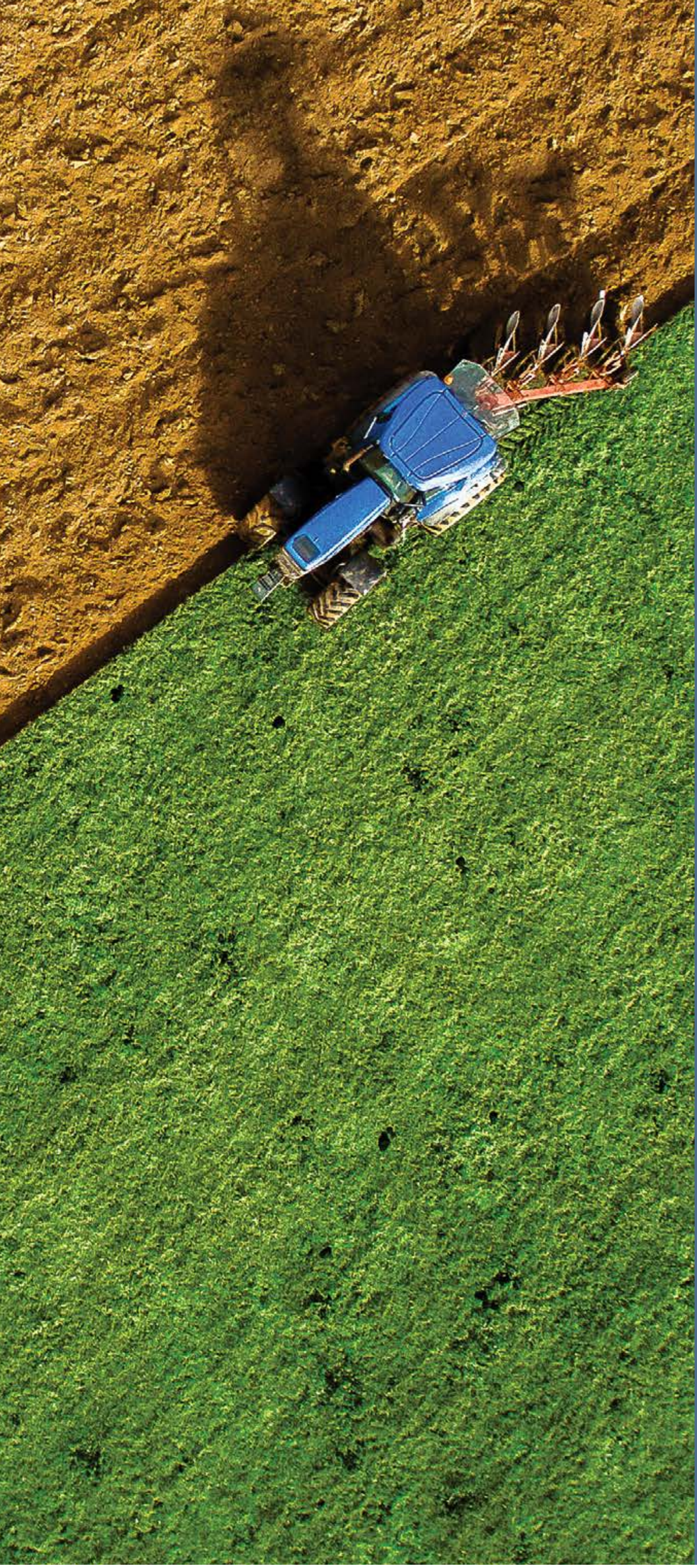
We've explained how the foundations we're building are helping position us to grow safely and soundly. We're guided on this path by our strategic vision, which we dynamically refine each year with the guidance and full endorsement of our Board, always keeping our vitally important mission as our guiding star. Our strategic vision drives us to continuously improve on how we deliver on our mission and provide effective and efficient capital to the sectors we serve.

Our strategic vision drives us to continuously improve on how we deliver on our mission and provide effective and efficient capital to the sectors we serve.

Building strong foundations, continuing to grow, and maintaining a base of strong financial performance are all required components of how we deliver on that vitally important mission. But that's not the end of the story—our vision is not merely to fulfill our mission, but also to **deepen the value it brings** to the lenders, farmers and ranchers, and communities of rural America while we simultaneously **expand its reach** to serve rural America in new ways.

DEEPENING THE VALUE OF OUR MISSION

What does it mean to deepen the positive impact of our mission? It means providing new value to our customers, to whom we will always remain deeply committed. More than 85% of our customers are local community banks, many of which are not merely serving rural agriculture, but which are integral parts of the communities they serve. We plan to continually build upon our process, product, and platform improvements to give them the best possible experience while transacting with us. And through our expanded servicing function, we plan to help standardize our servicing process and drive new efficiencies across our network of servicers to bring even more value to the lenders that rely on Farmer Mac's innovative solutions to attract and retain their borrowers.



Securitizations: An Important Step for Farmer Mac

Farmer Mac's charter gives us the ability to issue securities in the capital markets, which broadens the field of potential investors into rural lending and helps us diversify our funding sources. Historically, nearly all of Farmer Mac's structured securities have been issued as pass-through securities. But as the market for structured securities has evolved, we saw the opportunity to expand our activities. Last year, we issued a unique multi-tranche, credit-released security backed by agricultural mortgages, which was received with considerable interest from investors.

Securities like these increase asset liquidity, diversify investment opportunities, and help illuminate the excellent quality of their underlying assets. All of these benefits accrue to the security issuer, the security investor, and the underlying borrowers through greater market efficiency and transparency. We plan to build upon this momentum and create a more robust market for these innovative securities to increase capital efficiency in the months and years to come.

We also know that these activities, along with maintaining competitive interest rates in our lines of business, serve not only our customers but also their borrowers, who are increasingly seeking access to affordable, long-term financing. Connecting America's farmers and ranchers with the affordable financing they deserve can help drive big, positive impacts in rural America. In fact, we estimate that for every $1 saved by a farmer or rancher, roughly $2 are invested into local businesses, communities, and governments. We continue to take pride in how our mission drives value to small and family farms, which represent nearly 97% of our Farm & Ranch portfolio.

BROADENING THE REACH OF OUR MISSION

2021 demonstrated the urgent importance of a robust supply chain, and we aim to help enhance the ag value chain from the dirt to the doorstep to ensure farmers, ranchers, and agribusinesses stay connected to affordable financing—and to each other.

We always strive for our mission-focused activities to have the greatest possible positive impact in rural communities. But we also want to bring the value of our mission and the secondary market to more markets and sectors in support of American agriculture and rural communities than ever before, and in new and innovative ways.

We're concentrating on expanding our support further along the agricultural value chain. We've increased our focus on providing credit to larger, more complex farming operations and agribusinesses as consolidation and growth in the agriculture sectors continue. 2021 demonstrated the urgent importance of a robust supply chain, and we aim to help enhance the ag value chain from the dirt to the doorstep to ensure farmers, ranchers, and agribusinesses stay connected to affordable financing—and to each other.

One of the newest ways we're focused on serving rural communities is by helping to connect and power them—an activity more important than ever in a world where remote communication and collaboration is increasingly prevalent and expected. We're helping to bridge the digital divide through our rural broadband and telecommunications activities.

We also recognize that investing in renewable energy, a rapidly-evolving sector of the rural economy, is not only a strong step we can take as stewards of our environment, but which can also help ensure access to affordable and reliable electricity for millions of Americans.

CONCLUSION

Together, we will continue working to drive tangible benefits to rural communities and extend the reach and value of our mission.

Our successes in 2021 are an important indication that our strategic vision is well-founded and that we are making significant progress towards our goals. Financial success is also important in that it serves as the basis upon which we can drive future growth and, ultimately, strengthen the impact of our mission. All things considered, we know that a successful year for Farmer Mac is measured in the benefits we deliver to our customers—the lending institutions of rural America—and in the positive change we bring to America's farmers, ranchers, and rural communities.

On behalf of our Board and our management team, we want to express our profound gratitude to everyone at Farmer Mac who made such a strong year possible. Together, we will continue working to drive tangible benefits to rural communities and extend the reach and value of our mission. As always, we are deeply committed to serving as a faithful and consistent partner to rural America. We remain steadfast in our efforts to expand on the strong foundations we're building, and we look forward to delivering even more value and continuing to provide the capital and commitment that these lenders, borrowers, and communities deserve for many years to come.

BRADFORD T. NORDHOLM
President and
Chief Executive Officer

LOWELL L. JUNKINS
Board Chair

EXECUTIVE ROUNDTABLE

BRADFORD T. NORDHOLM
President and Chief Executive Officer

ZACHARY N. CARPENTER
Executive Vice President –
Chief Business Officer

STEPHEN P. MULLERY
Executive Vice President –
General Counsel and Secretary

APARNA RAMESH
Executive Vice President –
Chief Financial Officer

BRIAN M. BRINCH
Senior Vice President –
Enterprise Risk Officer

MARC J. CRADY
Senior Vice President –
Chief Credit Officer

ROBERT J. MAINES
Senior Vice President –
Operations

KERRY T. WILLIE
Senior Vice President –
Chief Human Resources Officer

TODD A. BATTA
Vice President –
Government Affairs

CATHERINE D. BIRR
Chief of Staff

MÁRIO S. MORAIS
Vice President –
Information Technology

BOARD OF DIRECTORS

As of March 31, 2022

LOWELL L. JUNKINS, CHAIR[1]
Political Affairs Consultant
Lowell Junkins & Associates
Montrose, Iowa

LAJUANA S. WILCHER, VICE CHAIR[1]
Owner – Scuffle Hill Farm
Partner – English, Lucas, Priest & Owsley, LLP
Bowling Green, Kentucky

DENNIS L. BRACK[2]
Director
Bath State Bank and Bath State Bancorp
Bath, Indiana

RICHARD H. DAVIDSON[3]
Former Director
AgriBank, FCB
St. Paul, Minnesota

EVERETT M. DOBRINSKI[3]
Former Director
CoBank, ACB
Greenwood Village, Colorado

JAMES R. ENGEBRETSEN[2]
Retired Professor, Finance
Marriott School of Management
Brigham Young University
Provo, Utah

SARA L. FAIVRE[1]
Co-Owner and Advisory Partner
Wild Type Ranch
Cameron, Texas

AMY H. GALES[3]
Former Executive Vice President
CoBank, ACB
Greenwood Village, Colorado

MITCHELL A. JOHNSON[2]
Financial Consultant
Washington, District of Columbia

ERIC T. MCKISSACK[2]
Former CEO
Channing Capital Management, LLC
Chicago, Illinois

ROBERT G. SEXTON[3]
President
Oslo Citrus Growers Association
Vero Beach, Florida

CHARLES A. STONES[1]
Former President
Kansas Bankers Association
Topeka, Kansas

ROY H. TIARKS[3]
Owner
Tiarks Family Farm
Council Bluffs, Iowa

TODD P. WARE[2]
President and Chief Executive Officer
Licking Rural Electrification –
The Energy Cooperative
Newark, Ohio

MYLES J. WATTS[1]
Professor Emeritus, Agricultural Economics
Montana State University
Bozeman, Montana

[1] *Presidential Appointee*
[2] *Director elected by holders of Class A Common Stock*
[3] *Director elected by holders of Class B Common Stock*

CORPORATE INFORMATION

CORPORATE HEADQUARTERS
1999 K Street, N.W.
Fourth Floor
Washington, DC 20006
Phone: 202.872.7700
800.879.3276
Website: www.farmermac.com

STOCK EXCHANGE
Farmer Mac's Class A voting common stock and Class C non-voting common stock trade on the New York Stock Exchange under the symbols AGM.A and AGM, respectively.

ANNUAL MEETING OF STOCKHOLDERS
Thursday, May 19, 2022, 8:00 a.m. EDT
Dial-In: 888.346.2616
Webcast: https://www.farmermac.com/investors/events-presentations/

Formal notice of the meeting, the proxy statement, and the proxy card are being mailed to each stockholder of record entitled to vote at the meeting simultaneously with the mailing of this Annual Report.

TRANSFER AGENT AND REGISTRAR
Continental Stock Transfer & Trust Company
1 State Street
30th Floor
New York, NY 10004
Phone: 212.509.4000
800.509.5586
Website: www.continentalstock.com

CERTIFICATION
Farmer Mac has included as Exhibit 31 to its Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed with the SEC the certifications of the Chief Executive Officer and Chief Financial Officer certifying the quality of Farmer Mac's financial disclosures.

FORM 10-K
Stockholders may obtain, without charge, a copy of Farmer Mac's 2021 Annual Report on Form 10-K, as filed with the SEC on February 28, 2022, from Farmer Mac's website or by contacting Farmer Mac's Secretary at Farmer Mac's Corporate Headquarters.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDED DECEMBER 31, 2021
PricewaterhouseCoopers LLP
655 New York Avenue, N.W.
Washington, DC 20001

As filed with the Securities and Exchange Commission on February 28, 2022

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2021

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

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

Yes ☐ No ☒

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

Yes ☐ No ☒

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

Yes ☒ No ☐

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

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

Yes ☐ No ☒

The aggregate market value of the Class A voting common stock and Class C non-voting common stock held by non-affiliates of the registrant was $966,366,719 as of June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing prices for the respective classes on June 30, 2021 reported by the New York Stock Exchange. For purposes of this information, the outstanding shares of Class A voting common stock and Class C non-voting common stock held by directors, executive officers, and significant stockholders of the registrant, as applicable, as of June 30, 2021 were deemed to be held by affiliates. The aggregate market value of the Class B voting common stock is not ascertainable due to the absence of publicly available quotations or prices for the Class B voting common stock as a result of the limited market for, and infrequency of trades in, Class B voting common stock and the fact that any such trades are privately negotiated transactions.

As of February 7, 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 9,235,578 shares of Class C non-voting common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information contained in the registrant's Proxy Statement for the 2021 Annual Meeting of Stockholders is incorporated herein by reference in Part III of this Annual Report on Form 10-K. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of the registrant's fiscal year to which this report relates.

Auditor Firm ID: 238 Auditor Name: PricewaterhouseCoopers LLP Auditor Location: Washington DC, DC, USA

Table of Contents

FORWARD-LOOKING STATEMENTS

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

Some statements made in this report, such as in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section, are "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 about management's current expectations for Farmer Mac's future financial results, business prospects, and business developments. Forward-looking statements include, without limitation, any statement, including statements about the COVID-19 pandemic and its impact on Farmer Mac, that may predict, forecast, indicate, or imply future results, performance, or achievements. These statements typically include terms such as "anticipates," "believes," "continues," "estimates," "expects," "forecasts," "intends," "outlook," "plans," "potential," "project," "target" and similar terms, and future or conditional tense verbs like "could," "may," "might," "should," "will," and "would." This report includes forward-looking statements addressing Farmer Mac's:

- prospects for earnings;
- prospects for growth in business volume;
- assessment of the 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 this report, as well as uncertainties about:

- the duration, spread, and severity 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;
- the public response to the ongoing COVID-19 pandemic, including the possibility of government actions to mitigate the pandemic and its effects, and any social or economic disruption that may be caused by any new COVID-19 variants or any further outbreaks;
- 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, and volatility in commodity prices;
- the degree to which Farmer Mac is exposed to interest rate risk resulting from fluctuations in Farmer Mac's borrowing costs relative to market indexes;
- developments in the financial markets, including possible investor, analyst, and rating agency reactions to events involving government-sponsored enterprises, including Farmer Mac;
- the effect of any changes in Farmer Mac's executive leadership; and
- other factors that could hinder agricultural mortgage lending or borrower repayment capacity, including the effects of severe weather, climate change, or fluctuations in agricultural real estate values.

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

SUMMARY OF RISK FACTORS

The following summarizes some of the key risks and uncertainties that could materially adversely affect our business, operating results, financial condition, operations, liquidity and capital levels. The following summary does not contain all of the information that may be important to you, and you should review and consider carefully the risks and uncertainties listed in this summary together with the more complete discussion of each risk factor set forth under the heading "Risk Factors" in Item 1A of this report, along with other information in this report and our other filings with the Securities and Exchange Commission. The forward-looking statements discussed above are qualified by these risk factors.

- The continuing effects of the COVID-19 pandemic are uncertain and may heighten the risk factors described in this report.
- Factors outside of Farmer Mac's or borrowers' control may impair borrowers' profitability and ability to repay their loans in Farmer Mac's portfolio.
- Climate change and the occurrence of weather-related events or other natural or environmental disasters could have a material adverse effect on Farmer Mac’s business, operating results, or financial condition.
- Concentrations in Farmer Mac’s loan or investments portfolios, or to one or more borrowers or counterparties, may increase Farmer Mac’s exposure to credit risk.
- Farmer Mac guaranteed securities and purchase commitments expose Farmer Mac to significant contingent liabilities, and Farmer Mac's ability to fulfill its obligations under its guarantees and purchase commitments may be limited.
- Farmer Mac is exposed to counterparty risk on both its cleared and non-cleared swaps transactions.
- External factors may affect the demand for Farmer Mac's secondary market, the price or marketability of Farmer Mac's products, or Farmer Mac's ability to offer its products and services.
- An inability to access the equity and debt capital markets could have a material adverse effect on Farmer Mac's business, operating results, financial condition, liquidity, and capital levels.
- The loss of business from key business counterparties or customers, including AgVantage counterparties, could weaken Farmer Mac’s business and decrease its revenues and profits.
- Farmer Mac's efforts to balance fulfilling its mission with providing a return to its stockholders may result in business transactions that involve lower returns or higher risk.
- A few stockholders who own large amounts of Farmer Mac voting common stock may seek to influence Farmer Mac's business, strategy, or board composition, and the interests of these stockholders may differ from the interests of Farmer Mac or other holders of Farmer Mac's common stock.
- The inadequacy or failure of Farmer Mac's operational systems, cybersecurity program, internal controls or processes, or infrastructure, or those of third parties, could have a material adverse effect on Farmer Mac's business, operating results, or financial condition.
- Farmer Mac’s business depends, in part, on effective and reliable loan servicing, and Farmer Mac’s internal loan servicing function and reliance on third-party servicers could expose Farmer Mac to operational risks.
- Any significant deficiency, failure, interruption, or breach in Farmer Mac's or our service providers’ technology and information systems, infrastructure, or cybersecurity program, including the occurrence of successful cyber-attacks, could result in a loss of business, damage to Farmer Mac's reputation, the disclosure or misuse of confidential or proprietary information, or increased costs or liability to Farmer Mac.

- Failure by Farmer Mac's third-party loan servicers, information systems providers, and other service providers to protect confidential information from unauthorized access and dissemination could result in liability for Farmer Mac or damage Farmer Mac's reputation.
- If Farmer Mac's management of risk associated with its loan assets and investment securities based on model assumptions and output is not effective, its business, operating results, financial condition, or capital levels could be materially adversely affected.
- Farmer Mac's efforts to expand product offerings and services to its customers exposes Farmer Mac to operational risk.
- Farmer Mac is exposed to interest rate risk.
- Changes in interest rates relative to Farmer Mac's management of interest rate risk through derivatives may cause volatility in financial results and capital levels.
- The reform, replacement, or discontinuation of the LIBOR benchmark interest rate could adversely affect Farmer Mac's business, operating results, or financial condition.
- Incorrect estimates and assumptions by management in preparing financial statements, and changes in accounting standards or in applying accounting policies or in the value or composition of Farmer Mac’s investment securities could adversely affect Farmer Mac's business, operating results, reported assets and liabilities, financial condition, reputation, or capital levels.
- The trading price for Farmer Mac's Class C non-voting common stock may be volatile due to market influences, trading volume, the effects of equity awards for Farmer Mac's officers, directors, and employees, or sales of significant amounts of the stock by large holders.
- Farmer Mac and many of its business partners are subject to comprehensive government regulation, and changes to the laws and regulations to which Farmer Mac or its business partners are subject could adversely affect Farmer Mac's business, operating results, reputation, or financial condition.
- Farmer Mac’s capital requirements may change, and failure to meet those requirements could result in supervisory measures or the inability of Farmer Mac to declare dividends.
- Farmer Mac is a government-sponsored enterprise (GSE) that may be materially and adversely affected by legislative or political developments.
- Farmer Mac's ability to attract and retain motivated and qualified employees is critical to the success of its business.

PART I

Item 1. Business

GENERAL

Farmer Mac is a stockholder-owned, federally chartered corporation that combines private capital and public sponsorship to serve a public purpose. Congress has charged Farmer Mac with the mission of providing a secondary market for a variety of loans made to borrowers in rural America. A secondary market is an economic arrangement in which the owners of financial assets, such as the originators of loans, may sell all or part of those assets or pay a fee to offset some or all of the inherent risks of holding the assets. Farmer Mac's secondary market activities include:

- purchasing eligible loans directly from lenders (including participation interests, syndicated notes, revolving and non-revolving credit facilities, and unfunded commitments to make advances on loans);
- purchasing securities that are issued by lenders and guaranteed by Farmer Mac and that are secured by eligible loans (Farmer Mac refers to these securities as "AgVantage," a registered trademark of Farmer Mac);
- issuing and guaranteeing securities that represent interests in, or obligations secured by, pools of eligible loans (together with AgVantage, Farmer Mac refers to these securities as "Farmer Mac Guaranteed Securities");
- servicing (including as master servicer) eligible loans purchased or securitized by Farmer Mac; and
- providing long-term standby purchase commitments ("LTSPCs") for eligible loans.

Farmer Mac Guaranteed Securities may be retained by the seller of the underlying loans, retained by Farmer Mac, or sold to third-party investors.

Farmer Mac was established under federal legislation first enacted in 1988 and amended most recently in 2018 – Title VIII of the Farm Credit Act of 1971 (12 U.S.C. §§ 2279aa et seq.), which is referred to as Farmer Mac's charter. Farmer Mac is a government-sponsored enterprise ("GSE") by virtue of the status conferred by its charter. The charter provides that Farmer Mac has the power to establish, acquire, and maintain affiliates under applicable state law to carry out any activities that Farmer Mac otherwise would perform directly. Farmer Mac established its two existing subsidiaries – Farmer Mac II LLC and Farmer Mac Mortgage Securities Corporation – under that power.

Farmer Mac is an institution of the Farm Credit System ("FCS"), which is composed of the banks, associations, and related entities, including Farmer Mac and its subsidiaries, regulated by the Farm Credit Administration ("FCA"), an independent agency in the executive branch of the United States government. Although Farmer Mac is an institution of the FCS, it is not liable for any debt or obligation of any other institution of the FCS. None of FCA, the FCS, or any other individual institution of the FCS is liable for any debt or obligation of Farmer Mac or its subsidiaries. The debts and obligations of Farmer Mac and its subsidiaries are not guaranteed by the full faith and credit of the United States of America.

Farmer Mac's two primary sources of revenue are:

- interest income earned on assets held on balance sheet, net of related funding costs and interest payments and receipts on financial derivatives; and
- guarantee and commitment fees received for outstanding guaranteed securities and LTSPCs.

Farmer Mac funds its purchases of eligible loans and securities primarily by issuing debt obligations of various maturities in the public capital markets. Farmer Mac also uses the proceeds of debt issuance to fund liquidity investments that must comply with policies adopted by Farmer Mac's board of directors and with FCA regulations, which establish limitations on asset class, dollar amount, issuer concentration, and credit quality. Those regulations can be found at 12 C.F.R. §§ 652.1-652.45 ("Liquidity and Investment Regulations"). Farmer Mac's regular debt issuance supports its access to the capital markets, and Farmer Mac's liquidity investments provide an alternative source of funds should market conditions become unfavorable. As of December 31, 2021, Farmer Mac had $2.2 billion of discount notes and $20.6 billion of medium-term notes outstanding. For more information about Farmer Mac's eligible loans, securities, and liquidity investments, as well as its financial performance and sources of capital and liquidity, see "Management's Discussion and Analysis of Financial Condition and Results of Operations." For more information about Farmer Mac's debt issuance, see "Business—Financing—Debt Issuance."

Secondary Market

Farmer Mac's activities are intended to provide lenders with an efficient and competitive secondary market that enhances these lenders' ability to offer competitively-priced financing solutions to borrowers. This secondary market is designed to increase the availability of credit at competitive interest rates to America's rural communities and agricultural sectors, as well as to provide borrowers with the benefits of capital markets pricing and product innovation. The secondary market provided by Farmer Mac functions as a bridge between the public capital markets and the U.S. agricultural and rural credit markets by attracting additional capital sources for financing rural America and agricultural borrowers.

Farmer Mac's purchases of loans and securities and its sale of guaranteed securities to investors increase lenders' liquidity and lending capacity and provide a stable source of funding for lenders that extend credit to the agricultural and rural credit markets. Farmer Mac's issuance of LTSPCs for loans held by lenders and its issuance of guaranteed securities to lenders in exchange for the related securitized loans could result in lower regulatory capital requirements and reduced borrower or commodity concentration exposure for many lenders, thereby expanding their lending capacity. Through providing efficient and competitive financing solutions, Farmer Mac has the potential to increase lending flexibility for rural credit markets, which may result in lower interest rates paid on loans made by lenders to rural and agricultural borrowers.

Farmer Mac markets a mix of products to lenders who may be in need of capital, liquidity, portfolio diversification, and/or access to a wide variety of loan products, including those with long-term fixed rates. As part of its outreach strategy, Farmer Mac engages with current and prospective lenders to identify how their use of Farmer Mac's secondary market could further support their origination efforts and drive efficient capital deployment to agriculture communities and rural America. Farmer Mac also provides wholesale funding for institutional investors in agricultural assets that qualify as eligible collateral under Farmer Mac's charter. For these potential issuers, Farmer Mac directs its outreach efforts through its business relationships within the agricultural community and through outreach to institutions whose profile may benefit from wholesale funding. Farmer Mac seeks to maximize the use of technology to support these business development efforts.

FARMER MAC'S LINES OF BUSINESS

Farmer Mac engages in a variety of secondary market activities across its two lines of business, Agricultural Finance and Rural Infrastructure Finance. Within those two lines of business are four segments: Corporate AgFinance, Farm & Ranch, Rural Utilities, and Renewable Energy, as shown in the table below:

	Agricultural Finance		**Rural Infrastructure Finance**	
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy
Interest-earning assets				
Loans	X	X	X	X
Loans held in trusts	X			
AgVantage Securities	X	X	X	
Farmer Mac Guaranteed Securities	X			
USDA Securities	X			
Products and services that earn fee income				
LTSPCs	X		X	
Farmer Mac Guaranteed Securities	X		X	
Unfunded Commitments	X	X	X	X
Farmer Mac Guaranteed Securities[1]	X			
Securitized loan servicing	X			

[1] Structured securitization transactions

The loans (and interests in those loans) eligible for Farmer Mac's secondary market activities in each of Farmer Mac's lines of business include:

- For Farmer Mac's Agricultural Finance line of business, mortgage loans secured by first liens on agricultural real estate, including part-time farms and rural housing loans, as well as agricultural and rural development loans guaranteed by the United States Department of Agriculture ("USDA"); and
- For Farmer Mac's Rural Infrastructure Finance line of business, loans by lenders organized as cooperatives to finance electrification and telecommunications systems and renewable energy providers or projects in rural areas.

As of December 31, 2021, the total outstanding business volume in Farmer Mac's two lines of business (Agricultural Finance and Rural Infrastructure Finance) was $23.6 billion. The following table presents the outstanding balances under Farmer Mac's two lines of business as of December 31, 2021 and December 31, 2020:

Lines of Business - Outstanding Business Volume

	On or Off Balance Sheet	As of December 31, 2021	As of December 31, 2020
		(in thousands)	
Agricultural Finance:			
Farm & Ranch:			
Loans	On-balance sheet	$ 4,775,070	$ 3,979,854
Loans held in consolidated trusts:			
Beneficial interests owned by third-party investors	On-balance sheet	948,623	1,287,045
IO-FMGS	On-balance sheet	12,297	—
USDA Securities	On-balance sheet	2,445,806	2,487,420
AgVantage Securities	On-balance sheet	4,725,000	4,425,000
LTSPCs and unfunded commitments	Off-balance sheet	2,587,154	2,314,965
Farmer Mac Guaranteed Securities	Off-balance sheet	578,358	378,610
Loans serviced for others	Off-balance sheet	22,331	—
Total Farm & Ranch		**$ 16,094,639**	**$ 14,872,894**
Corporate AgFinance:			
Loans	On-balance sheet	$ 1,123,300	$ 909,539
AgVantage Securities	On-balance sheet	367,464	744,110
Unfunded Loan Commitments	Off-balance sheet	47,070	10,466
Total Corporate AgFinance		**$ 1,537,834**	**$ 1,664,115**
Total Agricultural Finance		**$ 17,632,473**	**$ 16,537,009**
Rural Infrastructure Finance:			
Rural Utilities:			
Loans	On-balance sheet	$ 2,302,373	$ 2,187,377
AgVantage Securities	On-balance sheet	3,033,262	2,565,837
LTSPCs and Unfunded Loan Commitments	Off-balance sheet	556,837	556,425
Farmer Mac Guaranteed Securities	Off-balance sheet	2,755	4,412
Total Rural Utilities		**$ 5,895,227**	**$ 5,314,051**
Renewable Energy:			
Loans	On-balance sheet	$ 86,763	$ 73,035
Unfunded Loan Commitments	Off-balance sheet	—	—
Total Renewable Energy		**$ 86,763**	**$ 73,035**
Total Rural Infrastructure Finance		**$ 5,981,990**	**$ 5,387,086**
Total		**$ 23,614,463**	**$ 21,924,095**

Agricultural Finance

Farmer Mac provides a secondary market for eligible loans in Farmer Mac's Agricultural Finance line of business by (1) purchasing and retaining eligible loans and securities, (2) guaranteeing the payment of principal and interest on securities that represent interests in, or obligations secured by, pools of eligible loans, (3) servicing (including as master servicer) eligible loans purchased or securitized by Farmer Mac, and (4) issuing LTSPCs for designated eligible loans. Farmer Mac is compensated for these activities through net interest income on loans and securities held on balance sheet, guarantee fees earned on securities issued to third parties, servicing fees on securitized loans, and commitment fees earned on loans in LTSPCs and on unfunded loan commitments.

Loan Eligibility

To be eligible for the Agricultural Finance line of business, a loan must either:

- be an agricultural mortgage loan (referred to as "Agricultural Finance mortgage loans") that is
    - secured by a fee simple mortgage or a leasehold mortgage with status as a first lien on agricultural real estate (including part-time farms and rural housing) located within the United States; and
    - an obligation of a citizen or national of the United States, an alien lawfully admitted for permanent residence in the United States, or a private corporation or partnership that is majority-owned by U.S. citizens, nationals, or legal resident aliens that, in each case, has training or farming experience that is sufficient to ensure a reasonable likelihood that the loan will be repaid according to its terms; *or*
- be the guaranteed portion of a loan guaranteed by the USDA under the Consolidated Farm and Rural Development Act (7 U.S.C. § 1921 et seq.) (referred to as "USDA Securities").

Farmer Mac's charter authorizes a maximum loan size (adjusted annually for inflation) for an eligible Agricultural Finance mortgage loan secured by more than 2,000 acres of agricultural real estate. That maximum loan size was $14.1 million as of December 31, 2021. The charter does not prescribe a maximum loan size or a total borrower exposure for an eligible Agricultural Finance mortgage loan secured by 2,000 acres or less of agricultural real estate. However, an internal policy approved by Farmer Mac's board of directors limits the cumulative direct credit exposure to any one borrower or group of related borrowers on loans secured by 2,000 acres or less of agricultural real estate to 10% of Farmer Mac's Tier 1 capital ($120.1 million as of December 31, 2021). For Agricultural Finance mortgage loans, eligible agricultural real estate consists of one or more parcels of land, which may be improved by permanently affixed buildings or other structures, that (i) is used for the production of one or more agricultural commodities or products and (ii) either consists of a minimum of five acres or generates minimum annual receipts of $5,000.

As required by Farmer Mac's charter, Farmer Mac has established underwriting, security appraisal, and repayment standards for eligible loans that consider the nature, risk profile, and other differences between different categories of eligible loans. The charter prescribes that the following minimum standards must be applied to all Agricultural Finance mortgage loans:

- provide that no loan with a loan-to-value ratio ("LTV") more than 80% may be eligible;
- require each borrower to demonstrate sufficient cash flow to adequately service the loan;
- require sufficient documentation standards;
- protect the integrity of the appraisal process for any loan; and
- confirm that the borrower is or will be actively engaged in agricultural production.

Underwriting and Collateral Standards - Farm & Ranch

Farmer Mac experiences direct credit exposure to borrowers on Agricultural Finance mortgage loans in its Farm & Ranch reportable operating segment (referred to as "Farm & Ranch loans") through its loan purchases, unfunded commitments, LTSPCs, and Farmer Mac Guaranteed Securities that represent interests in, or obligations secured by, pools of eligible Farm & Ranch loans but that are not AgVantage securities ("Farm & Ranch Guaranteed Securities"). Farmer Mac applies credit underwriting standards and methodologies to help assess exposures to Farm & Ranch loans, which may include collateral valuation, financial metrics, and other appropriate borrower financial and credit information.

Farm & Ranch loans typically are required to meet specific underwriting criteria established by Farmer Mac or demonstrate compensating strengths in one or more other underwriting criteria. Farmer Mac relies on the combined expertise of experienced internal agricultural credit underwriters and loan servicers, along with external agricultural loan servicing and collateral valuation contractors, to perform the necessary underwriting, servicing, and collateral valuation functions on Farm & Ranch loans.

USDA Securities are exempted from the credit underwriting, collateral valuation, documentation, and other standards that other loans must meet to be eligible for the secondary market provided by Farmer Mac and are exempted from any diversification and internal credit enhancement that may be required of pools of other eligible loans. Farmer Mac purchases nearly all of its USDA Securities through Farmer Mac II LLC, a subsidiary of Farmer Mac that operates substantially all of the business related to Farmer Mac's USDA Securities.

Underwriting and Collateral Standards - Corporate AgFinance

Farmer Mac experiences direct credit exposure to borrowers on Agricultural Finance mortgage loans in Farmer Mac's Corporate AgFinance reportable operating segment (referred to as "Corporate AgFinance loans") through its loan purchases and unfunded commitments. Farmer Mac applies credit underwriting standards and methodologies to help assess exposures to Corporate AgFinance loans, which may include cash flow, leverage, and liquidity assessment, financial metrics analysis, collateral valuation, and other appropriate borrower financial and credit information.

Corporate AgFinance loans tend to be larger and more complex farming operations than Farm & Ranch loans (generally more than $10 million) and typically are loans made to agribusinesses focused on agriculture production, food and fiber processing, and other supply chain production. Thus, Corporate AgFinance loans often have a different credit risk profile than Farm & Ranch loans. Farmer Mac has implemented methodologies and parameters to help assess credit risk and has established specific underwriting criteria for Corporate AgFinance loans based on the sector, borrower construct, and transaction complexity. Due to the larger loan sizes and different credit risk profiles, Farmer Mac thoroughly analyzes each prospective Corporate AgFinance loan, including assessing the borrower's leverage, cash flows, liquidity, and revenue and margin trends, as well as evaluating the borrower's suppliers, customers, market share, and competition. Any underlying weaknesses are assessed and analyzed in conjunction with any compensating strengths. Corporate AgFinance loans also typically require ongoing monitoring of reporting requirements and financial and non-financial covenants. Farmer Mac relies on the experience of internal underwriters with the expertise to analyze large, complex farming operations and agribusiness loans, along with collateral valuation contractors, and legal counsel to perform the necessary diligence to assess the overall credit risk and loan structures of these transactions.

Lenders

Farmer Mac approves lenders into its network of Farm & Ranch loan sellers based on an assessment of the lender's credit profile, which may include factors such as the institution's credit rating, origination history, or financial profile. Most lenders that participate in Farmer Mac's secondary market for Farm & Ranch loans meet prescribed criteria that Farmer Mac establishes for loan-selling counterparties, which typically include the requirement to:

- own a requisite amount of Farmer Mac common stock according to a schedule prescribed for the size and type of institution;
- have, in the judgment of Farmer Mac, the ability and experience to make or purchase and sell Farm & Ranch loans and service those loans in accordance with Farmer Mac's requirements either through the lender's own staff or through contractors and originators, as well as have appropriate internal controls, policies, and procedures;
- maintain a minimum amount of net liquidity or appropriate credit enhancements; and
- enter into a Seller/Servicer Agreement, which requires compliance with the terms of Farmer Mac's Seller/Servicer Guide, including providing representations and warranties about the eligibility of the loans and accuracy of loan data provided to Farmer Mac.

Any lender authorized by the USDA to obtain a USDA guarantee on a loan may participate in Farmer Mac's secondary market for USDA Securities.

Farmer Mac purchases Corporate AgFinance loans and unfunded commitments from a diverse set of lenders that support financing of the agriculture sector. Lenders may be existing Farm & Ranch lenders that have larger, more complex borrowers in their territories, as well as larger financial and non-bank institutions, such as national and regional banks, insurance companies, Farm Credit System institutions, and other non-traditional lending organizations, that structure and originate transactions for larger, more complex farming operations and agribusinesses.

Farmer Mac evaluates each lender who originates Corporate AgFinance loans to assess the experience and capabilities of the lender's ability to originate, structure, distribute, and monitor Corporate AgFinance transactions. In many instances, Farmer Mac will purchase loans and unfunded commitments from lenders that structure and arrange large, syndicated transactions involving numerous lenders that are necessary to support the larger transaction loan size. In these cases, Farmer Mac typically assesses each arranger's capabilities and experience in arranging syndicated loans. Because Corporate AgFinance loans are typically offered to Farmer Mac without or with few representations and warranties, Farmer Mac places a greater emphasis on underwriting and legal documentation due diligence in connection with its purchase of these loans to mitigate risks associated with the transaction, including loan documentation, borrower eligibility, and loan data.

Loan Servicing

During 2021, Farmer Mac began servicing a sizeable portion of the Agricultural Finance mortgage loan and USDA Securities portfolios through a strategic acquisition of loan servicing rights along with experienced servicing personnel and an operational servicing platform. Farmer Mac also continues to contract with other institutions to undertake most of the servicing responsibilities for the remaining portion of its Agricultural Finance mortgage loans in accordance with Farmer Mac's specified servicing requirements or in accordance with the servicing standards established by the servicing institution if the institution's standards are acceptable to Farmer Mac. For these loans, the servicer may or may not be the same entity as the lender that sold the loans to Farmer Mac. For Farm & Ranch loans for which the servicer is not the originating lender, the originating lender often retains some servicing responsibility, particularly with direct borrower contact, which is referred to as "field servicing." Field servicers may enter into contracts with Farmer Mac's servicers that specify their field servicing responsibilities.

For Farmer Mac's USDA Securities, the lender on each USDA-guaranteed loan is required by regulation to retain the unguaranteed portion of the guaranteed loan, to service the entire underlying guaranteed loan (including the USDA-guaranteed portion of that loan), and to remain mortgagee and/or secured party of record, if applicable. The USDA-guaranteed portion and the unguaranteed portion of the loan are to be secured by the same collateral with equal lien priority. The USDA-guaranteed portion of a loan cannot be paid later than, or in any way be subordinated to, the related unguaranteed portion.

Other Products - Agricultural Finance

<u>AgVantage Securities</u>

Under the AgVantage securities product line, Farmer Mac guarantees and purchases securities issued by lenders and other financial institutions (including financial funds and real estate investment funds) that are secured by pools of eligible loans. Typically, Farmer Mac retains AgVantage securities in its portfolio. Most of the AgVantage securities in Farmer Mac's Agricultural Finance line of business are securities issued by agricultural lenders that are secured by pools of Farm & Ranch loans. The AgVantage securities in the Agricultural Finance line of business also include securities issued by other financial institutions (including financial funds and institutional real estate investors) secured by mortgage loans that generally have different credit profiles, structural characteristics, and loan terms than typical Farm & Ranch loans. The loans serving as collateral for these AgVantage securities require a more comprehensive underwriting that more closely approximates Farmer Mac's underwriting for Corporate AgFinance loans.

Farmer Mac has direct credit exposure to the general credit of the issuers of AgVantage securities and assumes the ultimate credit risk of an issuer default on the AgVantage securities. Before approving an institution as an issuer in an AgVantage transaction, Farmer Mac assesses the issuer's creditworthiness as well as the credit quality and performance of the issuer's loan portfolio and loan underwriting standards. Farmer Mac continues to monitor the counterparty risk assessment on an ongoing basis after the AgVantage security is issued. In addition to being a general obligation of the issuer, all AgVantage securities must be secured by eligible loans or eligible securities guaranteed by Farmer Mac in an amount at least equal to the outstanding principal amount of the issuer's AgVantage securities. As a result, Farmer Mac has indirect credit exposure to the loans or guaranteed securities that are pledged to secure the AgVantage securities, which comprise collateral for Farmer Mac in the event of a default by the issuer.

Loans pledged under AgVantage securities are serviced by the issuers of the securities (or their affiliated servicing institutions) in accordance with these institutions' servicing procedures. Farmer Mac reviews these servicing procedures before purchasing AgVantage securities from the issuer. In AgVantage transactions, the issuer is generally required to remove from the pool of pledged collateral any loan that becomes and remains delinquent in the payment of principal or interest and to replace the delinquent loan with another eligible loan that is current in payment or to pay down the AgVantage securities to maintain the minimum required collateralization level.

For AgVantage securities secured by loans eligible for Farmer Mac's Agricultural Finance line of business, Farmer Mac currently requires the general obligation to be over-collateralized, either by more eligible loans or any of the following types of assets:

- cash;
- securities issued by the U.S. Treasury or guaranteed by an agency or instrumentality of the United States;

- other highly-rated securities; or
- other instruments approved by Farmer Mac.

The required collateralization level for the AgVantage securities secured by Agricultural Finance mortgage loans currently ranges from 103% to 125%. The required collateralization level is determined based on credit factors related to the issuer and the credit profile of the loans serving as collateral, 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 unless mutually agreed by Farmer Mac and the counterparty.

For AgVantage securities that are secured by eligible Agricultural Finance mortgage loans, Farmer Mac requires that the loans meet the minimum standards set forth in the charter for those types of loans with a maximum limit of $75.0 million in cumulative exposure to any one borrower or related borrowers from a single AgVantage issuer.

Guarantees and LTSPCs

Farmer Mac offers two credit enhancement alternatives to direct loan purchases for Farm & Ranch loans that allow approved lenders the ability to retain the cash flow benefits of their loans and increase their liquidity and lending capacity: (1) LTSPCs and (2) Farm & Ranch Guaranteed Securities. In LTSPCs and Farm & Ranch Guaranteed Securities, the lender effectively transfers the credit risk on their eligible loans because, through Farmer Mac's commitment to purchase the loan (in the case of LTSPCs) or Farmer Mac's guarantee (in the case of Farm & Ranch Guaranteed Securities), Farmer Mac assumes the ultimate credit risk of borrower defaults on the related loans.

An LTSPC permits the lender to retain loans in its portfolio until such time, if ever, as the lender elects to deliver some or all of the loans covered by the LTSPC to Farmer Mac for purchase. Loans subject to an LTSPC must meet Farmer Mac's standards for eligible loans at the commencement of the LTSPC when Farmer Mac assumes the credit risk on the loans and are serviced by the holders of those loans in accordance with those lenders' servicing procedures, which Farmer Mac reviews before entering into those transactions. As consideration for its assumption of the credit risk on loans covered by an LTSPC, Farmer Mac receives commitment fees payable monthly in arrears. Some LTSPCs contain risk sharing arrangements for pools of loans that provide for the counterparty to absorb up to a specified amount (typically between one and five percent of the original principal balance of the loan pool) of any losses incurred on the loans in the pool. At a lender's request, Farmer Mac purchases loans subject to an LTSPC at:

- par if the loans become delinquent for either 90 days or 120 days (depending on the agreement) or are in material non-monetary default, with accrued and unpaid interest on the defaulted loans payable out of any future loan payments or liquidation proceeds; or
- fair value or in exchange for cash or Farm & Ranch Guaranteed Securities (if the loans are not delinquent), in accordance with the applicable agreement.

In Farm & Ranch Guaranteed Securities transactions, Farmer Mac guarantees securities representing interests in eligible Farm & Ranch loans held by a trust or other entity. Farmer Mac guarantees the timely payment of principal and interest on the securities in the event of a payment shortfall due to default and either retains these securities or arranges for their sale to third parties. As consideration for its assumption of credit risk on the assets underlying the Farm & Ranch Guaranteed Securities, Farmer Mac receives guarantee fees based on the outstanding principal balance of the securities it guarantees. Some Farm & Ranch Guaranteed Securities transactions include a smaller, subordinate tranche of securities issued to third parties that are not guaranteed by Farmer Mac, which helps to offset Farmer Mac's credit risk on these transactions.

Farmer Mac is obligated under its guarantee on the securities to make timely payments to investors of interest and principal (including balloon payments), regardless of whether Farmer Mac or the related trust has actually received those scheduled payments. Farmer Mac's guarantee fees typically are collected out of installment payments made on the underlying loans until those loans have been repaid, purchased out of the trust, or otherwise liquidated (generally as a result of default). The aggregate amount of guarantee fees received on Farm & Ranch Guaranteed Securities depends on the amount of those securities outstanding and on the applicable guarantee fee rate, which Farmer Mac's charter caps at 50 basis points (0.50%) per year.

From time to time, Farmer Mac issues and guarantees securities backed by USDA Securities that it has purchased and also guarantees securities issued by Farmer Mac II LLC backed by USDA Securities that it has purchased. Farmer Mac II LLC does not guarantee any USDA Securities it holds or any Farmer Mac Guaranteed USDA Securities issued by Farmer Mac or Farmer Mac II LLC.

Rural Infrastructure Finance

Farmer Mac's charter authorizes the purchase of, and guarantee of securities backed by, loans for electric (including renewable electric energy) or telecommunications facilities by lenders organized as cooperatives to borrowers that have received or are eligible to receive loans under the Rural Electrification Act of 1936 ("REA"). The REA is administered by the Rural Utilities Service ("RUS"), an agency of the USDA. Farmer Mac refers to eligible loans made to an electric distribution facility, an electric generation and transmission facility, or a telecommunications facility as "Rural Utilities loans" and refers to eligible loans made to renewable electric energy facilities as "Renewable Energy loans."

Farmer Mac's Rural Infrastructure Finance line of business encompasses purchases of Rural Utilities loans and Renewable Energy loans and guarantees of securities backed by those loans, as well as LTSPCs for pools of eligible Rural Utilities loans. The vast majority of Farmer Mac's business to date under the Rural Infrastructure Finance line of business has involved Rural Utilities loans made to electric facilities (primarily electric distribution cooperatives and electric generation and transmission cooperatives). During 2021, Farmer Mac purchased $132.2 million of loans and loan commitments to telecommunications companies that provide wireless, cable, fiber transport, and broadband services to rural America as part of its strategic initiative to provide further support for the telecommunications industry. Also during 2021, Farmer Mac purchased $31.2 million of Renewable Energy loans as part of its strategic initiative to support rural renewable energy projects.

Underwriting and Collateral Standards

Farmer Mac's charter does not specify minimum underwriting criteria for eligible Rural Utilities or Renewable Energy loans. To manage Farmer Mac's credit risk, to mitigate the risk of loss from borrower defaults, and to provide guidance for the management, administration, and conduct of underwriting to participants in the Rural Infrastructure Finance line of business, Farmer Mac has adopted credit underwriting standards that vary by loan product and by loan type. These standards are based on industry practices for similar Rural Utilities and Renewable Energy loans and are designed to assess the creditworthiness of the borrower, as well as the risk to Farmer Mac.

For Rural Utilities loans, Farmer Mac reviews lenders' credit submissions and analyzes borrowers' audited financial statements and financial and operating reports to confirm that loans meet Farmer Mac's underwriting standards for Rural Utilities loans. It is customary in loans to electric distribution cooperatives and electric generation and transmission cooperatives for the lender or lender group to take a security interest in substantially all of the borrower's assets. When Farmer Mac purchases a Rural Utilities loan with a pledge of all assets and a lender also has a lien on all assets, Farmer Mac verifies that a lien accommodation will result in either a shared first lien or a first lien in favor of Farmer Mac. When debt indentures are used, Farmer Mac determines if available collateral is adequate to support the loan program and Farmer Mac's investment. Farmer Mac also purchases unsecured Rural Utilities loans (primarily electric generation and transmission loans) that meet Farmer Mac's underwriting standards for unsecured Rural Utilities loans.

For a Renewable Energy loan, Farmer Mac has direct credit exposure to the related standalone renewable energy project. These projects are typically financed on a non-recourse or limited recourse basis and underwritten on a projection basis with significant reliance placed on assumptions used in each project's analysis. Farmer Mac has implemented methodologies and parameters to assess credit risk and has established specific underwriting criteria based on the project and transaction construct and complexity. Farmer Mac thoroughly analyzes each prospective Renewable Energy loan. Farmer Mac performs quantitative assessments typically focused on projected debt service requirements, term and amortization review, interest rate sensitivity, and collateral analysis. Farmer Mac also performs qualitative assessments typically focused on the project sponsor's credentials and experience, off-take (cash flow) considerations, and concentration and other market considerations. Farmer Mac also typically undertakes a review of the project contracts and agreements for each Renewable Energy loan. Renewable Energy loans are typically secured by a first lien on the borrower's project assets, an assignment of the project contracts and agreements, a land or leasehold interest, and in certain cases, a pledge of the equity interests in the borrower entity. Farmer Mac's enforcement rights in any collateral securing a Renewable Energy loan may be subject to tax equity interests in the borrower's renewable energy project.

Lenders and Loan Servicing

Farmer Mac's charter requires loans in Farmer Mac's Rural Infrastructure Finance line of business to have been originated by a lender organized as a cooperative. Farmer Mac does not directly service the Rural Utilities or Renewable Energy loans held in its portfolio. Typically, these loans are serviced by the lender or other organization designated by Farmer Mac that has experience in servicing loans to utilities and renewable energy providers and in the context of project finance, as applicable.

Other Products - Rural Infrastructure Finance

<u>AgVantage Securities</u>

Farmer Mac's portfolio of AgVantage securities in its Rural Infrastructure Finance line of business includes securities issued by cooperative lenders that are secured by pools of Rural Utilities loans. For these AgVantage securities, Farmer Mac requires:

- the counterparty issuing the general obligation to have a credit rating from a nationally-recognized statistical rating organization ("NRSRO") that is at least investment grade, or be of comparable creditworthiness as determined through Farmer Mac's analysis; and
- the collateralization (consisting of current, performing loans) to be maintained at the contractually prescribed level, in an amount at least equal to the outstanding principal amount of the security.

Although Farmer Mac has only indirect credit exposure on the Rural Utilities loans pledged to secure AgVantage securities, the same underwriting standards that apply to loans made to Rural Utilities borrowers on which Farmer Mac assumes direct credit exposure also apply to loans made to Rural Utilities borrowers that secure the AgVantage securities. Farmer Mac's charter does not prescribe a maximum loan size or a total borrower exposure for an eligible Rural Utilities loan, but Farmer Mac's current limit for AgVantage transactions is $75.0 million for cumulative loan exposure to any one borrower or related borrowers (with the amount of any direct exposure to a borrower not counting towards the $75.0 million limit).

COMPETITION

Farmer Mac is the only federally-chartered corporation established to provide a secondary market for agricultural mortgage loans, rural infrastructure loans, and USDA Securities, but faces competition from other entities that purchase, retain, securitize, or provide financing for the types of assets eligible for Farmer Mac's secondary market activities. These entities include commercial and investment banks, insurance companies, other FCS institutions, financial funds, and certain government programs. Farmer Mac also competes indirectly with originators of eligible loans that would prefer to retain the loans they originate rather than sell them into the secondary market. Farmer Mac is able to compete to acquire eligible loans due to the variety of products it offers and its ability to offer competitive funding structures and pricing to its customers. This enables Farmer Mac to provide flexible financing options and products designed to meet the varied needs of lending institutions related to capital requirements, liquidity, credit risk, and management of sector and geographic concentrations and borrower exposure limits. The relative competitiveness of Farmer Mac's loan rates and Farmer Mac's ability to develop business with lending institutions are affected by many factors, including:

- the overall supply of capital available to agricultural and rural infrastructure borrowers;
- the types and variety of products offered by Farmer Mac's competitors to meet the needs of Farmer Mac's customer base;
- changes in the levels of available capital and liquidity of lending institutions;
- the existence of alternative sources of funding and credit enhancement for lending institutions;
- the rate of growth in the market for eligible loans; and
- demand for Farmer Mac's products.

Because Farmer Mac's charter limits Farmer Mac's business to secondary-market activities, Farmer Mac's competitive position is affected by the willingness of originators to offer eligible loans for sale in the secondary market or to utilize Farmer Mac for funding syndicated or participated loans. The charter's limits on loan size for some Agricultural Finance mortgage loans, as well as the types of loans that are eligible for Farmer Mac's lines of business, also affect Farmer Mac's competitive position. For more information on government regulation of Farmer Mac, see "Business—Government Regulation of Farmer Mac."

Farmer Mac's ability to obtain competitive funding in the debt markets is essential to its ability to maintain its relative position with its customers. As a result, competition for debt investors with other debt-issuing institutions, such as the FCS, Federal Home Loan Banks, Fannie Mae, Freddie Mac, and highly-rated financial institutions, can affect the price and volume at which Farmer Mac issues debt and therefore its ability to offer savings to customers in the form of competitive products.

CAPITAL AND CORPORATE GOVERNANCE

Farmer Mac's charter prescribes the company's basic capital and corporate governance structure, as described below. The charter authorizes Farmer Mac to issue two classes of voting common stock, each of which elects one-third of Farmer Mac's 15-person board of directors. The charter also authorizes Farmer Mac to issue non-voting common stock.

- Presidential appointments. Five members of Farmer Mac's 15-member board of directors are individuals who meet the qualifications specified in the charter and are appointed by the President of the United States with the advice and consent of the United States Senate (one of whom is designated as the chair of the board of directors). These appointed directors serve at the pleasure of the President of the United States with no set term.

- Class A voting common stock. The charter restricts ownership of Farmer Mac's Class A voting common stock to banks, insurance companies, and other financial institutions or similar entities that are not institutions of the FCS. The charter also provides that five members of Farmer Mac's 15-member board of directors are elected by a plurality of the votes of the Class A stockholders each year. The charter limits the amount of Class A voting common stock that any one holder may own to no more than 33% of the outstanding shares of Class A voting common stock. Farmer Mac is not aware of any regulation applicable to non-FCS financial institutions that requires a minimum investment in Farmer Mac's Class A voting common stock or that prescribes a maximum investment amount lower than the 33% limit set forth in the charter. Farmer Mac's Class A voting common stock is listed on the New York Stock Exchange under the symbol AGM.A.

- Class B voting common stock. The charter restricts ownership of Farmer Mac's Class B voting common stock to FCS institutions and also provides that five members of Farmer Mac's 15-member board of directors are elected by a plurality of the votes of the Class B stockholders each year. The charter contains no restrictions on the maximum number or percentage of outstanding shares of Class B voting common stock that any one holder may own, and Farmer Mac is not aware of any regulation applicable to FCS institutions that requires a minimum investment in its Class B voting common stock or that prescribes a maximum amount. Farmer Mac's Class B voting common stock, which has a limited market and trades infrequently, is not listed or quoted on any exchange or other quotation system, and Farmer Mac is not aware of any publicly available quotations or prices for this class of common stock.

- Class C non-voting common stock. The charter does not impose any ownership restrictions on Farmer Mac's Class C non-voting common stock, and shares of this class are freely transferable. Farmer Mac uses Class C non-voting common stock for awards of equity-based compensation to officers, directors, and selected employees as part of the company's compensation programs. Holders of the Class C non-voting common stock do not vote on the election of directors or any other matter. Farmer Mac's Class C non-voting common stock is listed on the New York Stock Exchange under the symbol AGM.

The dividend and liquidation rights of all three classes of Farmer Mac's common stock are the same. Dividends may be paid on Farmer Mac's common stock only when, as, and if declared by Farmer Mac's board of directors in its sole discretion, subject to compliance with applicable capital requirements and the payment of dividends on any outstanding preferred stock issued by Farmer Mac. Upon liquidation, dissolution, or winding up of the business of Farmer Mac, after payment and provision for payment of outstanding debt of Farmer Mac, the holders of shares of Farmer Mac's currently outstanding 6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C ("Series C Preferred Stock"), 5.700% Non-Cumulative Preferred Stock, Series D ("Series D Preferred Stock"), 5.750% Non-Cumulative Preferred Stock, Series E ("Series E Preferred Stock"), 5.250% Non-Cumulative Preferred Stock, Series F ("Series F Preferred Stock"), 4.875% Non-Cumulative Preferred Stock, Series G ("Series G Preferred Stock"), and any other preferred stock then outstanding, would be paid at par value out of assets available for distribution, plus all declared and unpaid dividends, before the holders of shares of common stock received any payment. See also "Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities" for more information about Farmer Mac's common stock, and "Business—Financing—Equity Issuance" for more information about Farmer Mac's common stock and preferred stock.

Unlike some other GSEs such as other FCS institutions and the Federal Home Loan Banks, Farmer Mac is not structured as a cooperative owned exclusively by member institutions and established to provide services exclusively to its members. Rather, Farmer Mac, as a publicly-traded corporation, has a broader base of stockholders, including those who do not directly participate in the secondary market provided by Farmer Mac. Farmer Mac therefore seeks to fulfill its mission of serving the financing needs of rural America in a way that is consistent with providing a return on the investment of its stockholders.

Farmer Mac generally requires financial institutions to own a requisite amount of Farmer Mac common stock, based on the size and type of institution, to sell Agricultural Finance mortgage loans to Farmer Mac. As a result of this requirement, coupled with the ability of holders of Class A and Class B voting common stock to elect two-thirds of Farmer Mac's board of directors, Farmer Mac regularly conducts business with "related parties," including institutions affiliated with members of Farmer Mac's board of directors and institutions that own large amounts of Farmer Mac's voting common stock. Farmer Mac has adopted a Code of Business Conduct and Ethics and related corporate policies that govern any conflicts of interest that may arise in these transactions. Farmer Mac also requires that any transactions with related parties be conducted in the ordinary course of business, with terms and conditions comparable to those available to any other counterparty not related to Farmer Mac. For more information about related party transactions, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Related Party Transactions" and Note 3 to the consolidated financial statements.

Capital

Farmer Mac's charter establishes three capital standards for Farmer Mac – minimum capital, critical capital, and risk-based capital. Farmer Mac must comply with the higher of the minimum capital requirement and the risk-based capital requirement. Also, in accordance with the applicable FCA regulation on capital planning, Farmer Mac's board of directors oversees a policy that requires Farmer Mac to maintain a sufficient level of Tier 1 capital and restricts dividends and bonus payments if Farmer Mac's Tier 1 capital falls below specified thresholds. For a discussion of Farmer Mac's capital requirements and its actual capital levels, as well as FCA's role in the establishment and monitoring of those requirements and levels, see "Business—Government Regulation of Farmer Mac—Capital Standards," "Management's Discussion and Analysis of Financial Condition and Results of Operations—Balance Sheet Review—Equity," and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Capital Requirements."

Regulatory Oversight

Farmer Mac's charter assigns to FCA, acting through the separate Office of Secondary Market Oversight ("OSMO") within FCA, the responsibility for the examination of Farmer Mac and the general supervision of the safe and sound performance of the powers, functions, and duties vested in Farmer Mac by the charter. The charter also authorizes FCA, acting through OSMO, to apply its general enforcement powers to Farmer Mac. Farmer Mac's charter requires an annual examination of the financial transactions of Farmer Mac and authorizes FCA to assess Farmer Mac for the cost of FCA's regulatory activities, including the cost of any examination. Farmer Mac is also required to file quarterly reports of condition with OSMO. As a publicly-traded corporation, Farmer Mac also must comply with the periodic reporting requirements of the SEC. For a more detailed discussion of Farmer Mac's regulatory and governmental relationships, see "Business—Government Regulation of Farmer Mac."

HUMAN CAPITAL

As of December 31, 2021, Farmer Mac employed 153 people, with 42 new employees hired during the year resulting in a net increase of 32 employees (26%) compared to year-end 2020. Farmer Mac primarily employs full-time employees to meet its business needs as it grows and evolves while supplementing human capital needs with part-time employees (including interns) and independent contractors and consultants as needed.

Farmer Mac's employees are located throughout the United States, often near many of its primary customers. As of December 31, 2021, 94 full-time employees were located in the Washington, D.C. area, 27 full-time employees were located in the Johnston, Iowa area, and 32 full-time employees worked on a fully remote basis (without regard to the COVID-19 pandemic) in other parts of the United States.

As a financial services organization, Farmer Mac must attract and retain a highly skilled workforce in an often competitive employment environment. We use traditional methods to attract and retain talent, such as competitive salaries and benefits, including: a generous group health plan with all premiums paid by Farmer Mac; an employer-funded 401(k) plan; group term life insurance and long-term disability insurance; and other voluntary benefits of interest to employees, such as pre-tax dependent care reimbursement, partially-funded health savings accounts, and access to group rates for legal services insurance, additional life insurance, and pet insurance. We also believe that our mission to serve agricultural and rural communities, as well as philanthropic activities we undertake in support of our mission, provide Farmer Mac an advantage in our efforts to attract and retain talent. During 2021, Farmer

Mac contributed to Feeding America, Foodbank of Iowa, Common Good City Farm, DC and the Tribal Agriculture Fellowship (TAF) established by the Native American Agriculture Fund's (NAAF). We also recognize that employee engagement is a key component in Farmer Mac's human capital retention strategy. Therefore, we seek to create an inclusive work culture that is diverse and collaborative, with a focus on long-term succession planning and professional development. Farmer Mac approaches learning through three primary pillars: compliance, cybersecurity, and professional development. We have largely relied on eLearning platforms, self-paced study, and some externally facilitated training to support all three pillars. Farmer Mac also offers an education assistance plan for employees with at least one year of full-time employment in an amount up to $50,000.00. We also use flexible work structures and technology to create incentives to join and remain with Farmer Mac. Farmer Mac experienced a 7.3% turnover rate in 2021, which was down from 9.6% in 2020.

COVID-19 Pandemic

We continued to execute our business in a mostly remote capacity during 2021 as a result of the COVID-19 pandemic. The pandemic has compelled many companies, including Farmer Mac, to focus on how people work, as evidenced by our regular engagement with two "Future of Work" committees – one targeted at the employee level and the second including executive leaders. The committees are grounded in three fundamental principles: community, collaboration, and communication. In 2021, these committees contemplated the company's vaccine policy, phased approach to resuming in-person work interactions, employee surveys, and general sentiments about the future of work. To ensure continuity in regular communications, we have continued to reinforce our employees' access to secure digital meeting platforms, and our senior executive team has continued to lead regular meetings of all employees to share pertinent information on Farmer Mac's business and operations, and to provide a forum for discussing current events. We also used this engagement opportunity to gauge the health and well-being of employees and to solicit their feedback, to which we responded with initiatives to address work/life balance, including added flexibility in working hours and paid time off.

We do not currently have an established timeline for a full-scale return of our employees to Farmer Mac's offices. We have adopted a phased approach to resuming in-person work interactions, with the current phase involving the ability for employees to work in one of Farmer Mac's office locations on a voluntary basis in accordance with published health safety protocols. In the meantime, we remain confident in our employees' capacity to remain engaged and productive on a remote basis and are impressed with the resilience of our teams as we enter the third year of the COVID-19 pandemic.

Code of Business Conduct and Ethics

Farmer Mac's onboarding program includes a mandatory compliance session for every new hire and contract consultant within their first week. All employees also take annual training on and recertification of our Code of Business Conduct and Ethics, which encompasses the following four core principles: (1) promoting a safe workplace and a respectful and inclusive culture, (2) conducting business lawfully, fairly, and objectively, (3) communicating responsibly and protecting information, and (4) conducting business diligently and being a good corporate citizen. Farmer Mac's Code of Business Conduct and Ethics was refreshed in May 2021 while maintaining this principles-based approach. Our Code of Business Conduct and Ethics is available at www.farmermac.com and is not incorporated by reference into this report.

Diversity, Equity, and Inclusion

During 2021, we continued to strengthen our focus on diversity, equity, and inclusion ("DEI") efforts within Farmer Mac's workforce. Farmer Mac's DEI council was formed in late 2020 at the direction of Farmer Mac's board of directors and senior executives. The DEI council consists of 12 rotating Farmer Mac employees with the assistance of outside DEI consultants. During 2021, the DEI council established a three-year DEI strategic plan and identified five key strategic priorities for Farmer Mac during the plan period: (1) establish a strong DEI foundation across the organization; (2) strengthen talent acquisition, selection, and retention processes; (3) enhance a culture of inclusion; (4) provide services to Farmer Mac's rural customers in a fair and equitable manner; and (5) ensure accountability by tracking, monitoring, and communicating progress with transparency. The council also identified several specific action items for execution under the strategic plan, including: development of a comprehensive DEI communication and education program for employees; identification of data and development of metrics to enhance diverse and inclusive hiring, retention, and promotion practices at Farmer Mac; analysis of diversity within Farmer Mac's loan portfolio and vendors; and establishment of key performance indicators to align Farmer Mac's DEI priorities with Farmer Mac's business plan objectives. The DEI council continues to work closely with members of Farmer Mac’s senior management to execute the DEI strategic plan and reports its progress regularly to Farmer Mac's board of directors.

AVAILABLE INFORMATION

Farmer Mac makes available free of charge, through the "Investors" section of its internet website at www.farmermac.com, copies of materials it files with, or furnishes to, the SEC, including its Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements, and any amendments to those filings, as soon as reasonably practicable after electronically filing those materials with, or furnishing those materials to, the SEC. All references to www.farmermac.com in this report are inactive textual references only. The information contained on Farmer Mac's website is not incorporated by reference into this report.

FUNDING OF GUARANTEE AND LTSPC OBLIGATIONS

The main sources of funding for the payment of Farmer Mac's obligations under its guarantees and LTSPCs are the fees Farmer Mac receives for its guarantees and commitments, net effective spread, proceeds of debt issuances, loan repayments, and maturities of AgVantage securities. Farmer Mac has traditionally satisfied its obligations under LTSPCs and its guarantees by purchasing defaulted loans out of the LTSPCs or from related securitization trusts under the terms of the respective agreements governing the LTSPC or guaranteed securities. Farmer Mac typically recovers a significant portion of the value of defaulted loans purchased either through borrower payments, loan payoffs, payments by third parties, or foreclosure and sale of the property securing the loans. Net credit losses/(gains) arising from Farmer Mac's guarantees and commitments include charge-offs/(recoveries) against its allowance for losses, gains and losses on the sale of real estate acquired through foreclosure (known as "real estate owned" or "REO"), and fair value adjustments of REOs held.

Farmer Mac's charter requires Farmer Mac to maintain in its accounts a portion of the guarantee fees it receives from its guarantee activities as a reserve against losses. As of December 31, 2021, this reserve against losses arising from Farmer Mac's guarantee activities was $110.5 million. Farmer Mac calculates the amount of this statutorily required reserve against losses arising from its guarantee activities based on the credit risk component of guarantee fees received on all securities it guarantees, including AgVantage securities. This amount does not represent expected credit losses and does not directly relate to either the allowance for loan losses or the reserve for losses in Farmer Mac's consolidated balance sheets. Rather, this is the amount of capital that must be exhausted before Farmer Mac may issue obligations to the U.S. Treasury against the $1.5 billion that Farmer Mac is statutorily authorized to borrow from the U.S. Treasury to fulfill its guarantee obligations. That borrowing authority is not intended to be a routine funding source and has never been used. For a more detailed discussion of Farmer Mac's borrowing authority from the U.S. Treasury, see "Business—Farmer Mac's Authority to Borrow from the U.S. Treasury."

Farmer Mac's total outstanding guarantees and LTSPCs exceed the total of: (1) the amount held as an allowance for losses, (2) the amount maintained as a reserve against losses arising from guarantee activities, and (3) the amount Farmer Mac may borrow from the U.S. Treasury. However, Farmer Mac does not expect its future payment obligations under its guarantees and LTSPCs to exceed amounts available to satisfy those obligations, which includes access to the underlying collateral in the event of default. For information about Farmer Mac's allowance for losses, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees" and Note 2(h), Note 8, and Note 12 to the consolidated financial statements.

FINANCING

Debt Issuance

Farmer Mac's charter authorizes Farmer Mac to issue debt obligations to purchase eligible loans and securities, USDA Securities, and to maintain reasonable amounts of liquid investments to maintain an adequate supply of liquidity. Farmer Mac funds its purchases of eligible program assets and liquidity investment assets primarily by issuing debt obligations of various maturities in the public capital markets. Farmer Mac also issues debt obligations to obtain funds to finance its obligations under guarantees and LTSPCs. Farmer Mac's debt obligations include discount notes and medium-term notes, including callable medium-term notes, all of which are unsecured general obligations of Farmer Mac. Discount notes have original maturities of 1 year or less. Medium-term notes generally have maturities of 0.5 years to 25.0 years.

The interest and principal on Farmer Mac's debt obligations are not guaranteed by, and do not constitute debts or obligations of, FCA, the United States, or any agency or instrumentality of the United States other than Farmer Mac. Farmer Mac is an institution of the FCS but is not liable for any debt or obligation of any other institution of the FCS. Likewise, neither the FCS nor any other individual institution of the FCS is liable for any debt or obligation of Farmer Mac. Income to the purchaser of a Farmer Mac discount note or medium-term note is not exempt under federal law from federal, state, or local taxation. Farmer Mac's discount notes and medium-term notes are not currently rated by an NRSRO.

Farmer Mac invests the proceeds of its debt issuances in eligible program asset purchases, Farmer Mac Guaranteed Securities, and liquidity investment assets in accordance with policies established by its board of directors that comply with FCA's Liquidity and Investment Regulations, which establish limitations on asset class, dollar amount, issuer concentration, and credit quality. Farmer Mac's regular debt issuance supports its access to the capital markets, and Farmer Mac's liquidity investment assets provide an alternative source of funds should market conditions be unfavorable.

For more information about the Liquidity and Investment Regulations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources." For more information about Farmer Mac's outstanding investments and indebtedness, see Note 4 and Note 7 to the consolidated financial statements.

Equity Issuance

Farmer Mac's charter authorizes Farmer Mac to issue voting common stock, non-voting common stock, and non-voting preferred stock. Farmer Mac may obtain additional capital from future issuances of common stock and preferred stock.

<u>Common Stock</u>

Only banks, other financial entities, insurance companies, and institutions of the FCS may hold voting common stock. No holder of Class A voting common stock may directly or indirectly be a beneficial owner of more than 33% of the outstanding shares of Class A voting common stock. There are no restrictions on the maximum number or percentage of outstanding shares of Class B voting common stock that may be held by an eligible stockholder. No ownership restrictions apply to Class C non-voting common stock, and those securities are freely transferable.

The dividend rights of all three classes of Farmer Mac's common stock are the same, and dividends may be paid on common stock only when, as, and if declared by Farmer Mac's board of directors in its sole discretion, subject to compliance with applicable capital requirements and the payment of dividends on outstanding preferred stock. Upon liquidation, dissolution, or winding up of the business of Farmer Mac, after payment and provision for payment of outstanding debt of Farmer Mac, the holders of shares of preferred stock would be paid at par value out of assets available for distribution, plus all declared and unpaid dividends, before the holders of shares of common stock received any payment.

As of December 31, 2021, the following shares of Farmer Mac common stock were outstanding:

- 1,030,780 shares of Class A voting common stock;
- 500,301 shares of Class B voting common stock; and
- 9,235,205 shares of 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 under a share repurchase program that Farmer Mac's board of directors approved in 2015 and modified in 2019. 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. As of December 31, 2021, Farmer Mac had repurchased approximately 673,000 shares of Class C non-voting common stock at a cost of approximately $19.8 million under the share repurchase program since 2015.

The following table presents the dividends declared on Farmer Mac's common stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Holders Of Record As Of	Date Paid
February 23, 2021	$0.88	March 16, 2021	March 31, 2021
June 1, 2021	$0.88	June 15, 2021	June 30, 2021
August 11, 2021	$0.88	September 15, 2021	September 30, 2021
November 10, 2021	$0.88	December 15, 2021	December 31, 2021
February 24, 2022	$0.95	March 16, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on March 31, 2022.

Farmer Mac's ability to declare and pay common stock dividends could be restricted if it were to fail to comply with applicable capital requirements. See Note 9 to the consolidated financial statements and "Business—Government Regulation of Farmer Mac—Capital Standards."

Preferred Stock

No ownership restrictions apply to any preferred stock issued by Farmer Mac, and those securities are freely transferable. As of December 31, 2021, the following shares of Farmer Mac preferred stock were outstanding:

- 3,000,000 shares of Series C Preferred Stock, all of which were issued in June 2014;
- 4,000,000 shares of Series D Preferred Stock, all of which were issued in May 2019;
- 3,180,000 shares of Series E Preferred Stock, all of which were issued in May 2020;
- 4,800,000 shares of Series F Preferred Stock, all of which were issued in August 2020; and
- 5,000,000 shares of Series G Preferred Stock, all of which were issued in May 2021.

The Series C Preferred Stock, Series D Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, and Series G Preferred Stock, (collectively, "Outstanding Preferred Stock") each has a par value of $25.00 per share and an initial liquidation preference of $25.00 per share. Since each of their respective issuances, Farmer Mac has not issued any more shares of any series of Outstanding Preferred Stock. Each series of Outstanding Preferred Stock ranks senior to Farmer Mac's outstanding Class A voting common stock, Class B voting common stock, Class C non-voting common stock, and any other common stock of Farmer Mac issues in the future.

The Series D Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, and Series G Preferred Stock pay an annual dividend rate fixed at 5.700%, 5.750%, 5.250%, and 4.875%, respectively, for the life of the securities. The Series C Preferred Stock pays an annual dividend rate of 6.000% from the date of issuance to and including the quarterly payment date on July 17, 2024 and thereafter at a floating rate equal to three-month LIBOR plus 3.260%. Dividends on all series of Outstanding Preferred Stock are non-cumulative, so if the board of directors has not declared a dividend before the applicable dividend payment date for any dividend period, the dividend will not be paid or accumulate, and Farmer Mac will not be obligated to pay dividends for that dividend period, whether or not dividends on any series of Outstanding Preferred Stock are declared for any future dividend period. Farmer Mac may pay dividends on the Outstanding Preferred Stock without paying dividends on any class or series of stock Farmer Mac may issue in the future that ranks junior to the Outstanding Preferred Stock.

The Series C Preferred Stock, Series D Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, and Series G Preferred Stock rank equally with each other and will rank equally with any other class or series of stock Farmer Mac may issue in the future of equal priority as to dividends and upon liquidation. Farmer Mac has the right, but not the obligation, to redeem some or all of the issued and outstanding shares of Series C Preferred Stock on and any time after July 18, 2024, the Series D Preferred Stock on and after July 17, 2024, the Series E Preferred Stock on and after July 17, 2025, the Series F Preferred Stock on and after October 17, 2025, and the Series G Preferred Stock on and any time after July 17, 2026, all at a price equal to the then-applicable liquidation preference. Any redemption date for the Series D, Series E, Series F, or Series G Preferred Stock must be a scheduled quarterly dividend payment date. The Outstanding Preferred Stock is considered Tier 1 capital for Farmer Mac. For more information on Farmer Mac's capital requirements, see "Business—Government Regulation of Farmer Mac—Capital Standards."

The following table presents the dividends declared and paid on Series C Preferred Stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Period Beginning	For Period Ending	Date Paid
February 23, 2021	$0.3750	January 18, 2021	April 17, 2021	April 17, 2021
June 1, 2021	$0.3750	April 18, 2021	July 17, 2021	July 17, 2021
August 11, 2021	$0.3750	July 18, 2021	October 17, 2021	October 17, 2021
November 10, 2021	$0.3750	October 18, 2021	January 17, 2022	January 17, 2022
February 24, 2022	$0.3750	January 18, 2022	April 17, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on April 17, 2022.

The following table presents the dividends declared and paid on Series D Preferred Stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Period Beginning	For Period Ending	Date Paid
February 23, 2021	$0.35625	January 18, 2021	April 17, 2021	April 17, 2021
June 1, 2021	$0.35625	April 18, 2021	July 17, 2021	July 17, 2021
August 11, 2021	$0.35625	July 18, 2021	October 17, 2021	October 17, 2021
November 10, 2021	$0.35625	October 18, 2021	January 17, 2022	January 17, 2022
February 24, 2022	$0.35625	January 18, 2022	April 17, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on April 17, 2022.

The following table presents the dividends declared and paid on Series E Preferred Stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Period Beginning	For Period Ending	Date Paid
February 23, 2021	$0.359375	January 18, 2021	April 17, 2021	April 17, 2021
June 1, 2021	$0.359375	April 18, 2021	July 17, 2021	July 17, 2021
August 11, 2021	$0.359375	July 18, 2021	October 17, 2021	October 17, 2021
November 10, 2021	$0.359375	October 18, 2021	January 17, 2022	January 17, 2022
February 24, 2022	$0.359375	January 18, 2022	April 17, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on April 17, 2022.

The following table presents the dividends declared and paid on Series F Preferred Stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Period Beginning	For Period Ending	Date Paid
February 23, 2021	$0.3281250	January 18, 2021	April 17, 2021	April 17, 2021
June 1, 2021	$0.3281250	April 18, 2021	July 17, 2021	July 17, 2021
August 11, 2021	$0.3281250	July 18, 2021	October 17, 2021	October 17, 2021
November 10, 2021	$0.3281250	October 18, 2021	January 17, 2022	January 17, 2022
February 24, 2022	$0.3281250	January 18, 2022	April 17, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on April 17, 2022.

The following table presents the dividends declared and paid on Series G Preferred Stock during and after 2021:

Date Dividend Declared	Per Share Amount	For Period Beginning	For Period Ending	Date Paid
June 1, 2021	$0.1692708	May 28, 2021	July 17, 2021	July 17, 2021
August 11, 2021	$0.3046875	July 18, 2021	October 17, 2021	October 17, 2021
November 10, 2021	$0.3046875	October 18, 2021	January 17, 2022	January 17, 2022
February 24, 2022	$0.3046875	January 18, 2022	April 17, 2022	*

* The dividend declared on February 24, 2022 is scheduled to be paid on April 17, 2022.

FARMER MAC'S AUTHORITY TO BORROW FROM THE U.S. TREASURY

Farmer Mac is authorized 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. Farmer Mac's charter provides that the U.S. Treasury is required to purchase Farmer Mac's debt obligations up to the authorized limit if Farmer Mac certifies that:

- a portion of the guarantee fees assessed by Farmer Mac has been set aside as a reserve against losses arising out of Farmer Mac's guarantee activities in an amount determined by Farmer Mac's board of directors to be necessary and such reserve has been exhausted (that amount was $110.5 million as of December 31, 2021); and
- the proceeds of such obligations are needed 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. Farmer Mac would be required to repurchase any of its debt obligations held by the U.S. Treasury within a "reasonable time." As of December 31, 2021, Farmer Mac had not used this borrowing authority and does not expect to use this borrowing authority in the future.

The United States government does not guarantee payments due on securities guaranteed by Farmer Mac, funds invested in the equity or debt securities of Farmer Mac, any dividend payments on shares of Farmer Mac stock, or the profitability of Farmer Mac.

GOVERNMENT REGULATION OF FARMER MAC

General

Farmer Mac was created by federal statute in 1988 in the aftermath of the collapse of the agricultural credit delivery system. Farmer Mac's primary committees of jurisdiction in Congress – the Committee on Agriculture of the U.S. House of Representatives and the U.S. Senate Committee on Agriculture, Nutrition and Forestry – added requirements for Farmer Mac that had not been included in any of the other statutes establishing other GSEs. Unlike the other existing GSEs at the time, Farmer Mac was required to be regulated by an independent regulator, FCA, which has the authority to regulate Farmer Mac's safety and soundness. The statute creating Farmer Mac expressly requires that eligible Farm & Ranch loans meet minimum credit and appraisal standards that represent sound loans to profitable businesses. The enabling legislation also did not contain a specific federal securities law exemption, which had the effect of requiring Farmer Mac to comply with the periodic reporting requirements of the SEC, including filing annual and quarterly reports on the financial status of Farmer Mac and current reports when there are significant developments. Farmer Mac's charter also requires offerings of securities backed by eligible loans and guaranteed by Farmer Mac to be registered under the Securities Act of 1933 and related regulations (collectively, "Securities Act"), unless an exemption for an offering is available that is not based on Farmer Mac's status as an instrumentality of the United States.

Since Farmer Mac's creation, Congress has amended Farmer Mac's charter five times:

- in 1990 to authorize Farmer Mac to purchase, and guarantee securities backed by, USDA Securities;
- in 1991 to clarify Farmer Mac's authority to purchase its guaranteed securities, establish OSMO as Farmer Mac's financial regulator, and set minimum regulatory capital requirements for Farmer Mac;
- in 1996 to remove certain barriers to and restrictions on Farmer Mac's operations to be more competitive (e.g., allowing Farmer Mac to buy loans directly from lenders and issue guaranteed securities representing 100% of the principal of the purchased loans and modifying capital requirements);
- in 2008 to authorize Farmer Mac to purchase, and guarantee securities backed by, loans or interests in loans by lenders organized as cooperatives to borrowers to finance electrification and telecommunications systems in rural areas; and
- in 2018 to expand the acreage exception to the Farm & Ranch loan amount limitation from 1,000 acres to 2,000 acres, subject to FCA's feasibility assessment (which was completed in June 2019), and to repeal obsolete provisions and make technical corrections.

Farmer Mac's authorities and regulatory structure were not revised by legislation adopted in 2008 to regulate other GSEs.

Office of Secondary Market Oversight (OSMO)

As an institution of the FCS, Farmer Mac (including its subsidiaries) is subject to the regulatory authority of FCA. Farmer Mac's charter assigns to FCA, acting through OSMO within FCA, the responsibility for the examination of Farmer Mac and the general supervision of the safe and sound performance of the powers, functions, and duties vested in Farmer Mac by its charter. The charter also authorizes FCA, acting through OSMO, to apply its general enforcement powers to Farmer Mac. Farmer Mac (including its subsidiaries) is the only entity regulated by OSMO, which was created as a separate office in recognition of the different role that Farmer Mac plays in providing a secondary market, as compared to the roles of other FCS institutions as primary lenders. The Director of OSMO is selected by and reports to the FCA board.

Farmer Mac's charter requires an annual examination of the financial transactions of Farmer Mac and authorizes FCA to assess Farmer Mac for the cost of its regulatory activities, including the cost of any examination. Each year, OSMO conducts an examination of Farmer Mac to evaluate its safety and soundness, compliance with applicable laws and regulations, and mission achievement. The examination includes a review of Farmer Mac's capital adequacy, asset quality, management performance, earnings, liquidity, and sensitivity to interest rate risk. OSMO may also conduct additional oversight and examination activities unrelated to its annual examination of Farmer Mac at any other time it determines necessary. Farmer Mac is also required to file quarterly reports of condition with FCA.

Capital Standards

General Requirements. Farmer Mac's charter establishes three capital standards for Farmer Mac:

- Statutory minimum capital requirement. Farmer Mac's minimum capital level is an amount of core capital (stockholders' equity less accumulated other comprehensive income) equal to the sum of 2.75% of Farmer Mac's aggregate on-balance sheet assets, as calculated for regulatory purposes, plus 0.75% of Farmer Mac's aggregate off-balance sheet obligations, specifically including:
    - the unpaid principal balance of outstanding loan-backed securities guaranteed by Farmer Mac;
    - instruments issued or guaranteed by Farmer Mac that are substantially equivalent to securities guaranteed by Farmer Mac, including LTSPCs; and
    - other off-balance sheet obligations of Farmer Mac.
- Statutory critical capital requirement. Farmer Mac's critical capital level is an amount of core capital equal to 50% of the total minimum capital requirement at that time.
- Risk-based capital. The charter directs FCA to establish a risk-based capital stress test for Farmer Mac, using specified stress-test parameters.

Farmer Mac must comply with the higher of the minimum capital requirement and the risk-based capital requirement.

The risk-based capital stress test promulgated by FCA is intended to determine the amount of regulatory capital (core capital plus the allowance for losses) that Farmer Mac would need to maintain positive capital during a ten-year period in which:

- annual losses occur at a rate of default and severity "reasonably related" to the rates of the highest sequential two years in a limited U.S. geographic area; and
- interest rates are shocked by the lesser of 600 basis points or 50% of the ten-year U.S. Treasury rate, and interest rates remain at such level for the remainder of the period.

The risk-based capital stress test then adds an additional 30% to the resulting capital requirement for management and operational risk. Farmer Mac's risk-based capital requirement as of December 31, 2021 was $218.7 million, and Farmer Mac's regulatory capital of $1.2 billion exceeded that amount by approximately $1.0 billion. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Capital Requirements" for a presentation of Farmer Mac's current regulatory capital position.

Enforcement Levels. Farmer Mac's charter directs FCA to classify Farmer Mac within one of four enforcement levels to determine compliance with the capital standards established by Farmer Mac's charter. As of December 31, 2021, Farmer Mac was classified as within level I – the highest compliance level.

Failure to comply with the applicable required capital level in the charter would result in Farmer Mac being classified as within level II (below the applicable risk-based capital level, but above the minimum capital level), level III (below the minimum capital level, but above the critical capital level) or level IV (below the critical capital level). If Farmer Mac were classified as within level II, III or IV, the charter requires the Director of OSMO to take specified mandatory supervisory measures and provides the Director with discretionary authority to take various optional supervisory measures depending on the level in which Farmer Mac is classified. The mandatory measures applicable to level II and level III include:

- requiring Farmer Mac to submit and comply with a capital restoration plan;
- prohibiting the payment of dividends if the payment would result in Farmer Mac being reclassified as within a lower level and requiring the pre-approval of any dividend payment even if the payment would not result in reclassification as within level IV; and
- reclassifying Farmer Mac as within one level lower if it does not submit a capital restoration plan that is approved by the Director, or the Director determines that Farmer Mac has failed to make, in good faith, reasonable efforts to comply with such a plan and fulfill the schedule for the plan approved by the Director.

If Farmer Mac were classified as within level III, then, in addition to the mandatory supervisory measures described above, the Director of OSMO could take any of the following discretionary supervisory measures:

- imposing limits on any increase in, or ordering the reduction of, any obligations of Farmer Mac, including off-balance sheet obligations;
- limiting or prohibiting asset growth or requiring the reduction of assets;
- requiring the acquisition of new capital in an amount sufficient to provide for reclassification as within a higher level;
- terminating, reducing, or modifying any activity the Director determines creates excessive risk to Farmer Mac; or
- appointing a conservator or a receiver for Farmer Mac.

Farmer Mac's charter does not specify any supervisory measures, either mandatory or discretionary, to be taken by the Director if Farmer Mac were classified as within level IV.

The Director of OSMO has the discretionary authority to reclassify Farmer Mac to a level that is one level below its then current level (for example, from level I to level II) if the Director determines that Farmer Mac is engaging in any action not approved by the Director that could result in a rapid depletion of core capital or if the value of property subject to mortgages backing securities guaranteed by Farmer Mac has decreased significantly.

Capital Adequacy Requirements. Under FCA's rule on capital planning, Farmer Mac must develop and submit to OSMO for approval annually a plan for capital that considers the sources and uses of Farmer Mac's capital, addresses capital projections under stress scenarios, assesses Farmer Mac's overall capital adequacy, and incorporates a Farmer Mac board-approved policy on capital adequacy. In accordance with this regulation, Farmer Mac's board of directors oversees a policy that requires Farmer Mac to maintain an adequate level of "Tier 1" capital, consisting of retained earnings, paid-in-capital, common stock, qualifying preferred stock, and accumulated other comprehensive income allocable to "non-program" investments that are not included in the Agricultural Finance and Rural Infrastructure Finance lines of business. Under this policy, Farmer Mac must maintain at all times a Tier 1 capital ratio of at least 7.0% of risk-weighted assets, calculated using an advanced internal ratings based asset risk weighting regime that is consistent with current Basel-based principles.

The policy also requires Farmer Mac to maintain a "capital conservation buffer" of additional Tier 1 capital of more than 2.5% of risk-weighted assets. If the capital conservation buffer drops to various levels at or below 2.5%, as shown in the table below, the policy requires Farmer Mac to restrict distributions of current quarter Tier 1-eligible dividends and any discretionary bonus payments to an amount not to exceed the corresponding payout percentage specified in the table below, which represents the percentage of the cumulative core earnings for the four quarters immediately preceding the distribution date:

Capital Conservation Buffer (percentage of risk-weighted assets)	Payout Percentage (percentage of four quarters' accumulated core earnings)
greater than 2.5%	No limitation
greater than 1.875% to and including 2.5%	60%
greater than 1.25% to and including 1.875%	40%
greater than 0.625% to and including 1.25%	20%
equal to or less than 0.625%	0% (no payout permitted)

These distribution restrictions would remain for so long as the Tier 1 capital conservation buffer remains at or below the minimum level of 2.5%, and Farmer Mac's board of directors may consider other factors, such as earnings presented in accordance with generally accepted accounting principles in the United States ("GAAP") and other regulatory requirements, in determining whether to restrict capital distributions, including dividends and bonus payments. As of December 31, 2021, Farmer Mac's Tier 1 capital ratio was 14.7%. The calculation of Farmer Mac's Tier 1 capital ratio does not include certain interest rate risk components of the risk weighting of assets, which reflects the fact that Farmer Mac pursues an approach to funding its assets with liabilities of similar duration and convexity characteristics and therefore does not bear material interest rate risk in its portfolio. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Capital Requirements" for more information on Farmer Mac's Tier 1 capital ratio.

Liquidity Requirements

Liquidity Reserve Requirement and Supplemental Liquidity. Farmer Mac's Liquidity and Investment Regulations require that Farmer Mac maintain at all times a liquidity reserve sufficient to fund at least

90 days of the principal portion of maturing obligations and other borrowings. Farmer Mac may also maintain supplemental liquidity to fund obligations and borrowings maturing after 90 days. The investments that Farmer Mac holds as its liquidity reserve and as supplemental liquidity must consist of unencumbered and readily marketable assets that are diversified in accordance with categories prescribed by FCA, including limitations on asset class, dollar amount, issuer concentration, and credit quality. Farmer Mac must report, in writing, to OSMO no later than the next business day following the discovery of any breach of Farmer Mac's minimum liquidity reserve requirement.

Liquidity Management. Under the Liquidity and Investment Regulations, Farmer Mac must develop and approve annually a liquidity policy that outlines Farmer Mac's purpose and objectives for liquidity reserves, diversification requirements for liquidity reserves, target liquidity levels, maximum investment amounts as a percentage of Farmer Mac's program assets, exception parameters (and approval requirements), delegations of investment authority, and reporting requirements to Farmer Mac's board of directors and to OSMO. The regulations also require Farmer Mac to develop a liability maturity management plan and a contingency funding plan, each of which must be reviewed and approved annually by Farmer Mac's board of directors.

See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" for more information about Farmer Mac's liquidity and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk—Other Investments" for more information about Farmer Mac's eligible investments.

Item 1A. Risk Factors

Farmer Mac's business activities, financial performance, and results of operations are, by their nature, subject to risks and uncertainties, including those related to the agricultural industry, the rural utilities industry, access to the capital markets, the regulatory environment, the level of prevailing interest rates and overall market conditions. The following risk factors should be considered along with "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of this report, including the risks and uncertainties described in the "Forward-Looking Statements" section. Because new risk factors likely will emerge from time to time, management can neither predict all potential risk factors nor assess the effects of those factors on Farmer Mac's business, operating results, and financial condition or how much any factor, or combination of factors, may affect Farmer Mac's actual results and financial condition. If any of the following risks materialize, Farmer Mac's business, financial condition, or results of operations could be materially and adversely affected. Farmer Mac undertakes no obligation to update or revise this risk factor discussion, unless required by applicable law.

COVID-19 Pandemic Risk

The continuing effects of the COVID-19 pandemic are uncertain and may heighten the risk factors described in this report or could otherwise have a material adverse effect on Farmer Mac's business, operations, operating results, financial condition, liquidity, or capital levels.

The COVID-19 pandemic continues to impact the global economy and the lives of individuals throughout the world. How much the pandemic affects Farmer Mac’s business, results of operations, and financial condition will depend on many factors beyond Farmer Mac’s control, including:

- the duration and severity of the pandemic and the effectiveness of government and public health responses, including to the prevalence of any new strains of the novel coronavirus;
- how quickly and to what extent normal economic and operating conditions can resume, including whether any future COVID-19 outbreaks interrupt economic recovery; and
- whether the COVID-19 pandemic causes any residual negative effects to Farmer Mac's business once the pandemic has subsided.

The full effects of the COVID-19 pandemic on Farmer Mac’s business, results of operations, and financial condition may not be fully known for some time and may heighten the risk factors described below or may otherwise materially and adversely affect Farmer Mac’s business, operations, operating results, financial condition, liquidity, or capital levels.

Credit and Counterparty Risk

Factors outside of Farmer Mac's or borrowers' control may impair borrowers' profitability and ability to repay their loans in Farmer Mac's portfolio, which could have a material adverse effect on Farmer Mac's financial condition, results of operations, liquidity, or capital levels.

External factors beyond Farmer Mac's or borrowers' control could impair borrowers' profitability, such as severe or protracted adverse weather and related effects; volatility in demand for agricultural products or electricity in rural areas; variability in borrowers' input costs; supply-chain disruptions that negatively impact borrowers' production or distribution capabilities, protracted regional, domestic, or global economic stress (whether due to the continued COVID-19 pandemic or otherwise); legislative or regulatory actions affecting rural borrowers; U.S. trade policy affecting the demand for agricultural exports or the price of imports required for borrowers' operations; increased competition among producers due to oversupply or available alternatives; and adverse changes in interest rates and land values. Any of these factors could put downward pressure on the profitability of a farming, agribusiness or rural utilities operation, which could then inhibit the related borrower's repayment capacity on one or more loans that Farmer Mac may have from that borrower in its portfolio.

Farmer Mac assumes the ultimate credit risk of borrower defaults on its agricultural mortgage and rural utilities loan assets, and Farmer Mac's earnings, which come from net interest income, guarantee fees, and commitment fees on those assets, depend significantly on their performance. Widespread and sustained repayment shortfalls on loans in Farmer Mac's portfolio could result in losses, particularly if the value of the available collateral does not cover Farmer Mac's exposure, and this could have a material adverse effect on Farmer Mac's financial condition, results of operations, liquidity, or capital levels.

Climate change and the occurrence of weather-related events, or other natural or environmental disasters could have a material adverse effect on Farmer Mac's business, operating results, or financial condition.

In addition to the general risks posed by adverse weather conditions, Farmer Mac's exposure to credit risk and the market value of loan collateral is potentially subject to risks associated with the long-term effects of climate change, as farmers and ranchers may face increasing, as well as increasingly-severe, weather incidents. The U.S. experienced 20 separate billion-dollar weather disasters in 2021, the second-highest level in the 40 years tracked by the National Oceanic and Atmospheric Administration behind 2020. Many of those events affected agriculture, including a midwestern derecho, western wildfires and western drought. Many climatologists predict increases in average temperatures, more extreme temperatures and increases in volatile weather over time. These physical changes may prompt changes in regulations or consumer preferences, which in turn could have negative consequences for the business models of borrowers, such as increasing costs, reducing the value of assets and increasing operating expenses. For example, in 2021, "exceptional drought" conditions, the most severe drought classification, covered significant areas of the western states, and approximately half of the continental United States experienced abnormally dry conditions or worse. Although drought conditions improved in fourth quarter 2021 and early weeks of 2022, 12% of the continental United States remained in exceptional or extreme drought as of February 1, 2022, according to data from the National Drought Mitigation Center. The effects of climate change may be more significant along coastlines, such as in the California coastal areas, due to rising sea levels resulting from the melting of polar ice caps, which could result in an increased risk of coastal erosion, flooding, degradation in the quality of groundwater aquifers and an expansion of agricultural weed and pest populations. As a result, the effects of climate change could make some agricultural properties less suitable for farming or for other alternative uses. For example, 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. These and other effects of climate change could have an adverse impact on farming operations and the value of loan collateral, which could have a material adverse effect on Farmer Mac's business, operating results, or financial condition.

Concentrations in Farmer Mac's loan or investments portfolios, or to one or more borrowers or counterparties, may increase Farmer Mac's exposure to credit risk, which could materially and adversely affect its business, operating results, and financial condition.

Farmer Mac's exposure to credit risk may increase due to concentrations in its loan portfolio, which can include concentrated exposure to particular commodities, geographic regions, or collateral types, as well as concentrations in processing and manufacturing segments of agricultural supply chains. Widespread weakening in the financial condition of borrowers within a particular geographic region, that produce particular commodities or rely on particular collateral, or that engage in processes or production that is dependent on a fluid supply chain could negatively affect Farmer Mac’s financial condition if sufficient diversity in these areas does not successfully mitigate concentration risk.

Farmer Mac's credit risk may also increase due to decline in the collateral values securing the loans in Farmer Mac's portfolio. Single-use or highly improved collateral, such as storage and processing facilities or permanent plantings, increase the risk of undercollateralization in a default scenario, because producers requiring single-use or highly improved collateral are generally less able to adapt their operations or switch functional production when faced with adverse conditions. Highly improved properties also face higher risk of loss in a default scenario, as the pool of potential purchasers in a sale or foreclosure action may be smaller for a highly improved property than for a property that is adaptable to multiple uses. The farming of permanent plantings generally involves more risk than farming of annual row crops because permanent plantings generally require more time and capital to plant and permanent plantings are more expensive to replace in the event of disease, drought, mismanagement, catastrophic condition (such as wildfire), or adverse weather conditions.

Farmer Mac's exposure to credit risk may also increase due to concentrated exposure to a particular borrower or counterparty. Farmer Mac’s Farm & Ranch portfolio consists of loans varying in size and by borrower, including large exposures ($25 million or more) to individual borrowers. The default of any one of these borrowers could negatively affect Farmer Mac's financial condition. Farmer Mac also has concentrated exposures to individual business counterparties on AgVantage securities, which are general obligations of institutional counterparties secured by eligible loans held by the issuing institution. Although AgVantage securities are collateralized by eligible loans in a principal amount equal to or greater than the principal amount of the securities outstanding, Farmer Mac could suffer losses if the market value of the loan collateral declines and the counterparty defaults. Taking possession of the loan collateral upon a default by the AgVantage counterparty could also result in higher current expected credit losses for Farmer Mac's loans held on balance sheet, as well as increased capital requirements. Most of Farmer Mac's AgVantage exposure is concentrated in a few issuers. As of December 31, 2021, $7.6 billion of the $8.1 billion of AgVantage securities outstanding had been issued by three counterparties. A default by any of these counterparties could have a significant adverse effect on Farmer Mac's business, operating results, and financial condition.

Farmer Mac's exposure to credit risk may also increase due to concentrated exposure to one or more investment types or counterparties in the investment portfolio Farmer Mac maintains for liquidity. This investment portfolio consists primarily of cash and cash equivalents, U.S. Treasury securities, investment securities guaranteed by U.S. Government agencies and GSEs, and asset-backed securities backed primarily by U.S. Government-guaranteed loans. Farmer Mac regularly reviews concentration limits to ensure that its investments are appropriately diversified and comply with policies approved by Farmer Mac's board of directors and with applicable FCA regulations, but Farmer Mac is still exposed to credit risk from issuers of the investment securities it holds, particularly to issuers to whom Farmer Mac may have a higher concentration of exposure relative to the rest of Farmer Mac's investment portfolio. For example, as of December 31, 2021, Farmer Mac held at fair value $2.3 billion of investment securities guaranteed by GSEs. A default by multiple issuers of investment securities held by Farmer Mac or by a single issuer of investment securities in which Farmer Mac is more heavily concentrated could have an adverse effect on Farmer Mac's business, operating results, and financial condition.

Farmer Mac Guaranteed Securities and LTSPCs expose Farmer Mac to significant contingent liabilities, and Farmer Mac's ability to fulfill its obligations under its guarantees and LTSPCs may be limited.

Farmer Mac's guarantee and purchase commitment obligations to third parties, including LTSPCs and securities guaranteed by Farmer Mac, are obligations of Farmer Mac only and are not backed by the full faith and credit of the United States, FCA, or any other agency or instrumentality of the United States other than Farmer Mac. As of December 31, 2021, Farmer Mac had $3.8 billion of contingent liabilities related to LTSPCs and securities issued to third parties and guaranteed by Farmer Mac, which represents Farmer Mac's exposure if all loans underlying these LTSPCs and guarantees defaulted and Farmer Mac recovered no value from the related collateral. If this were to occur, the funds available for payment on these guarantees and LTSPCs could be substantially less than the aggregate amount of the corresponding liabilities. As of December 31, 2021, Farmer Mac held cash, cash equivalents, and other investment securities with a fair value of $4.8 billion that could be used as a source of funds for payment on its obligations, including its guarantee and LTSPC obligations. Although Farmer Mac believes that it remains well-collateralized on the assets underlying its guarantee and LTSPC obligations to third parties and that the estimated probable losses for these obligations remain low relative to the amount available for payment of claims on these obligations, Farmer Mac's total contingent liabilities for these obligations could exceed the amount it may have available for payment of Farmer Mac's obligations, including claims on Farmer Mac's contingent obligations. See "Management's Discussion and Analysis—Risk Management—Credit Risk – Loans and Guarantees" for more information on Farmer Mac's management of credit risk.

Farmer Mac is exposed to counterparty risk on both its cleared and non-cleared swaps transactions that could materially and adversely affect its business, operating results, and financial condition.

Farmer Mac uses interest rate swap contracts and hedging arrangements to manage its interest rate risk. Farmer Mac clears a significant portion of its interest rate swaps through a swap clearinghouse and uses the services of a futures commission merchant to post and receive mark-to-market margin amounts. Farmer Mac also transacts non-cleared (bilateral) derivative contracts directly with swap counterparties and posts and receives collateral to secure the market value of those contracts. A failure of any of these counterparties could cause intra-day disruption for Farmer Mac's swap operations if the failure were to prompt a termination of all or part of Farmer Mac's swap positions or if Farmer Mac were unable to quickly access margin or collateral amounts. These conditions could be exacerbated in volatile market conditions, in which the market could move against Farmer Mac's position before Farmer Mac had time to reposition its swaps. Farmer Mac's derivative contracts executed before March 2017 have market value thresholds ranging from $15 to $25 million that must be exceeded before Farmer Mac must post collateral. Repositioning these swaps under current margin rules if the related counterparty were to fail could require Farmer Mac to post significant collateral within a short time frame. Any of these factors resulting from a failure of the swap clearinghouse, futures commission merchant, or any of Farmer Mac's bilateral swap counterparties could have a negative effect on Farmer Mac's operations and liquidity and could expose Farmer Mac to more interest rate risk, which could materially and adversely affect its business, operating results, and financial condition. As of December 31, 2021, the aggregate notional balance of Farmer Mac's cleared swaps was $14.9 billion, and the aggregate notional balance of Farmer Mac's non-cleared swaps was $2.6 billion (including $0.1 billion notional amount of non-cleared swaps executed before March 2017).

Strategic/Business Risk

Farmer Mac's business, operating results, financial condition, and capital levels may be materially and adversely affected by external factors that may affect the demand for Farmer Mac's secondary market, the price or marketability of Farmer Mac's products, or Farmer Mac's ability to offer its products and services.

Farmer Mac's business, operating results, financial condition, and capital levels may be materially and adversely affected by external factors that may affect the price or marketability of Farmer Mac's products and services or Farmer Mac's ability to offer its products and services, including, but not limited to:

- disruptions in the capital markets;
- competitive pressures in Farmer Mac's loan purchase and guarantee activities or in the issuance of its debt securities;
- changes in interest rates that may increase Farmer Mac's funding costs;
- market or customer perception of Farmer Mac's reputation;
- legislative or regulatory developments adversely affecting Farmer Mac's ability to offer new products, the ability or motivation of lenders to participate in Farmer Mac's lines of business, or the cost of related corporate activities;
- reduced demand for agricultural real estate loans or Rural Utilities loans due to regional, domestic, or global economic conditions; and
- expanded funding alternatives available to agricultural and rural utilities borrowers.

An inability to access the equity and debt capital markets could have a material adverse effect on Farmer Mac's business, operating results, financial condition, liquidity, and capital levels.

Farmer Mac's ability to operate its business, meet its obligations, generate asset volume growth, and fulfill its statutory mission depends on Farmer Mac's continued access to the U.S. financial markets at favorable rates and terms to remain adequately capitalized through the issuance of equity and with adequate access to liquidity through the issuance of debt securities. The issuance of debt securities is Farmer Mac's primary source for repaying or refinancing existing debt and to fund contingent liabilities, as needed. Farmer Mac's ability to access the debt and equity markets to raise capital, fund its assets, repay debt, and earn net interest income depends on market perception of Farmer Mac. If Farmer Mac were unable to access the U.S. financial markets to issue equity or debt securities at favorable rates and terms, Farmer Mac's business, operating results, liquidity, or financial condition could be adversely affected.

The loss of business from key business counterparties or customers, including AgVantage counterparties, could weaken Farmer Mac's business and decrease its revenues and profits.

Farmer Mac's business and ability to generate revenues and profits largely depends on its ability to purchase eligible loans or place eligible loans under guarantees or LTSPCs and to purchase or guarantee AgVantage securities. Farmer Mac conducts a significant portion of its business with a few business counterparties. This concentration of business could potentially result in increased variability in Farmer

Mac's business as existing assets pay down or mature and the status and needs of Farmer Mac's customers evolve. In 2021, ten institutions generated approximately 62% of loan purchase volume in the Agricultural Finance line of business. As of December 31, 2021, approximately 93.9% of the $8.1 billion outstanding principal amount of AgVantage securities (of which $2.6 billion and $0.9 billion will be maturing in 2022 and 2023, respectively) were issued by three institutions. As of December 31, 2021, transactions with two institutions represented nearly all of the business volume under Farmer Mac's Rural Infrastructure Finance line of business. Farmer Mac's ability to maintain the current relationships with its business counterparties or customers and the business generated by those business counterparties or customers is significant to Farmer Mac's business. As a result, the loss of business from any one of Farmer Mac's key business counterparties could decrease Farmer Mac's revenues and profitability. Farmer Mac may be unable to replace the loss of business of a key business counterparty or customer with alternate sources of business due to limitations on the types of assets eligible for Farmer Mac's secondary market, which could adversely affect Farmer Mac's business and decrease its revenues and profits.

Farmer Mac's efforts to balance fulfilling its mission with providing a return to its stockholders may result in business transactions that involve lower returns or higher risk, which could adversely affect its business, operating results, or financial condition.

Congress created Farmer Mac to provide for a secondary market for agricultural mortgage loans, Rural Utilities loans, and the guaranteed portions of USDA-guaranteed loans. In pursuing this mission, Farmer Mac's secondary market activities are designed to:

- increase the availability of credit to rural borrowers at stable interest rates;
- provide greater liquidity and lending capacity in extending credit to rural borrowers; and
- provide an arrangement for new lending by facilitating capital market investments in funding for rural borrowers, including funds at fixed rates of interest.

Farmer Mac's charter provides that its standards for Farm & Ranch loans shall not discriminate against small originators or small agricultural mortgage loans of at least $50,000. The charter also requires Farmer Mac's board of directors to promote and encourage the inclusion of qualified loans for small farms and family farmers in the agricultural mortgage secondary market.

Although Farmer Mac strives to undertake its mission-related activities in a manner consistent with providing an accretive return to Farmer Mac's stockholders, these activities could contribute to a lower return to stockholders than if Farmer Mac's sole purpose were to maximize stockholder value. If Farmer Mac were to undertake activities involving greater risk or lower returns to satisfy its mission, Farmer Mac's business, operating results, or financial condition could be adversely affected.

A few stockholders who own large amounts of Farmer Mac voting common stock may seek to influence Farmer Mac's business, strategy, or board composition, and the interests of these stockholders may differ from the interests of Farmer Mac or other holders of Farmer Mac's common stock.

The ownership of Farmer Mac's two classes of voting common stock is concentrated in a few institutions. Four financial institutions hold approximately 53% of Farmer Mac's Class A voting common stock, with 31% held by one institution. Five FCS institutions hold approximately 97% of Farmer Mac's Class B voting common stock (two of which are related to each other through a parent-subsidiary relationship). The holders of Farmer Mac's Class A voting common stock and the holders of Farmer Mac's Class B voting common stock each have the right to elect one-third of the membership of Farmer

Mac's board of directors. Many of these holders are rural lenders that may compete directly with each other. As long as Farmer Mac's Class A and Class B voting common stock is highly concentrated in a few institutions, these institutions could seek to influence (and may succeed in influencing), Farmer Mac's business, strategy, or board composition in a way that may not be in the best interests of either Farmer Mac or other stockholders.

Operational Risk

The inadequacy or failure of Farmer Mac's operational systems, cybersecurity program, internal controls or processes, or infrastructure, or those of third parties, could have a material adverse effect on Farmer Mac's business, operating results, or financial condition.

Farmer Mac is exposed to operational risk due to the complex nature of its business operations and the processes and systems used to undertake its business activities and comply with regulatory requirements. Operational risk includes the risk of loss to Farmer Mac resulting from:

- inadequate or failed internal processes, systems, cybersecurity program, or infrastructure;
- Farmer Mac's inability to successfully implement enhancements to any of these or migrate to new systems or infrastructure;
- failed execution based on human error;
- inadequate or failed internal controls or processes to detect or prevent fraud or other violations of law or regulations; or
- external events, including a disruption involving physical site access, cyber incidents, catastrophic events, natural disasters, terrorist activities, or disease pandemics.

Farmer Mac relies on business processes that largely depend on people, technology, and the use of complex systems and models to manage its business, process a high volume of daily transactions, and generate the records on which Farmer Mac's financial statements are based. Inadequacies or failures in Farmer Mac's internal processes, personnel, systems, cybersecurity program, or infrastructure could lead to a significant disruption in its business operations, financial and economic loss, errors in its financial statements, impairment of its liquidity, liability or service interruptions to its customers, increased regulatory or legislative scrutiny, or reputational damage.

In response to the challenges presented by the COVID-19 pandemic, Farmer Mac has modified its business practices to focus on protecting its employees and the public while continuing to fulfill its critical mission and maintaining its regular business operations in support of the farmers, ranchers, and rural utilities of America. On March 12, 2020, Farmer Mac activated its Business Continuity Plan (“BCP”) and has been operating uninterrupted since then with most employees working remotely from their homes. Farmer Mac has provided guidance and support to its employees to ensure that they have the tools and knowledge needed to effectively work from home, and Farmer Mac’s technology platform and BCP have been functioning as designed in support of all functions of the organization. Nonetheless, because the technology in employees’ homes may not be as robust and resilient as in Farmer Mac’s offices and could cause the networks, information systems, applications, and other tools available to employees to be more limited or less reliable than Farmer Mac’s in-office technology, the continuation of these work-from-home measures introduces more operational risk. These risks include but are not limited to greater cybersecurity risk and disruption or failure of local technology networks, which could impair Farmer Mac's ability to perform critical functions. The realization of any of these risks could have a material adverse effect on Farmer Mac’s business, results of operations, or financial condition.

The potential for operational risk exposure also exists as a result of Farmer Mac's interactions with, and reliance on, third parties. Farmer Mac's business relies on its ability to process, evaluate, and interpret significant amounts of information, much of which third parties provide. Yet Farmer Mac's ability to implement safeguards preventing disruption to third-party systems or infrastructure is more limited than for its own systems or infrastructure. If the financial, accounting, data processing, backup, information technology, or other operating systems and infrastructure of third parties with whom Farmer Mac interacts or upon whom it relies fail to operate properly or are disrupted, then Farmer Mac's operations and its ability to conduct its business in the ordinary course may be adversely affected, which could have a material adverse effect on Farmer Mac's business, results of operations, or financial condition.

Farmer Mac's business depends, in part, on effective and reliable loan servicing, and Farmer Mac's internal loan servicing function and reliance on third-party servicers could expose Farmer Mac to operational risks that could adversely affect its business, operating results, or financial condition.

Effective and reliable loan servicing is essential for Farmer Mac to successfully operate its business. During third quarter 2021, Farmer Mac expanded its internal loan servicing function through a strategic acquisition that included the loan servicing rights for a sizeable portion of Farmer Mac's Agricultural Finance mortgage loan and USDA Securities portfolios, as well as experienced servicing personnel and an operational servicing platform. This strategic acquisition has required Farmer Mac to implement processes and controls for a business function that Farmer Mac has previously not operated and has minimal experience executing and managing. Farmer Mac also continues to rely on experienced third-party servicers to service the portion of Farmer Mac's Agricultural Finance mortgage loan portfolio not serviced directly by Farmer Mac. Although Farmer Mac has established servicing standards and requirements to which these third-party servicers are required by contract to adhere and on which they must report to Farmer Mac, Farmer Mac does not manage the processes and controls of these third-party servicers. The ineffective implementation, operation, or oversight of one or more of the servicing processes or controls employed by Farmer Mac or any of its third-party servicers could expose Farmer Mac to operational risk that could adversely affect Farmer Mac's business, operating results, or financial condition.

Any deficiency, failure, interruption, or breach in Farmer Mac's or our service providers' technology and information systems, infrastructure, or cybersecurity program, including the occurrence of successful cyber-attacks, could result in a loss of business, damage to Farmer Mac's reputation, the disclosure or misuse of confidential or proprietary information, or increased costs or liability to Farmer Mac, which could adversely affect Farmer Mac's business, operating results, or financial condition.

Farmer Mac relies heavily on technology and information systems, including from third parties, for the secure collection, processing, transmission, and storage of confidential, proprietary, and personal information in our information systems (and those of third parties) to conduct and manage its business operations. These technology and information systems encompass an integrated set of hardware, software, infrastructure, and personnel organized to facilitate the planning, control, coordination, operations, and decision-making processes within Farmer Mac. As the importance and complexity of Farmer Mac's technology and information systems has increased, and as new technologies are developed that are used by our customers, Farmer Mac, or our service providers to support our business and operations, so too have the risks posed to Farmer Mac's information systems and data from cybersecurity attacks that threaten the confidentiality, integrity, or availability of Farmer Mac's information technology assets and resources and its data. Like many other financial institutions, Farmer Mac and its service providers face regular attempts to gain unauthorized access to, or disrupt, its information systems and access or acquire its data, including from organized criminal groups, hackers, nation states, activists, insiders, and other unauthorized third parties. These threats come from a variety of different sources, including cyber-attacks, computer viruses, malware, exploits of system and network vulnerabilities, human error, phishing, ransomware, and distributed denial of service attacks. The methods used to gain unauthorized access to or disrupt our information systems and data, or those of our service providers, are evolving. We may not be able to prevent or recognize them and may be unable to implement effective preventive measures or proactively address these threats until after a cybersecurity event has been discovered. Moreover, any employees or agents of Farmer Mac's (or its third-party customers or vendors) who have authorized access to confidential, proprietary, or personal information could also intentionally, inadvertently, or erroneously disseminate the information to unauthorized third parties.

Although Farmer Mac has implemented what we believe is an appropriate information security program with cybersecurity procedures, policies, practices, and controls, Farmer Mac may be unable to prevent unauthorized access to its information technology assets or data, resulting in the unauthorized access to or acquisition, destruction, alteration, release, theft, or loss of confidential, proprietary, or personal data of Farmer Mac, our employees, our customers, or our third-party vendors, which could disrupt our operations and ability to conduct business with customers, loan servicers, service providers, or other counterparties, adversely affect Farmer Mac's business, operating results, reputation, or financial condition, cause financial loss or costs, cause loss of customers or vendors, and result in regulatory inquiries, enforcement proceedings, or litigation. Also, the risk of unauthorized access to confidential, proprietary, or personal information through information system breaches or inadvertent dissemination may be heightened in a remote-working environment, which is currently more prevalent due to the COVID-19 pandemic.

Farmer Mac relies on third-party service providers to facilitate our business operations and our cybersecurity program, including for the secure collection, processing, transmission, and storage of confidential, proprietary, and personal information. The control systems, cybersecurity program, infrastructure, and personnel associated with third parties with which we do business or obtain services are beyond our control. Cybersecurity attacks or disruptions of software, hardware, or infrastructure of third parties may adversely affect our business, systems, and controls.

Failure by Farmer Mac's third-party loan servicers, information systems providers, and other service providers to protect confidential information from unauthorized access and dissemination could result in liability for Farmer Mac or damage Farmer Mac's reputation, which could have a negative effect on Farmer Mac's business, operating results, or financial condition.

Farmer Mac relies on third parties, including loan servicers, information systems providers, software-as-a-service (SaaS) providers, cloud computing service providers, and other service providers, to perform various functions that support Farmer Mac's business and operations. Farmer Mac depends on these third parties to collect, process, and store a variety of confidential, proprietary, or personal information, including sensitive financial information. Just as Farmer Mac is subject to numerous cyber attacks from a variety of actors, so too are these third parties. Although Farmer Mac requires third parties who collect, process, or store confidential, proprietary, or personal data to adhere to security policies, processes, and controls, if a third party is unable to prevent unauthorized access to its information technology assets or data, it could result in the unauthorized access to or acquisition, destruction, alteration, release, theft, or loss of confidential, proprietary, or personal data of Farmer Mac, our employees, or our customers, which could disrupt our operations and ability to conduct business with customers, loan servicers, service providers, or other counterparties, adversely affect Farmer Mac's business, operating results, reputation, or financial condition, cause financial loss or costs, cause loss of customers or vendors, or result in regulatory inquiries, enforcement proceedings, or litigation.

If Farmer Mac's management of risk associated with its loan assets and investment securities based on model assumptions and output is not effective, its business, operating results, financial condition, or capital levels could be materially adversely affected.

Farmer Mac continually develops and adapts profitability and risk management models to adequately address a wide range of possible market developments. Some of Farmer Mac's qualitative tools and metrics for managing risk are based on its use of observed historical market behavior. Farmer Mac applies statistical and other tools to these observations to quantify its risks. These tools and metrics may fail to predict future or unanticipated risks or may not be effective in mitigating its risk exposure in all economic market environments or against all types of risk, which could expose Farmer Mac to material unanticipated losses. The inability of Farmer Mac to effectively identify and manage the risks inherent in its business could have a material adverse effect on its business, operating results, financial condition, or capital levels.

Farmer Mac's efforts to expand product offerings and services to its customers exposes Farmer Mac to operational risk that could materially and adversely affect its business, operating results, or financial condition.

As the needs of Farmer Mac's customer base and rural America evolve, Farmer Mac seeks to respond by offering new products and services to meet these needs. As Farmer Mac expands its product offerings and services, it is exposed to operational risk in implementing these new products and services. New products and services may require new operational processes, which often require new internal controls to manage new risks that these new processes present. If these controls are insufficient or ineffective to manage the risks inherent in these new processes, or if there is human error in executing these new controls either due to their novelty or otherwise, Farmer Mac could face financial loss, reputational damage, or regulatory enforcement, which could materially and adversely affect Farmer Mac's business, operating results, or financial condition.

Market Risk

Farmer Mac is exposed to interest rate risk that could materially and adversely affect its operating results or financial condition.

Farmer Mac is subject to interest rate risk due to the timing differences in the cash flows of the assets it holds and the liabilities issued to fund those assets. Farmer Mac's primary strategy for managing interest rate risk is to fund asset purchases with debt together with financial derivatives that have similar duration and convexity characteristics to help mitigate impacts from interest rate changes across the yield curve. However, the ability of borrowers to prepay their loans before the scheduled maturities increases the likelihood of asset and liability cash flow mismatches. In a changing interest rate environment, these cash flow mismatches affect Farmer Mac's earnings if assets repay sooner than expected and the resulting cash flows must be reinvested in lower-yielding investments, particularly if Farmer Mac's related funding costs cannot be correspondingly repaid. Conversely, if assets repay more slowly than anticipated and the associated debt issued to fund the assets must be reissued at a higher interest rate, Farmer Mac's earnings could be adversely affected.

Volatility in market conditions during 2020 stemming from the effects of the COVID-19 pandemic prompted the Federal Reserve to significantly lower the target range for the federal funds rate, resulting in a low interest rate environment during 2020 and 2021. The Federal Reserve has signaled that it intends to increase the target range for the federal funds rate and is tapering its purchases of U.S. Treasury and GSE mortgage-backed securities. The resulting potential for higher interest rates may create periods of market volatility that could adversely affect Farmer Mac's ability to manage interest rate risk, which could have a material adverse effect on Farmer Mac's operating results or financial condition.

Farmer Mac is also subject to repricing risk, which is the risk that Farmer Mac's funding cost relative to a benchmark index (for example, the London Interbank Offered Rate known as "LIBOR" or the Secured Overnight Financing Rate known as "SOFR") will increase from the time the initial funding was issued and the time the liabilities are re-funded. This repricing risk arises from a funding strategy whereby Farmer Mac issues floating rate debt across a variety of maturities to fund floating or synthetically floating rate assets that on average may have longer maturities. A significant increase in the difference between Farmer Mac's funding cost relative to the benchmark index, including LIBOR and SOFR, could compress spread income on the assets Farmer Mac holds and seeks to re-fund with the higher cost funding. Widespread compression within a short timeframe could adversely affect Farmer Mac's operating results or financial condition.

Changes in interest rates relative to Farmer Mac's management of interest rate risk through derivatives may cause volatility in financial results and capital levels and may adversely affect Farmer Mac's net income, liquidity position, or operating results.

Farmer Mac enters into financial derivatives transactions to hedge interest rate risks inherent in its business and carries its financial derivatives at fair value in its consolidated financial statements. Although Farmer Mac's financial derivatives provide economic hedges of interest rate risk, changes in the fair values of financial derivatives can cause volatility in net income and in capital, particularly if those financial derivatives are not designated in hedge accounting relationships or if there is any ineffectiveness in a hedge accounting relationship. As interest rates increase or decrease, the fair values of Farmer Mac's derivatives change based on the position Farmer Mac holds relative to the specific characteristics of the derivative. Farmer Mac's core capital available to meet its statutory minimum capital requirement can be affected by changes in the fair values of financial derivatives, as noted above. Adverse changes in the fair values of Farmer Mac's financial derivatives that are not designated in hedge accounting relationships and any hedge ineffectiveness that results in a loss would reduce the amount of core capital available to meet this requirement. In 2021 and 2020, Farmer Mac recorded a loss of $5.1 million and a loss of $3.7 million, respectively, from changes in the fair values of its financial derivatives as a result of movements in interest rates during those years. In addition, Farmer Mac recorded losses of $1.5 million and $9.2 million in 2021 and 2020, respectively, related to ineffectiveness in hedge accounting relationships.

Changes in interest rates have required, and in the future may require, Farmer Mac to post cash or investment securities to collateralize its derivative exposures due to corresponding changes in the fair market values of these derivatives. If changes in interest rates were to result in a significant decrease in the fair value of Farmer Mac's derivatives, Farmer Mac would be required to post cash, cash equivalents, or investment securities, possibly within a short period of time, to satisfy its obligations under its derivatives contracts. As of December 31, 2021, Farmer Mac posted $16.6 million of cash and $177.9 million of investment securities as collateral for its derivatives in net liability positions. If Farmer Mac is required to fully collateralize a significant portion of its derivatives in an adverse interest rate environment, it could have a material adverse effect on Farmer Mac's liquidity position or operating results.

Discontinuation of the LIBOR benchmark interest rate could adversely affect Farmer Mac's business, operating results, or financial condition.

In July 2017, the United Kingdom's Financial Conduct Authority ("UKFCA"), which regulates U.S. Dollar LIBOR ("LIBOR"), announced that it would no longer persuade or compel banks to submit rates for the calculation of LIBOR after 2021 and would support the LIBOR indexes through 2021 to allow for a transition to any alternative reference rates. In November 2020, the UKFCA and the ICE Benchmark Administration, which administers LIBOR, announced that most tenors of LIBOR would continue to be published through June 2023. These announcements indicate that the continuation of LIBOR in its current form will be discontinued after June 2023. Farmer Mac continues to evaluate the potential effect on its business of the replacement of the LIBOR benchmark interest rate, including using replacement benchmark interest rates such as SOFR. As of December 31, 2021, Farmer Mac held $3.6 billion of floating rate assets in its lines of business and its investment portfolio, had issued $1.1 billion of floating rate debt, and had entered into $13.7 billion notional amount of interest rate swaps, each of which resets based on LIBOR. In addition, Farmer Mac's Series C Preferred Stock will be indexed to LIBOR after July 17, 2024. The market transition away from LIBOR and towards an alternative benchmark interest rate that may be developed is expected to be complicated and may require the development of term and credit adjustments to accommodate for differences between the benchmark interest rates. The introduction of an alternative reference rate may also introduce additional re-funding and repricing risk for Farmer Mac if an alternative benchmark interest rate index is used along with LIBOR during a transition period. If an alternative benchmark interest rate does not become widely used or accepted in place of LIBOR, then there may be uncertainty or differences in the calculation of the applicable interest rate or payment amounts depending on the terms of the governing instruments for Farmer Mac's assets and liabilities. This could result in different financial performance for previously booked transactions, require different hedging strategies, or require renegotiation of previously booked transactions, and may affect Farmer Mac's existing transaction data, products, systems, operations and pricing processes, which could adversely affect Farmer Mac's business, operating results, or financial condition.

Financial Risk

Incorrect estimates and assumptions by management in preparing financial statements could adversely affect Farmer Mac's business, operating results, reported assets and liabilities, financial condition, reputation, or capital levels.

Farmer Mac's accounting policies and methods are fundamental to how it records and reports its financial condition and results of operations. Some of these policies and methods require management to make estimates and assumptions in preparing Farmer Mac's consolidated financial statements. Incorrect estimates and assumptions by management in connection with preparing Farmer Mac's consolidated financial statements could adversely affect the reported amounts of assets and liabilities and the reported amounts of income and expenses. For example, as of December 31, 2021, Farmer Mac's assets and liabilities recorded at fair value included financial instruments valued at $6.4 billion whose fair values management estimated in the absence of readily observable fair values (in other words, level 3). These financial instruments measured with significant unobservable inputs represented 25.3% of total assets and 62.2% of financial instruments measured at fair value as of December 31, 2021. See "Management's Discussion and Analysis—Critical Accounting Estimates—Fair Value Measurement" for more information about fair value measurement. If management makes incorrect assumptions or estimates that result in understating or overstating reported financial results, it could materially and adversely affect Farmer Mac's business, operating results, reported assets and liabilities, financial condition, reputation, or capital levels.

Changes in accounting standards or in applying accounting policies could adversely affect Farmer Mac's business, operating results, financial condition, or capital levels.

Farmer Mac is subject to the requirements of entities that set and interpret the accounting standards governing the preparation of Farmer Mac's consolidated financial statements. These entities, which include the Financial Accounting Standards Board ("FASB"), the SEC, and Farmer Mac's independent registered public accounting firm, may add new accounting standards or change their interpretations of how those standards should be applied. These changes may be difficult to predict and could affect how Farmer Mac records and reports its financial condition and results of operations. In some cases, Farmer Mac could be required to apply a new or revised standard retrospectively, potentially resulting in changes to previously reported financial results. For example, the FASB issued a new accounting standard in 2016, which was effective for Farmer Mac on January 1, 2020, that required entities to measure credit losses based on an "expected credit loss" approach rather than an "incurred loss" approach previously required under GAAP. The new approach requires entities to measure all expected credit losses for financial assets carried at amortized cost and debt securities classified as available-for-sale, based on historical experience, current conditions, and reasonable forecasts of collectability. This new accounting standard could cause increases and more volatility in Farmer Mac's provision for credit losses and could adversely affect Farmer Mac's business, operating results, financial condition, or capital levels. See Note 2(r) to the consolidated financial statements for more information about this new accounting standard.

Changes in the value or composition of Farmer Mac's investment securities could adversely affect Farmer Mac's business, operating results, financial condition, liquidity or capital levels.

Deterioration in financial or credit market conditions could reduce the fair value of Farmer Mac's investment securities, particularly those securities that are less liquid and more subject to market variability. Some securities owned by Farmer Mac, including auction-rate certificates, do not have well-established secondary trading markets, making it more difficult to estimate current fair values for those securities. This requires Farmer Mac to rely on market observations and internal models to estimate the fair values of its investment securities and to determine whether credit losses exist. However, available market data may not reflect the actual sale conditions Farmer Mac may face when selling its investment securities, particularly in adverse financial market conditions. Internal models require Farmer Mac to exercise judgment about estimates and assumptions used in the models. If Farmer Mac uses unreliable market data or incorrect estimates or assumptions in its internal models to estimate the fair value of its investment securities, those estimates could adversely affect results of operations during the reporting period. And if Farmer Mac decides to sell securities in its investment portfolio, the price ultimately realized will depend on the demand and liquidity in the market at the time of sale, which could be significantly less than Farmer Mac's estimates for fair value. Failure to accurately estimate the fair value of Farmer Mac's investment securities could adversely affect Farmer Mac's business, operating results, financial condition, liquidity or capital levels.

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

The trading price of Farmer Mac's Class C non-voting common stock ("Class C stock") has at times experienced substantial price volatility and may remain volatile. For example, the closing price of the Class C stock ranged from $74.76 per share to $136.81 per share during 2021. The trading price may fluctuate in response to various factors, including short sales, hedging, the presence or absence of a share repurchase program, stock market influences in general that are unrelated to Farmer Mac's operating performance (including COVID-19), or sales of significant amounts of the stock by large holders. Farmer Mac typically grants equity awards each year that are based on the Class C stock, including grants that vest over time or upon the achievement of specified performance goals. Sales of stock acquired upon vesting or the exercise of equity awards by Farmer Mac's officers, directors, or employees, whether under an established trading plan or otherwise, could adversely affect the trading price of the Class C stock. All of these factors may be exacerbated during periods of low trading volume for Farmer Mac's Class C stock, which averaged 39,800 shares daily during 2021, and may have a prolonged negative effect on its trading price or increase price volatility.

Regulatory and Compliance Risk

Farmer Mac and many of its business counterparties are subject to comprehensive government regulation, and changes to applicable laws and regulations could adversely affect Farmer Mac's business, operating results, reputation, or financial condition.

Farmer Mac was established under a statutory charter that the U.S. Congress may amend at any time and is regulated by various government agencies, including the FCA and the SEC. Farmer Mac is therefore exposed to the risk of legal or regulatory penalties; material financial loss including fines, judgments, damages, or settlements; or loss of reputation if it violates applicable laws, regulations, rules, regulatory requests, self-regulatory organization standards, or codes of conduct applicable to its business activities. Future legislative or regulatory actions affecting Farmer Mac's statutory charter or its business activities, including increased regulatory supervision, and any required changes to Farmer Mac's business or operations resulting from such actions, could result in a financial loss for Farmer Mac or otherwise reduce its profitability, impose more compliance and other costs on Farmer Mac, limit the products offered by Farmer Mac or its ability to pursue business opportunities in which it might otherwise consider engaging, curtail business activities in which it is currently engaged, affect the value of assets that Farmer Mac holds, or otherwise adversely affect Farmer Mac's business, results of operations, reputation, or financial condition.

The financial services industry, in which most of Farmer Mac's business counterparties and customers operate, is subject to significant legislation and regulations. To the extent that current or future legislation, regulations, or supervisory activities affect the activities of banks, insurance companies, other rural lenders, derivatives counterparties, clearinghouses, securities dealers, or other regulated entities that constitute a large portion of Farmer Mac's business counterparties or customers, Farmer Mac could experience loss of business or business opportunities, increased compliance costs, disadvantageous business terms in its dealings with counterparties, and unfavorable changes to its business practices or activities. As a result, Farmer Mac's business, operating results, reputation, or financial condition could be adversely affected.

Farmer Mac's capital requirements may change, and failure to meet those requirements could result in supervisory measures or the inability of Farmer Mac to declare dividends, or otherwise materially and adversely affect Farmer Mac's business, operating results, or financial condition.

Farmer Mac is required by statute and regulation to maintain certain capital levels. Any inability by Farmer Mac to meet these capital requirements could result in supervisory measures by FCA, adversely affect Farmer Mac's ability to declare dividends on its common and preferred stock, or otherwise materially and adversely affect Farmer Mac's business, operating results, or financial condition. As required by an FCA regulation on capital planning, Farmer Mac has adopted a policy to maintain a sufficient level of Tier 1 capital and to restrict paying Tier 1-eligible dividends if Tier 1 capital falls below specified thresholds. For more information about Farmer Mac's capital requirements, including the Tier 1 capital requirement, see "Business—Government Regulation of Farmer Mac—Regulation—Capital Standards." Factors that could adversely affect the adequacy of Farmer Mac's capital levels in the future, and which may be beyond Farmer Mac's control, include:

- credit losses;
- adverse changes in interest rates or credit spreads;
- the need to increase the level of the allowance for losses on loans;
- legislative or regulatory actions that increase Farmer Mac's capital requirements; and
- changes in GAAP.

Political Risk

Farmer Mac is a GSE that may be materially and adversely affected by legislative or political developments.

Farmer Mac is a GSE with a statutory charter that may be amended by Congress at any time, and is also regulated by government agencies, including the FCA and the SEC. Although Farmer Mac is not aware of any pending legislative or regulatory proposals that would materially impact its business or operations, Farmer Mac's ability to effectively conduct its business is subject to risks and uncertainties related to political developments that could affect Farmer Mac or GSEs generally. These political risks and uncertainties may be heightened under a new Congress or Presidential administration. Farmer Mac cannot predict whether or when legislative or regulatory initiatives may commence that, if successful, could negatively affect the status of Farmer Mac as a GSE or how Farmer Mac operates, and which could have a material and adverse effect on Farmer Mac's business, operating results, financial condition, or capital levels. See "Business—Government Regulation of Farmer Mac" for more information about the rules and regulations governing Farmer Mac's activities.

Human Capital Risk

Farmer Mac's ability to attract and retain motivated and qualified employees is critical to the success of its business, and significant or sustained disruption in the continuity of Farmer Mac's employees or executive leaders may materially adversely affect Farmer Mac's business performance, operations, financial condition, or reputation.

Farmer Mac relies on its employees' breadth and depth of knowledge of Farmer Mac and related industries to run its business operations successfully. If Farmer Mac cannot continue to retain and attract motivated and qualified employees or does not have adequate human capital to achieve its business objectives, Farmer Mac's business performance, operations, financial condition, or reputation could be materially adversely affected. A significant disruption in the continuity of Farmer Mac's employees or any significant executive leadership change could also result in a loss of productivity and affect Farmer Mac's ability to successfully execute business strategies by creating uncertainty or instability or requiring Farmer Mac to divert or expend more resources to replace personnel. For example, after the termination of employment of Farmer Mac's former Chief Financial Officer in July 2019 and resignation of Farmer Mac's former Chief Credit Officer in February 2020, Farmer Mac expended significant resources and attention to identify their successors. Loss of key leadership personnel could also damage the public or market perception of Farmer Mac or result in the departure of other executives or key employees. Any of these factors could materially adversely affect Farmer Mac's business performance, operations, financial condition, or reputation.

Any of the risks described in this section could materially and adversely affect Farmer Mac's business, operating results, financial condition, reputation, capital levels, and future earnings. For more information about Farmer Mac's risk management, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management" in Item 7 of this Annual Report on Form 10-K.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Farmer Mac maintains its principal office at 1999 K Street, N.W., 4th Floor, Washington, D.C. 20006, under a sublease that began on October 1, 2011 and ends on August 30, 2024. Farmer Mac also maintains two other office locations: (1) 9169 Northpark Drive, Johnston, Iowa 50322, under a lease that began on October 1, 2017 and ends on June 30, 2023; and (2) 9249 Northpark Drive, Johnston, IA 50322, under a lease that began on August 1, 2021 and ends on June 30, 2023. Farmer Mac believes that its offices are suitable and adequate for its current and anticipated needs for the near future. Farmer Mac's activities at each property encompass its Agricultural Finance line of business. Farmer Mac's activities at its Washington, D.C. office encompass all of its segments.

Item 3. Legal Proceedings

None.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases for Equity Securities

(a) Farmer Mac has three classes of common stock outstanding – Class A voting common stock, Class B voting common stock, and Class C non-voting common stock. Ownership of Class A voting common stock is restricted to banks, insurance companies, and other financial institutions or similar entities that are not institutions of the FCS. Ownership of Class B voting common stock is restricted to institutions of the FCS. There are no ownership restrictions on the Class C non-voting common stock. In the original public offering of the Class A and Class B voting common stock, Farmer Mac reserved the right to redeem at book value any shares of either class held by an ineligible holder.

Farmer Mac's Class A voting common stock and Class C non-voting common stock are listed on the New York Stock Exchange under the symbols AGM.A and AGM, respectively. The Class B voting common stock, which has a limited market and trades infrequently, is not listed or quoted on any exchange or other quotation system, and Farmer Mac is not aware of any publicly available quotations or prices for that class of common stock.

As of February 7, 2022, Farmer Mac had 873 registered owners of the Class A voting common stock, 75 registered owners of the Class B voting common stock, and 823 registered owners of the Class C non-voting common stock.

The dividend rights of all three classes of Farmer Mac's common stock are the same, and dividends may be paid on common stock only when, as, and if declared by Farmer Mac's board of directors in its sole discretion, subject to compliance with applicable capital requirements and payment of dividends on any outstanding preferred stock. On February 24, 2020, Farmer Mac's board of directors declared a dividend of $0.80 per share on Farmer Mac's common stock payable for first quarter 2020. That dividend was paid quarterly through fourth quarter 2020. On February 23, 2021, Farmer Mac's board of directors declared a dividend of $0.88 per share on Farmer Mac's common stock payable for first quarter 2021. That dividend was paid quarterly through fourth quarter 2021. On February 24, 2022, Farmer Mac's board of directors declared a dividend of $0.95 per share on Farmer Mac's common stock payable for first quarter 2022. See "Business—Financing—Equity Issuance" for more information on Farmer Mac's common stock.

The quarterly dividend of $0.95 per share on all three classes of common stock for first quarter 2022 represents an increase of $0.07 per common share, or 8%, over the quarterly dividend payout in 2021 and reflects the board's goal to maintain Farmer Mac's common stock dividend payout target as a percentage of annual core earnings at 35%. In deciding to maintain Farmer Mac's common stock dividend payout target, the board of directors considered Farmer Mac's strong capital position and the consistency of and outlook for earnings, balanced against the need for capital to fund the significant growth objectives identified in the company's strategic plan and to meet regulatory requirements and metrics established by the board of directors. These actions are also consistent with Farmer Mac's goal of providing a competitive return on its common stockholders' investments through the payment of cash dividends.

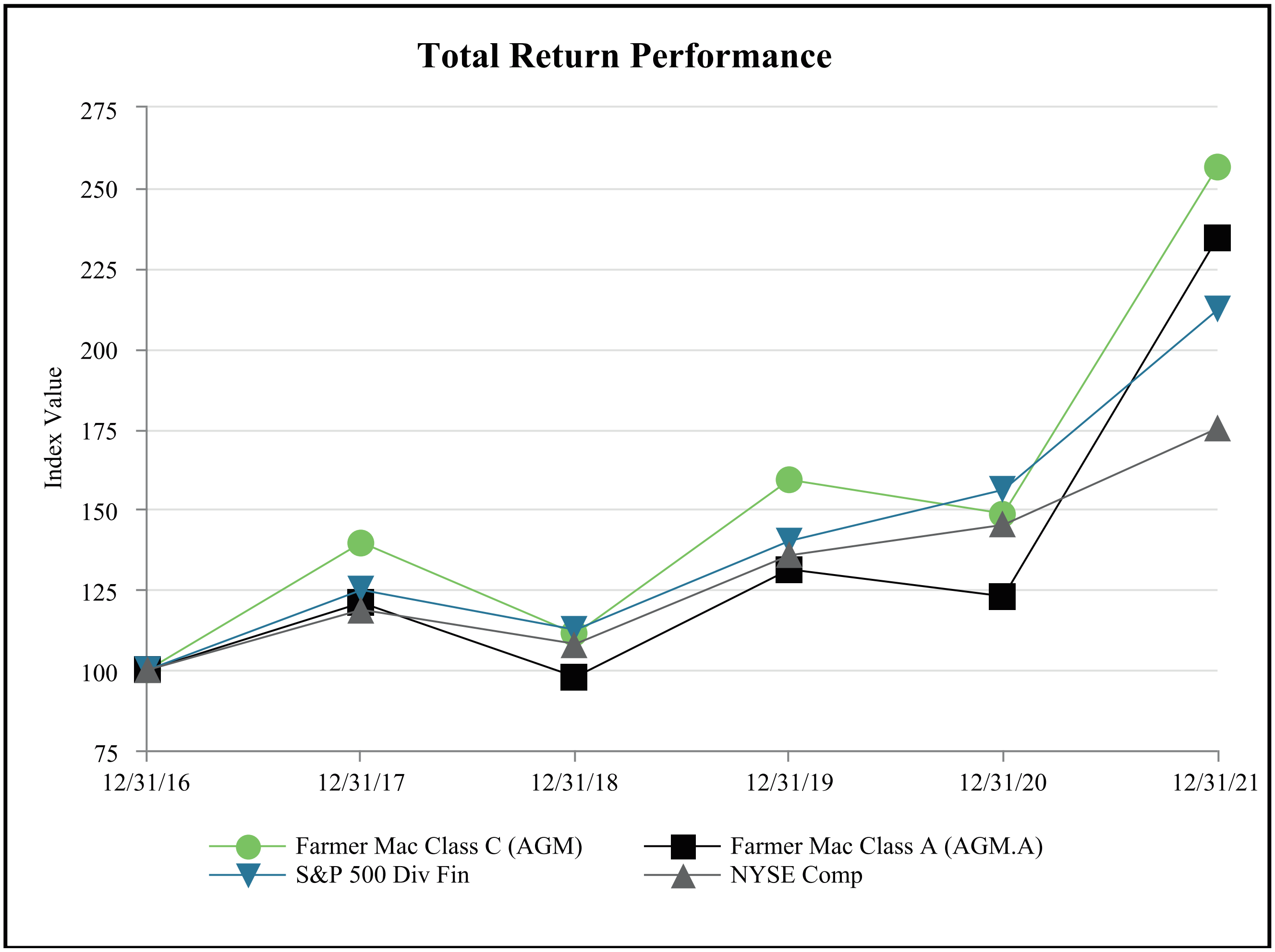
The declaration and payment of future dividends to holders of Farmer Mac's common stock are, however, at the discretion of Farmer Mac's board of directors and depend on many factors, including Farmer Mac's financial condition, actual results of operations and earnings, the capital needs of Farmer Mac's business, regulatory requirements, and other factors that Farmer Mac's board deems relevant. Farmer Mac's ability to pay dividends on its common stock is also subject to the payment of dividends on its outstanding preferred stock. Applicable FCA regulations also require Farmer Mac to provide FCA with 15 days' advance notice of certain capital distributions. Farmer Mac's ability to declare and pay dividends could be restricted if it were to fail to comply with applicable capital requirements. See Note 9 to the consolidated financial statements for more information about Farmer Mac's capital position and see "Business—Government Regulation of Farmer Mac—Regulation—Capital Standards" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Capital Requirements" for more information on the capital requirements applicable to Farmer Mac.

Information about securities authorized for issuance under Farmer Mac's equity compensation plans appears under "Equity Compensation Plans" in Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022. That portion of the definitive proxy statement is incorporated by reference into this Annual Report on Form 10-K.

Farmer Mac is a federally chartered instrumentality of the United States, and its common stock is exempt from registration under Section 3(a)(2) of the Securities Act. One type of transaction related to Farmer Mac's common stock occurred during fourth quarter 2021 that was not registered under the Securities Act and not otherwise reported on a Current Report on Form 8-K:

- In October 2021, consistent with 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 427 shares of Class C non-voting common stock to the five directors who elected to receive such stock in lieu of a portion of their cash retainers. The number of shares issued to the directors was calculated based on a price of $108.52 per share, which was the closing price of the Class C non-voting common stock on September 30, 2021, the last business day of the third quarter, as reported by the New York Stock Exchange.

Performance Graph. The following graph compares the performance of Farmer Mac's Class A voting common stock and Class C non-voting common stock with the performance of the New York Stock Exchange Composite Index ("NYSE Comp") and the Standard & Poor's 500 Diversified Financials Index ("S&P 500 Div Fin") over the period from December 31, 2016 to December 31, 2021. The graph assumes that $100 was invested on December 31, 2016 in each of: Farmer Mac's Class A voting common stock; Farmer Mac's Class C non-voting common stock; the NYSE Composite Index; and the S&P 500 Diversified Financials Index. The graph also assumes that all dividends were reinvested into the same securities throughout the past five years. Farmer Mac obtained the information in the performance graph from S&P Global Market Intelligence.



This performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, and this performance graph shall not be incorporated by reference into any of Farmer Mac's filings under the Securities Act or the Securities Exchange Act of 1934 and related regulations, or any other document, whether made before or after the date of this report and despite any general incorporation language contained in a filing or document (except to the extent Farmer Mac specifically incorporates this section by reference into a filing or document).

(b) Not applicable.

(c) None.

Item 6. [Reserved].

Item 7. 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 year ended December 31, 2021, including an evaluation of the amounts and certainty of cash flows from operations and from outside sources. 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 Farmer Mac's consolidated financial statements and the related notes to the consolidated financial statements for the fiscal years ended December 31, 2021, 2020, and 2019.

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 institutions. Farmer Mac also serves as a critical investment tool for states, counties, municipalities, pension funds, banks, public trust funds, and credit unions by providing diversification in their investment portfolios, issuance structure flexibility, and the opportunity to earn a competitive return on their investment dollars.

During 2021:

- we provided $8.6 billion in liquidity and lending capacity to lenders serving rural America;
- we closed on a newly-designed structured securitization transaction involving approximately $300 million of agricultural mortgage loans;
- 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 Guaranteed Securities portfolios;
- we added 32 net new employees to our workforce (a 26% increase compared to year-end 2020) to enable continued growth of our business and to fulfill our mission to rural America;
- we maintained uninterrupted access to the debt capital markets and a strong capital position; and
- we maintained strong liquidity in our investment portfolio well above regulatory requirements.

Farmer Mac's performance during 2021, 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. 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 Years Ended December 31,		
	2021	2020	2019
	(in thousands)		
Net income attributable to common stockholders	$ 107,583	$ 89,176	$ 93,650
Core earnings	113,570	100,612	93,742

The $18.4 million year-over-year increase in net income attributable to common stockholders was due to a $23.8 million after-tax increase in net interest income, a net change in our (release)/provision for credit losses of $8.1 million after tax, and a $5.2 million after-tax gain on sale of mortgage loans. These factors were partially offset by a $9.5 million after-tax increase in operating expenses, a $6.9 million increase in preferred stock dividends, and a $2.5 million after-tax decrease in the fair value of undesignated financial derivatives.

The $4.5 million decrease in net income attributable to common stockholders for 2020 compared to 2019 was primarily due to a $7.5 million after-tax increase in operating expenses, a $4.4 million after-tax decrease in the fair value of undesignated financial derivatives due to fluctuations in long-term interest rates, a $3.9 million increase in preferred stock dividends, and a $3.6 million after-tax increase in the total provision for credit losses. These decreases were partially offset by a $13.8 million after-tax increase in net interest income and a $1.3 million after-tax increase in other income.

The $13.0 million year-over-year increase in core earnings was due to a $18.7 million after-tax increase in net effective spread, a net change in our (release)/provision for credit losses of $8.1 million after tax, and a $5.2 million after-tax gain on sale of mortgage loans. These factors were partially offset by a $9.5 million after-tax increase in operating expenses, a $6.9 million increase in preferred stock dividends, a $1.3 million after-tax decrease in guarantee fees, and a $0.8 million after-tax decrease in other income.

The $6.9 million increase in core earnings for 2020 compared to 2019 was primarily due to a $22.4 million after-tax increase in net effective spread. This increase was partially offset by a $7.5 million after-tax increase in operating expenses, a $3.9 million increase in preferred stock dividends, and a $3.6 million after-tax increase in the total provision for credit losses.

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

Net Interest Income and Net Effective Spread

The following table shows our net interest income and net effective spread in both dollars and percentage yield or spread for the periods presented. Farmer Mac uses net effective spread, a non-GAAP measure, as an alternative to net interest income because management believes it is a useful metric that reflects the economics of the net spread between all the assets owned by Farmer Mac and all related funding, including any associated derivatives, some of which may not be included in net interest income.

Table 2

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Net interest income	$ 220,775	$ 190,588	$ 173,135
Net interest yield %	0.94 %	0.85 %	0.87 %
Net effective spread	$ 220,668	$ 196,956	$ 168,608
Net effective spread %	0.98 %	0.93 %	0.91 %

The $30.2 million year-over-year increase in net interest income was primarily due to a $16.7 million increase related to net new business volume, a $6.9 million decrease in funding costs, and a $7.7 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 0.09% increase was primarily attributable to an increase of 0.04% in net new business volume, an increase of 0.03% in net fair value changes from designated financial derivatives, and a decrease of 0.01% in funding costs.

The $17.5 million increase in net interest income for 2020 compared to 2019 was primarily due to a $23.2 million increase related to net new business volume. This was partially offset by a $4.1 million increase in funding and liquidity costs and a $1.3 million decrease in the fair value of derivatives designated in fair value hedge accounting relationships (designated financial derivatives). In percentage terms, the decrease of 0.02% in net interest income yield was primarily attributable to an increase of 0.05% in funding and liquidity costs and 0.01% in net fair value changes from designated financial derivatives, partially offset by an increase of 0.04% related to net new business volume.

The $23.7 million year-over-year increase in net effective spread in dollars was primarily due to an increase of $16.7 million from net new business volume and a $6.3 million decrease in non-GAAP funding costs. In percentage terms, the year-over-year increase of 0.05% was primarily attributable to an increase of 0.04% in net new business volume and a decrease of 0.01% in funding costs.

The $28.3 million increase in net effective spread in dollars for 2020 compared to 2019 was primarily due to net new business volume, which increased net effective spread by approximately $23.2 million, and a $4.6 million decrease in non-GAAP funding costs. In percentage terms, the increase of 0.02% was primarily attributable to 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 11 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Net Interest Income."

Business Volume

Our outstanding business volume was $23.6 billion as of December 31, 2021, a net increase of $1.7 billion from December 31, 2020 after taking into account all new business, maturities, sales, and paydowns on existing assets. The net increase was primarily attributable to net increases of $1.1 billion in the Agricultural Finance line of business and $0.6 billion in the Rural Infrastructure 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	
	December 31, 2021	December 31, 2020
	(in thousands)	
Core capital	$ 1,200,560	$ 1,006,400
Capital in excess of minimum capital level required	486,810	325,455

The increase in capital in excess of the minimum capital level required was primarily due to the issuance of the Series G Preferred Stock in May 2021 and 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 December 31, 2021 and December 31, 2020:

Table 4

	On-Balance Sheet		Off-Balance Sheet	
	Substandard Assets	% of Portfolio	Substandard Assets	% of Portfolio
	(dollars in thousands)			
December 31, 2021	$ 185,758	2.7 %	$ 60,922	2.1 %
December 31, 2020	180,823	2.9 %	110,671	4.6 %
Increase/(decrease) from prior year-ending	$ 4,935	(0.2)%	$ (49,749)	(2.5)%

The increase of $4.9 million in on-balance sheet substandard assets during 2021 was primarily driven by credit downgrades during the year in permanent plantings, partially offset by credit upgrades in livestock and crops as well as the payoff of one substandard storage and processing loan. The on-balance sheet Agricultural Finance mortgage loan portfolio grew by $670.6 million, which, when coupled with credit upgrades, caused the percentage of substandard assets to decrease. The $49.7 million decrease in substandard assets in our off-balance sheet LTSPC and Farmer Mac Guaranteed Securities portfolios during 2021 was primarily due to credit upgrades across the portfolios during the year, particularly crops and livestock.

There was one substandard asset in the Rural Infrastructure Finance loan purchase portfolio (a Rural Utilities loan) as of December 31, 2021 and none as of December 31, 2020.

For an analysis of current loan-to-value ratios across substandard and other internally assigned risk ratings, see Table 26 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 December 31, 2021 and December 31, 2020:

Table 5

	On-Balance Sheet		Off-Balance Sheet	
	90-Day Delinquencies	% of Portfolio	90-Day Delinquencies	% of Portfolio
	(dollars in thousands)			
December 31, 2021	$ 43,710	0.64 %	$ 3,597	0.12 %
December 31, 2020	34,799	0.56 %	11,433	0.48 %
Increase/(decrease) from prior year-ending	$ 8,911	0.08 %	$ (7,836)	(0.36)%

On-balance sheet Farm & Ranch loans 90 or more days delinquent increased in all commodity groups, except storage and processing where one loan paid off. Off-balance sheet Farm & Ranch loans 90 days or more delinquent decreased in crops and part-time farms and was partially offset by increases in permanent plantings and livestock. 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 December 31, 2021.

As of both December 31, 2021 and 2020, 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 Update

Farmer Mac has operated successfully throughout the COVID-19 pandemic with most employees still working remotely. Farmer Mac has maintained uninterrupted access to the debt capital markets during that time 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" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Outlook."

Critical Accounting Estimates

The preparation of Farmer Mac's consolidated financial statements in conformity with GAAP requires the use of estimates and assumptions that affect the amounts reported in the consolidated financial statements and related notes for the periods presented. Farmer Mac considers an accounting estimate made in accordance with GAAP to be critical when it involves a significant level of estimation uncertainty and it has had or is likely to have a material impact on our financial condition or results of operations.

The accounting estimate that Farmer Mac considers to be critical in the preparation of its consolidated financial statements is the estimation of the fair value of AgVantage Securities that are classified as available for sale (AgVantage AFS). Farmer Mac considers the fair value of AgVantage AFS to be a critical estimate due to the significance of the periodic measurement of mark-to-market adjustments relative to the company's total assets, comprehensive income, and equity. Farmer Mac also considers the fair value of AgVantage AFS to be a critical accounting estimate because Farmer Mac applies a discount rate in calculating the net present value of future expected cash flows that is both significant to the estimate of their fair value and unobservable in the market. Farmer Mac relies upon this significant unobservable input to estimate the fair value of AgVantage AFS because there are no observable transactions in these securities in the market.

The fair value of AgVantage AFS had accumulated unrealized gains in the amount of $212.9 million and $368.3 million as of December 31, 2021 and 2020, respectively. See Note 5 to the consolidated financial statements – Farmer Mac Guaranteed Securities and USDA Securities for more information.

Farmer Mac applies discount rates that are commensurate with the risks involved to estimate the fair value measurement of AgVantage AFS. As of December 31, 2021, Farmer Mac applied discount rates that ranged from 0.9% to 2.1% (with a weighted average of 1.7%), As of December 31 2020, Farmer Mac applied discount rates that ranged from 0.8% to 2.3% (with a weighted average of 1.3%).

Use of different discount rates than those selected by Farmer Mac may result in materially different estimates of fair value for AgVantage AFS. Farmer Mac selects the discount rate for each AgVantage AFS security by analyzing credit default swap levels and the long-term credit outlook of Farmer Mac's major counterparties and estimating an appropriate credit spread relative to U.S. Treasury yields. The periodic measurement of fair value and underlying discount rate methodology is subject to Farmer Mac’s internal controls and review by management. As of December 31, 2021, a 0.50% increase in the discount rates used to determine the fair value of AgVantage AFS would decrease the overall GAAP carrying value by approximately 2.5%. See Note 13 to the consolidated financial statements – Fair Value Disclosures for more information.

For a description of Farmer Mac’s accounting policy for fair value measurements, see Note 2(n) to the consolidated financial statements – Significant Accounting Policies, Fair Value Measurements.

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 premiums and discounts on assets consolidated at fair value because they either do not reflect actual cash premiums paid for the assets at acquisition or are not expected to have an economic effect on Farmer Mac's financial performance if the assets are held to maturity, as is expected. Farmer Mac also excludes from net effective spread the interest income and interest expense associated with the consolidated trusts and the average balance of the loans underlying these trusts to reflect management's view that the net interest income Farmer Mac earns on the related Farmer Mac Guaranteed Securities owned by third parties is effectively a guarantee fee. Accordingly, the excluded interest income and interest expense associated with consolidated trusts is reclassified to guarantee and commitment fees in determining Farmer Mac's core earnings. Farmer Mac also excludes from net effective spread the fair value changes of financial derivatives and the corresponding assets or liabilities designated in fair value hedge 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 "(Losses)/gains on financial derivatives" on the consolidated statements of operations. However, the accrual of the contractual amounts due for undesignated financial derivatives are included in Farmer Mac's calculation of net effective spread.

Net effective spread also differs from net interest income and net interest yield because it includes the net effects of terminations or net settlements on financial derivatives, which consist of: (1) the net effects of cash settlements on agency forward contracts on the debt of other GSEs and U.S. Treasury security futures that we use as short-term economic hedges on the issuance of debt; and (2) the net effects of initial cash payments that Farmer Mac receives upon the inception of certain swaps. The inclusion of these items in net effective spread is intended to reflect our view of the complete net spread between an asset and all of its related funding, including any associated derivatives, whether or not they are designated in a hedge accounting relationship.

For a reconciliation of net interest income and net interest yield to net effective spread, see Table 11 in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations—Net Interest Income."

Results of Operations

Reconciliations of Farmer Mac's net income attributable to common stockholders to core earnings and core earnings per share are presented in the following tables along with information about the composition of core earnings:

Table 6

Reconciliation of Net Income Attributable to Common Stockholders to Core Earnings	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands, except per share amounts)		
Net income attributable to common stockholders	$ 107,583	$ 89,176	$ 93,650
Less reconciling items:			
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(5,103)	(3,691)	10,077
Losses on hedging activities due to fair value changes	(2,985)	(10,019)	(9,010)
Unrealized (losses)/gains on trading securities	(115)	51	326
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	130	58	(122)
Net effects of terminations or net settlements on financial derivatives	494	1,236	1,089
Issuance costs on the retirement of preferred stock	—	(1,667)	(1,956)
Income tax effect related to reconciling items	1,592	2,596	(496)
Sub-total	(5,987)	(11,436)	(92)
Core earnings	$ 113,570	$ 100,612	$ 93,742
Composition of Core Earnings:			
Revenues:			
Net effective spread[(1)]	$ 220,668	$ 196,956	$ 168,608
Guarantee and commitment fees[(2)]	17,533	19,150	21,335
Gain on sale of mortgage loans	6,539	—	—
Other[(3)]	1,680	2,687	1,775
Total revenues	246,420	218,793	191,718
Credit related expense (GAAP):			
(Release of)/provision for losses	(2,187)	8,055	3,501
REO operating expenses	—	—	64
Gains on sale of REO	—	(463)	—
Total credit related expense	(2,187)	7,592	3,565
Operating expenses (GAAP):			
Compensation and employee benefits	42,847	36,502	28,762
General and administrative	27,507	21,976	20,311
Regulatory fees	3,062	2,925	2,788
Total operating expenses	73,416	61,403	51,861
Net earnings	175,191	149,798	136,292
Income tax expense[(4)]	36,944	31,381	28,610
Preferred stock dividends (GAAP)	24,677	17,805	13,940
Core earnings	$ 113,570	$ 100,612	$ 93,742
Core earnings per share:			
Basic	$ 10.56	$ 9.38	$ 8.76
Diluted	10.47	9.33	8.70
Weighted-average shares:			
Basic	10,758	10,728	10,696
Diluted	10,846	10,786	10,778

(1) Net effective spread is a non-GAAP measure. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Use of Non-GAAP Measures—Net Effective Spread" for an explanation of net effective spread. See Table 11 for a reconciliation of net interest income to net effective spread.

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

(3) Reflects reconciling adjustments for the reclassification to exclude expenses related to interest rate swaps not designated as hedges and terminations or net settlements on financial derivatives, and reconciling adjustments to exclude fair value adjustments on financial derivatives and trading assets and the recognition of deferred gains over the estimated lives of certain Farmer Mac Guaranteed Securities and USDA Securities.

(4) Includes the tax impact of non-GAAP reconciling items between net income attributable to common stockholders and core earnings.

Table 7

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

	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands, except per share amounts)		
GAAP - Basic EPS	$ 10.00	$ 8.31	$ 8.76
Less reconciling items:			
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(0.47)	(0.34)	0.94
Losses on hedging activities due to fair value changes	(0.28)	(0.94)	(0.83)
Unrealized (losses)/gains on trading securities	(0.01)	—	0.03
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	0.01	0.01	(0.01)
Net effects of terminations or net settlements on financial derivatives	0.04	0.12	0.10
Issuance costs on the retirement of preferred stock	—	(0.16)	(0.18)
Income tax effect related to reconciling items	0.15	0.24	(0.05)
Sub-total	(0.56)	(1.07)	—
Core Earnings - Basic EPS	$ 10.56	$ 9.38	$ 8.76
Shares used in per share calculation (GAAP and Core Earnings)	10,758	10,728	10,696

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

	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands, except per share amounts)		
GAAP - Diluted EPS	$ 9.92	$ 8.27	$ 8.69
Less reconciling items:			
(Losses)/gains on undesignated financial derivatives due to fair value changes (see Table 14)	(0.47)	(0.34)	0.93
Losses on hedging activities due to fair value changes	(0.28)	(0.93)	(0.83)
Unrealized (losses)/gains on trading securities	(0.01)	—	0.03
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	0.01	0.01	(0.01)
Net effects of terminations or net settlements on financial derivatives	0.05	0.11	0.10
Issuance costs on the retirement of preferred stock	—	(0.15)	(0.18)
Income tax effect related to reconciling items	0.15	0.24	(0.05)
Sub-total	(0.55)	(1.06)	(0.01)
Core Earnings - Diluted EPS	$ 10.47	$ 9.33	$ 8.70
Shares used in per share calculation (GAAP and Core Earnings)	10,846	10,786	10,778

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

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

Table 8

Non-GAAP Reconciling Items for (Losses)/Gains on Hedging Activities due to Fair Value Changes

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Losses due to fair value changes (see Table 6.2)	$ (1,515)	$ (9,184)	$ (7,907)
Initial cash payment (received) at inception of swap	(1,470)	(835)	(1,103)
Losses on hedging activities due to fair value changes	$ (2,985)	$ (10,019)	$ (9,010)

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.
- Initial cash payments received by Farmer Mac upon the inception of certain swaps. When there is no direct payment arrangement between a swap dealer counterparty and a debt dealer issuing Farmer Mac's medium-term notes for a particular transaction, Farmer Mac may receive an initial cash payment from the swap dealer at the inception of the swap to offset dollar-for-dollar the amount of the discount on the associated hedged debt. For GAAP purposes, changes in fair value of the swaps are recognized in "Gains on financial derivatives," while the economically offsetting discount on the associated hedged debt is amortized over the term of the debt as an adjustment to its yield. For purposes of core earnings, these initial cash payments are deferred and amortized as net yield adjustments over the term of the related debt, which generally ranges from 3 to 25 years.

5. The recognition of deferred issuance costs on the retirements of the Series A Preferred Stock in 2020 and Series B Preferred Stock in 2019 has been excluded from core earnings because they are not

frequently occurring transactions, nor are they indicative of future operating results. This is consistent with Farmer Mac's previous treatment of deferred issuance costs associated with the retirement of preferred stock. The next eligible preferred stock redemption date is in 2024.

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 years ended December 31, 2021, 2020, and 2019. The average balance of non-accruing loans is included in the average balance of loans, Farmer Mac Guaranteed Securities, and USDA Securities presented, though the related income is accounted for on a cash basis. Therefore, as the average balance of non-accruing loans and the income received increases or decreases, the net interest income and yield will fluctuate accordingly. The average balance of loans in consolidated trusts with beneficial interests owned by third parties is disclosed in the net effect of consolidated trusts and is not included in the average balances of interest-earning assets and interest-bearing liabilities. The interest income and expense associated with these trusts are shown in the net effect of consolidated trusts.

Table 9

	For the Year Ended								
	December 31, 2021			December 31, 2020			December 31, 2019		
	Average Balance	Income/ Expense	Average Rate	Average Balance	Income/ Expense	Average Rate	Average Balance	Income/ Expense	Average Rate
	(dollars in thousands)								
Interest-earning assets:									
Cash and investments	$ 4,726,552	$ 18,660	0.39 %	$ 4,180,158	$ 42,144	1.01 %	$ 3,218,286	$ 81,522	2.53 %
Loans, Farmer Mac Guaranteed Securities and USDA Securities(1)	17,838,238	367,154	2.06 %	16,950,819	407,296	2.40 %	15,214,248	502,694	3.30 %
Total interest-earning assets	22,564,790	385,814	1.71 %	21,130,977	449,440	2.13 %	18,432,534	584,216	3.17 %
Funding:									
Notes payable due within one year	3,779,689	3,820	0.10 %	3,937,104	24,242	0.62 %	3,758,256	86,031	2.29 %
Notes payable due after one year(2)	18,004,757	166,083	0.92 %	16,869,918	241,211	1.43 %	14,116,085	332,719	2.36 %
Total interest-bearing liabilities(3)	21,784,446	169,903	0.78 %	20,807,022	265,453	1.28 %	17,874,341	418,750	2.34 %
Net non-interest-bearing funding	780,344	—		323,955	—		558,193	—	
Total funding	22,564,790	169,903	0.75 %	21,130,977	265,453	1.26 %	18,432,534	418,750	2.27 %
Net interest income/yield prior to consolidation of certain trusts	22,564,790	215,911	0.96 %	21,130,977	183,987	0.87 %	18,432,534	165,466	0.90 %
Net effect of consolidated trusts(4)	1,049,521	4,864	0.46 %	1,396,850	6,601	0.47 %	1,544,052	7,669	0.50 %
Net interest income/yield	$ 23,614,311	$ 220,775	0.94 %	$ 22,527,827	$ 190,588	0.85 %	$ 19,976,586	$ 173,135	0.87 %

(1) Excludes interest income of $39.0 million, $54.1 million, and $60.9 million in 2021, 2020, and 2019, respectively, related to consolidated trusts with beneficial interests owned by third parties.
(2) Includes current portion of long-term notes.
(3) Excludes interest expense of $34.1 million, $47.5 million, and $53.2 million in 2021, 2020, and 2019, respectively, related to consolidated trusts with beneficial interests owned by third parties.
(4) Includes the effect of consolidated trusts with beneficial interests owned by third parties.

The $30.2 million year-over-year increase in net interest income was primarily due to a $16.7 million increase related to net new business volume, a $6.9 million decrease in funding costs, and a $7.7 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 0.09% increase was primarily attributable to an increase of 0.04% in net new business volume, an increase of 0.03% in net fair value changes from designated financial derivatives, and a decrease of 0.01% in funding costs.

For 2020 compared to 2019, the $17.5 million increase in net interest income was primarily due to net business volume growth across most lines of business, which contributed $23.2 million to net interest income. This was partially offset by a $4.1 million increase in funding and liquidity costs and a decrease of $1.3 million in net fair value changes from designated financial derivatives as a result of fluctuations in interest rates. In percentage terms, the decrease of 0.02% in net interest income yield was primarily attributable to an increase of 0.05% in funding and liquidity costs and 0.01% in net fair value changes from designated financial derivatives, partially offset by an increase of 0.04% related to new business volume.

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 10

	2021 vs. 2020			2020 vs. 2019		
	Increase/(Decrease) Due to			Increase/(Decrease) Due to		
	Rate	Volume	Total	Rate	Volume	Total
	(in thousands)					
Income from interest-earning assets:						
Cash and investments	$ (28,400)	$ 4,916	$ (23,484)	$ (58,877)	$ 19,499	$ (39,378)
Loans, Farmer Mac Guaranteed Securities and USDA Securities	(60,647)	20,505	(40,142)	(148,159)	52,761	(95,398)
Total	(89,047)	25,421	(63,626)	(207,036)	72,260	(134,776)
Expense from other interest-bearing liabilities	(107,497)	11,947	(95,550)	(213,715)	60,418	(153,297)
Change in net interest income prior to consolidation of certain trusts[1]	$ 18,450	$ 13,474	$ 31,924	$ 6,679	$ 11,842	$ 18,521

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

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

Table 11

	For the Years Ended December 31,					
	2021		2020		2019	
	Dollars	Yield	Dollars	Yield	Dollars	Yield
	(dollars in thousands)					
Net interest income/yield	$ 220,775	0.94 %	$ 190,588	0.85 %	$ 173,135	0.87 %
Net effects of consolidated trusts	(4,864)	0.02 %	(6,601)	0.02 %	(7,669)	0.03 %
Expense related to undesignated financial derivatives	2,841	0.01 %	3,468	0.02 %	(5,095)	(0.03)%
Amortization of premiums/discounts on assets consolidated at fair value	(45)	— %	197	— %	398	— %
Amortization of losses due to terminations or net settlements on financial derivatives	446	— %	120	— %	(68)	— %
Fair value changes on fair value hedge relationships	1,515	0.01 %	9,184	0.04 %	7,907	0.04 %
Net effective spread	$ 220,668	0.98 %	$ 196,956	0.93 %	$ 168,608	0.91 %

The $23.7 million year-over-year increase in net effective spread in dollars was primarily due to an increase of $16.7 million from net new business volume and a $6.3 million decrease in non-GAAP funding costs. In percentage terms, the year-over-year increase of 0.05% was primarily attributable to an increase of 0.04% in net new business volume and a decrease of 0.01% in funding costs.

For 2020 compared to 2019, the $28.3 million increase in net effective spread in dollars was primarily due to net business volume growth across most lines of business, which contributed $23.2 million to net effective spread, and a $4.6 million decrease in non-GAAP funding costs. In percentage terms, the increase of 0.02% was primarily attributable to new business volume.

See Note 14 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 each year in the three-year period ended December 31, 2021:

Table 12

	Allowance for Losses	Reserve for Losses	Total Allowance for Losses
		(in thousands)	
Balance as of January 1, 2019	$ 7,017	$ 2,167	$ 9,184
Provision for/(release of) losses	3,504	(3)	3,501
Charge-offs	(67)	—	(67)
Balance as of December 31, 2019	$ 10,454	$ 2,164	$ 12,618
Cumulative effect adjustment from adoption of current expected credit loss standard	1,793	863	2,656
Adjusted beginning balance	$ 12,247	$ 3,027	$ 15,274
Provision for losses	7,810	250	8,060
Charge-offs	(5,759)	—	(5,759)
Balance as of December 31, 2020	$ 14,298	$ 3,277	$ 17,575
Release of losses	(860)	(1,327)	(2,187)
Recovery	1,054	—	1,054
Charge-offs	—	—	—
Balance as of December 31, 2021	$ 14,492	$ 1,950	$ 16,442

See Notes 8 and 12 to the consolidated financial statements and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk—Loans and Guarantees."

Guarantee and Commitment Fees. The following table presents guarantee and commitment fees, which compensate Farmer Mac for assuming the credit risk on loans underlying off-balance sheet Farmer Mac Guaranteed Securities and LTSPCs, for the years ended December 31, 2021, 2020, and 2019:

Table 13

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Guarantee and commitment fees	$ 12,669	$ 12,549	$ 13,666

Guarantee and commitment fees were relatively flat for the year ended December 31, 2021 compared to 2020, which was due to stability in the average outstanding balance of LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities during 2021. As adjusted for the core earnings presentation, guarantee and commitment fees were $17.5 million for the year ended December 31, 2021, respectively, compared to $19.2 million and $21.3 million for the 2020 and 2019, 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.

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."

(Losses)/gains on financial derivatives. The components of gains and losses on financial derivatives for the years ended December 31, 2021, 2020, and 2019 are summarized in the following table:

Table 14

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
(Losses)/gains due to fair value changes	$ (5,103)	$ (3,691)	$ 10,077
Accrual of contractual payments	2,841	3,468	(5,095)
(Losses)/gains due to terminations or net settlements	(1,086)	(23)	300
(Losses)/gains on financial derivatives	$ (3,348)	$ (246)	$ 5,282

These changes in fair value are primarily the result of fluctuations in long-term interest rates. The accrual of periodic cash settlements for interest paid or received from Farmer Mac's interest rate swaps that are undesignated financial derivatives is shown as expense related to financial derivatives. Payments or receipts to terminate undesignated derivative positions or net cash settled forward sales contracts on the debt of other GSEs and undesignated U.S. Treasury security futures and initial cash payments received upon the inception of certain undesignated swaps are included in "(Losses)/gains due to terminations or net settlements" in the table above. For undesignated swaps, when there is no direct payment arrangement between a swap dealer counterparty and a debt dealer issuing Farmer Mac's medium-term notes for a particular transaction, Farmer Mac may receive an initial cash payment from the swap dealer at the inception of the swap to offset dollar-for-dollar the amount of the discount on the associated hedged debt. Changes in the fair value of these swaps are recognized immediately in "(Losses)/gains on financial derivatives," while the offsetting discount on the hedged debt is amortized over the term of the debt as an adjustment to its yield. The amounts of initial cash payments received by Farmer Mac vary depending on the number of the aforementioned type of swaps it executes during a quarter.

Gains on Sale of Mortgage Loans

Table 15

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Gain on sale of mortgage loans	$ 6,539	$ —	$ —

In fourth quarter 2021, Farmer Mac executed a newly-designed structured securitization of a $299.4 million pool of Farm & Ranch loans. The transaction was structured into two pass-through tranches, Class A and Class B, each of which were sold to third-party investors in the capital markets, as well as an interest-only Farmer Mac Guaranteed Security ("IO-FMGS") that Farmer Mac retained. The Class A tranche makes up 92.5% of the pool and is guaranteed as to principal and interest by Farmer Mac. The IO-FMGS is guaranteed as to interest by Farmer Mac. The Class B tranche makes up the remaining 7.5% of the pool and is subordinated in right of interest and principal payments in the event of a shortfall to the Class A tranche and the IO-FMGS. As a result of this transaction, Farmer Mac recognized the following:

1. A guarantee obligation and corresponding guarantee fee related to the Farmer Mac-guaranteed Class A tranche;
2. A servicing asset and corresponding servicing fee related to Farmer Mac's role as master servicer for the entire pool and as central servicer for the portion of the pool for which it serves as central servicer; and
3. A security representing the IO-FMGS.

These assets and liabilities were initially recorded on the balance sheet at fair value.

Other Income. The following table presents other income for the years ended December 31, 2021, 2020, and 2019:

Table 16

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Late fees	$ 951	$ 1,292	$ 1,135
Servicing fees	291	—	—
Mortgage servicing rights amortization	(128)	—	—
Other	955	2,195	769
Total other income	$ 2,069	$ 3,487	$ 1,904

The decrease in other income for the year ended December 31, 2021 compared to 2020 is primarily due to a decrease in rate modification fees on Farm & Ranch loans.

Operating Expenses. The components of operating expenses for the years ended December 31, 2021, 2020, and 2019 are summarized in the following table:

Table 17

	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands)		
Compensation and employee benefits	$ 42,847	$ 36,502	$ 28,762
General and administrative	27,507	21,976	20,311
Regulatory fees	3,062	2,925	2,788
Total Operating Expenses	$ 73,416	$ 61,403	$ 51,861

a. Compensation and Employee Benefits. The increase in compensation and employee benefits expenses for 2021 compared to 2020 was due to increased headcount. We hired 32 net new employees this year, including ten new employees in connection with the strategic acquisition of loan servicing rights in third quarter 2021. The increase in compensation and employee benefits expenses for 2020 compared to 2019 was primarily due to increased headcount in the current period, higher bonus expense, and severance payments made to an executive who resigned in first quarter 2020.

b. General and Administrative Expenses (G&A). The increase in G&A expenses for 2021 compared to 2020 was primarily due to increased spending on software licenses, 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. The increase in G&A expenses for 2020 compared to 2019 was primarily due to increased spending on software licenses and information technology consultants to support growth and strategic initiatives

Income Tax Expense. The following table presents income tax expense and the effective income tax rate for the years ended December 31, 2021, 2020, and 2019:

Table 18

	For the Years Ended December 31,		
	2021	2020	2019
	(dollars in thousands)		
Income tax expense	$ 35,353	$ 28,785	$ 29,105
Effective tax rate	21.1 %	20.9 %	20.9 %

Business Volume.

The following table sets forth the net growth or decrease in Farmer Mac's lines of business for the years ended December 31, 2021 and 2020:

Table 19

Net New Business Volume

	On or Off Balance Sheet	For the Years Ended December 31, 2021 Net Growth/ (Decrease)	2020 Net Growth/ (Decrease)
		(in thousands)	
Agricultural Finance:			
Farm & Ranch:			
Loans	On-balance sheet	$ 795,216	$ 917,071
Loans held in consolidated trusts:			
Beneficial interests owned by third-party investors	On-balance sheet	(338,422)	(313,872)
IO-FMGS	On-balance sheet	12,297	—
USDA Securities	On-balance sheet	(41,614)	256,461
AgVantage Securities	On-balance sheet	300,000	(350,000)
LTSPCs and unfunded commitments	Off-balance sheet	272,189	(78,106)
Farmer Mac Guaranteed Securities	Off-balance sheet	199,748	(117,927)
Loans serviced for others	Off-balance sheet	22,331	—
Total Farm & Ranch		**$ 1,221,745**	**$ 313,627**
Corporate AgFinance:			
Loans	On-balance sheet	$ 213,761	$ 296,682
AgVantage Securities	On-balance sheet	(376,646)	28,364
Unfunded Loan Commitments	Off-balance sheet	36,604	10,466
Total Corporate AgFinance		**$ (126,281)**	**$ 335,512**
Total Agricultural Finance		**$ 1,095,464**	**$ 649,139**
Rural Infrastructure Finance:			
Rural Utilities:			
Loans	On-balance sheet	$ 114,996	$ 525,886
AgVantage Securities	On-balance sheet	467,425	(376,096)
LTSPCs and Unfunded Loan Commitments	Off-balance sheet	412	(52,854)
Farmer Mac Guaranteed Securities	Off-balance sheet	(1,657)	(3,155)
Total Rural Utilities		**$ 581,176**	**$ 93,781**
Renewable Energy:			
Loans	On-balance sheet	$ 13,728	$ 63,233
Unfunded Loan Commitments	Off-balance sheet	—	—
Total Renewable Energy		**$ 13,728**	**$ 63,233**
Total Rural Infrastructure Finance		**$ 594,904**	**$ 157,014**
Total		**$ 1,690,368**	**$ 806,153**

Farmer Mac's outstanding business volume was $23.6 billion as of December 31, 2021, a net increase of $1.7 billion from December 31, 2020 after taking into account all new business, maturities, sales, and paydowns on existing assets.

The $1.2 billion net increase in Farm & Ranch was comprised of $5.9 billion of new purchases and guarantees, partially offset by $4.7 billion of scheduled maturities, repayments, and sales. Farmer Mac purchased a total of $2.1 billion in loans, which was primarily driven by farm real estate acquisitions due to improved borrower economics as well as a continued competitive interest rate environment resulting in demand for long-term financing solutions. The $2.1 billion in gross Farm & Ranch loan purchases was partially offset by $1.3 billion in scheduled maturities, repayments, and sales, including the sale of $299.4 million of agricultural mortgage loans through Farmer Mac's newly-designed structured securitization executed in the fourth quarter. The securitization resulted in $289.5 million in Farmer Mac Guaranteed Securities backed by the sold loans.

Farmer Mac also purchased a total of $2.2 billion in AgVantage Securities, which primarily reflected the refinancing of maturing securities as well as financial counterparties seeking additional short-term, low-cost securities to manage their asset-liability maturity profile. The $2.2 billion in gross purchases was partially offset by $1.9 billion in scheduled maturities. While the short-term nature of the AgVantage securities added during 2021 may create volatility in AgVantage volumes, Farmer Mac does not anticipate a material impact to its net effective spread given the low-cost nature of these securities due to the short maturity profile.

Farmer Mac entered into $788.3 million of new LTSPCs, which was offset by $516.1 million of maturities on existing LTSPCs. The new volume in LTSPCs during 2021 was driven primarily by Farm Credit System institutions seeking credit risk management solutions to address increasing commodity and borrower hold limits resulting from strong loan growth in in their regional portfolios.

The $126.3 million net decrease in Corporate AgFinance was comprised of $880.2 million of new loan and AgVantage security purchases, which was offset by $1.0 billion of scheduled maturities, repayments, and sales. Farmer Mac purchased a total of $314.9 million in AgVantage Securities, which was offset by $691.6 million in scheduled maturities and repayments. This net decrease in AgVantage Securities was primarily due to improved borrower economics that reduced the demand for higher priced institutional financing, counterparties diversifying wholesale funding sources, and competitive funding availability for institutional counterparties.

Farmer Mac purchased a total of $509.1 million in Corporate AgFinance loans in furtherance of Farmer Mac's strategic initiative to support larger and more complex farming operations, agribusinesses focused on agriculture production, food and fiber processing, and other supply chain production. The $509.1 million in gross purchases was partially offset by $295.4 million in scheduled maturities and repayments.

The $581.2 million net increase in Rural Utilities was comprised of $1.8 billion of new purchases and guarantees, which was partially offset by $1.2 billion of scheduled maturities and repayments. Farmer Mac purchased a total of $1.5 billion in AgVantage Securities which was partially offset by $982.6 million in scheduled maturities. The net increase in AgVantage Securities of $467.4 million was a result of a key counterparty proactively managing its capital structure as well as Farmer Mac's ability to offer competitively priced financing structures.

Farmer Mac purchased a total of $313.4 million in Rural Utilities loans, which was fueled by a competitive interest rate environment resulting in demand for long-term financing solutions for planned maintenance, capital expenditures, and refinancing higher cost debt. The $313.4 million in loan purchases was partially offset by $198.4 million in scheduled maturities and repayments.

The $13.7 million net increase in Renewable Energy was comprised of $43.6 million of new loan purchases, which was partially offset by $29.9 million of repayments.

Farmer Mac's outstanding business volume was $21.9 billion as of December 31, 2020, a net increase of $806.2 million from December 31, 2019 after taking into account all new business, scheduled maturities, sales, and paydowns on existing assets.

The $313.6 million net increase in Farm & Ranch was comprised of $3.8 billion of new purchases and guarantees, partially offset by $3.5 billion of scheduled maturities and repayments.

The $335.5 million net increase in Corporate AgFinance was comprised of $899.4 million of new purchases, which was partially offset by $563.9 million of scheduled maturities and repayments.

The $93.8 million net increase in Rural Utilities was comprised of $949.3 million of new purchases and guarantees, which was partially offset by $855.5 million of scheduled maturities and repayments.

The $63.2 million net increase in Renewable Energy was comprised of $64.3 million of new purchases, which was partially offset by $1.1 million of repayments.

The level and composition of Farmer Mac’s outstanding business volume is based on the relationship between new business, 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 20

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
AgVantage securities	$ 3,919,907	$ 1,298,751	$ 2,258,550
Structured securitization transactions	289,519	—	—
Loans securitized and held in consolidated trusts with beneficial interests owned by third parties	113,175	165,054	263,561
Farmer Mac Guaranteed USDA Securities	—	—	57,853
Total Farmer Mac Guaranteed Securities Issuances	$ 4,322,601	$ 1,463,805	$ 2,579,964

Farmer Mac either retains the loans it purchases or securitizes them and retains or sells Farmer Mac Guaranteed Securities backed by those loans. During 2021, Farmer Mac executed a structured securitization transaction, whereby it sold and securitized agricultural mortgage loans resulting in $289.5 million of additional Farmer Mac Guaranteed Securities from this transaction.

During 2021, Farmer Mac realized $5.2 million gain after tax from the sale of Farmer Mac Guaranteed Securities in its structured securitization transaction.

During 2021 and 2020, 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 2021 and 2020, 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 21

Outstanding Business Volume

	On or Off Balance Sheet	As of December 31, 2021	2020	2019
		(in thousands)		
Agricultural Finance:				
Farm & Ranch:				
Loans	On-balance sheet	$ 4,775,070	$ 3,979,854	$ 3,062,783
Loans held in consolidated trusts:				
Beneficial interests owned by third-party investors	On-balance sheet	948,623	1,287,045	1,600,917
IO-FMGS	On-balance sheet	12,297	—	—
USDA Securities	On-balance sheet	2,445,806	2,487,420	2,230,959
AgVantage Securities	On-balance sheet	4,725,000	4,425,000	4,775,000
LTSPCs and unfunded commitments	Off-balance sheet	2,587,154	2,314,965	2,393,071
Farmer Mac Guaranteed Securities	Off-balance sheet	578,358	378,610	496,537
Loans serviced for others	Off-balance sheet	22,331	—	—
Total Farm & Ranch		**$ 16,094,639**	**$ 14,872,894**	**$ 14,559,267**
Corporate AgFinance:				
Loans	On-balance sheet	$ 1,123,300	$ 909,539	$ 612,857
AgVantage Securities	On-balance sheet	367,464	744,110	715,746
Unfunded Loan Commitments	Off-balance sheet	47,070	10,466	—
Total Corporate AgFinance		**$ 1,537,834**	**$ 1,664,115**	**$ 1,328,603**
Total Agricultural Finance		**$ 17,632,473**	**$ 16,537,009**	**$ 15,887,870**
Rural Infrastructure Finance:				
Rural Utilities:				
Loans	On-balance sheet	$ 2,302,373	$ 2,187,377	$ 1,661,491
AgVantage Securities	On-balance sheet	3,033,262	2,565,837	2,941,933
LTSPCs and Unfunded Loan Commitments	Off-balance sheet	556,837	556,425	609,279
Farmer Mac Guaranteed Securities	Off-balance sheet	2,755	4,412	7,567
Total Rural Utilities		**$ 5,895,227**	**$ 5,314,051**	**$ 5,220,270**
Renewable Energy:				
Loans	On-balance sheet	$ 86,763	$ 73,035	$ 9,802
Unfunded Loan Commitments	Off-balance sheet	—	—	—
Total Renewable Energy		**$ 86,763**	**$ 73,035**	**$ 9,802**
Total Rural Infrastructure Finance		**$ 5,981,990**	**$ 5,387,086**	**$ 5,230,072**
Total		**$ 23,614,463**	**$ 21,924,095**	**$ 21,117,942**

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 December 31, 2021:

Table 22

Schedule of Principal Amortization as of December 31, 2021

	Loans Held	Loans Underlying Off-Balance Sheet Farmer Mac Guaranteed Securities and LTSPCs	USDA Securities and Farmer Mac Guaranteed USDA Securities	Total
		(in thousands)		
2022	$ 380,999	$ 248,877	$ 115,980	$ 745,856
2023	368,059	236,628	118,486	723,173
2024	380,945	210,773	117,940	709,658
2025	406,447	211,653	120,298	738,398
2026	460,738	231,084	126,211	818,033
Thereafter	7,238,941	2,382,578	2,094,717	11,716,236
Total	$ 9,236,129	$ 3,521,593	$ 2,693,632	$ 15,451,354

Of Farmer Mac's $23.6 billion outstanding principal balance of business volume as of December 31, 2021, $8.1 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 December 31, 2021:

Table 23

AgVantage Balances by Year of Maturity

	As of December 31, 2021
	(in thousands)
2022	$ 2,638,903
2023	1,090,564
2024	796,416
2025	361,025
2026	975,660
Thereafter[(1)]	2,265,913
Total	$ 8,128,481

(1) Includes various maturities ranging from 2026 to 2044.

The weighted-average remaining maturity of the outstanding AgVantage securities shown in the table above was 4.7 years as of December 31, 2021.

Related Party Transactions. As provided by Farmer Mac's statutory charter, only banks, insurance companies, and other financial institutions or similar entities may hold Farmer Mac's Class A voting common stock, and only institutions of the FCS may hold Farmer Mac's Class B voting common stock. Farmer Mac's charter also provides that holders of Class A voting common stock elect five members of Farmer Mac's 15-member board of directors and that holders of Class B voting common stock elect five members of the board of directors. The ownership of Farmer Mac's two classes of voting common stock is currently concentrated in a small number of institutions. Approximately 53% of the Class A voting common stock is held by four financial institutions, with 31% held by one institution. Approximately 97% of the Class B voting common stock is held by five FCS institutions (two of which are related to each other through a parent-subsidiary relationship).

Unlike some other GSEs, specifically other FCS institutions and the Federal Home Loan Banks, Farmer Mac is not structured as a cooperative owned exclusively by member institutions and established to provide services exclusively to its members. Farmer Mac, as a stockholder-owned, publicly-traded corporation, seeks to fulfill its mission of serving the financing needs of rural America in a way that is consistent with providing a return on the investment of its stockholders, including those who do not directly participate in the secondary market provided by Farmer Mac. Farmer Mac's generally requires most financial institutions that participate in Farmer Mac's Agricultural Finance line of business to own a requisite amount of common stock, based on the size and type of institution. As a result of this requirement, coupled with the ability of holders of Class A and Class B voting common stock to elect two-thirds of Farmer Mac's board of directors, Farmer Mac regularly conducts business with "related parties," including institutions affiliated with members of Farmer Mac's board of directors and institutions that own large amounts of Farmer Mac's voting common stock. Farmer Mac has adopted a Code of Business Conduct and Ethics and other related corporate policies that govern any conflicts of interest that may arise in these transactions, and Farmer Mac's policy is to require that any transactions with related parties be conducted in the ordinary course of business, with terms and conditions comparable to those available to any other counterparty not related to Farmer Mac.

The following table summarizes the material relationships between Farmer Mac and certain related parties. The related parties listed in the table below consist of (1) all holders of at least five percent of a class of Farmer Mac voting common stock as of December 31, 2021 and (2) other institutions that are considered "related parties" through an affiliation with a Farmer Mac director and that have conducted business with Farmer Mac during the two years ended December 31, 2021. The table below does not specify any relationships based on the ownership of Farmer Mac's non-voting common stock or any series of preferred stock.

Table 24

Name of Institution	Ownership of Farmer Mac Voting Common Stock	Affiliation with Any Farmer Mac Directors	Primary Aspects of Institution's Business Relationship with Farmer Mac
AgFirst Farm Credit Bank	84,024 shares of Class B voting common stock (16.79% of outstanding Class B stock and 5.49% of total voting common stock outstanding)	None	In both 2021 and 2020, Farmer Mac earned approximately $1.2 million in fees attributable to transactions with AgFirst, primarily commitment fees for LTSPCs.
AgriBank, FCB	201,621 shares of Class B voting common stock (40.30% of outstanding Class B stock and 13.17% of total voting common stock outstanding)	Farmer Mac director Richard H. Davidson served as director of AgriBank until March 2021 and former Farmer Mac director (through May 2021) Daniel L. Shaw serves as director of AgriBank.	Farmer Mac did not conduct any business with AgriBank during 2021 or 2020.

Name of Institution	Ownership of Farmer Mac Voting Common Stock	Affiliation with Any Farmer Mac Directors	Primary Aspects of Institution's Business Relationship with Farmer Mac
Bath State Bank	Less than 5% ownership	Farmer Mac director Dennis L. Brack serves as a director of Bath State Bank and Bath State Bancorp, the holding company of Bath State Bank.	Farmer Mac purchased \$2.3 million and \$9.2 million in USDA Securities from Bath State Bank in 2021 and 2020, respectively. Additionally, Farmer Mac purchased \$5.0 million in Agricultural Finance mortgage loans from Bath State Bank in 2021. Farmer Mac did not purchase any Agricultural Finance mortgage loans from Bath State Bank in 2020.
CoBank, ACB	163,253 shares of Class B voting common stock (32.63% of outstanding Class B stock and 10.66% of total voting common stock outstanding)	Farmer Mac director Everett M. Dobrinski served as a director of CoBank through December 2019. Although no longer a director of CoBank, Mr. Dobrinski currently serves on CoBank's independent nominating committee that screens and interviews director candidates and recommends a slate of candidates for consideration by CoBank's membership.	Farmer Mac purchased \$207.5 million and \$416.8 million in participation interests in loans from CoBank in 2021 and 2020, respectively. This represented 60.2% and 56.0% of loan purchases under the Rural Infrastructure Finance line of business for 2021 and 2020, respectively. Farmer Mac entered into \$72.0 million in unfunded commitments from CoBank in 2021. Farmer Mac did not purchase any of these from CoBank in 2020. In 2021 and 2020, CoBank retained \$3.2 million and \$2.3 million of servicing fees related to the loan participations sold to Farmer Mac, respectively.
Farm Credit Bank of Texas (FCBT)	38,503 shares of Class B voting common stock (7.70% of outstanding Class B stock and 2.51% of total voting common stock outstanding)	None	In 2021 and 2020, Farmer Mac earned approximately \$1.9 million and \$1.2 million, respectively, in fees attributable to transactions with FCBT, primarily commitment fees for LTSPCs. In both 2021 and 2020, FCBT retained approximately \$0.1 million in servicing fees for its work as a Farmer Mac servicer.
Matthew 25 Management Corp.	77,412 shares of Class A voting common stock (7.51% of outstanding Class A stock and 5.06% of total voting common stock outstanding)	None	Farmer Mac did not conduct any business with Matthew 25 Management Corp. during 2021 or 2020.
National Rural Utilities Cooperative Finance Corporation (CFC)	81,500 shares of Class A voting common stock (7.91% of outstanding Class A stock and 5.32% of total voting common stock outstanding)	Farmer Mac director Todd P. Ware served as a director of CFC from June 2015 through June 2021.	Transactions with CFC represented 36.9% and 36.7% of loan purchases under the Rural Infrastructure Finance line of business during 2021 and 2020, respectively. In 2021 and 2020, Farmer Mac earned commitment fees of approximately \$1.2 million and \$1.3 million, respectively, attributable to transactions with CFC. In 2021 and 2020, Farmer Mac earned interest income of \$50.0 million and \$63.1 million, respectively, attributable to AgVantage transactions with CFC. In both 2021 and 2020, CFC retained approximately \$3.3 million in servicing fees for its work as a Farmer Mac servicer.

Name of Institution	Ownership of Farmer Mac Voting Common Stock	Affiliation with Any Farmer Mac Directors	Primary Aspects of Institution's Business Relationship with Farmer Mac
The Vanguard Group, Inc.	66,056 shares of Class A voting common stock (6.41% of outstanding Class A stock and 4.31% of total voting common stock outstanding)	None	Farmer Mac did not conduct any business with The Vanguard Group during 2021 or 2020.
Zions Bancorporation, National Association (Zions)	322,100 shares of Class A voting common stock (31.25% of outstanding Class A stock and 21.04% of total voting common stock outstanding)	None	In 2021 and 2020, Farmer Mac's purchases of on-balance sheet Agricultural Finance mortgage loans from Zions represented approximately 8.0% and 7.1%, respectively, of Agricultural Finance mortgage loan purchase volume for those years. Those purchases represented 5.6% and 6.2%, respectively, of total Agricultural Finance mortgage loan business volume (excluding AgVantage and USDA Securities) for those years. The purchases of USDA Securities from Zions represented approximately 2.1% and 1.4%, respectively, of the USDA Guarantees purchases for the years ended December 31, 2021 and 2020. Transactions with Zions represented 3.4% and 4.1%, respectively, of Farmer Mac's total outstanding business volume as of December 31, 2021 and 2020. In 2021 and 2020, Zions retained approximately \$11.0 million and \$11.8 million, respectively, in servicing fees for its work as a Farmer Mac servicer.

As discussed in more detail in Note 2(o) to the consolidated financial statements, Farmer Mac's consolidated financial statements include the accounts of variable interest entities ("VIEs") in which Farmer Mac determines itself to be the primary beneficiary, including securitization trusts where Farmer Mac shares the power to make decisions about default mitigation with a related party. If that related party status changes, consolidation or deconsolidation of securitization trusts may occur. For more information about related party transactions, see Note 3 to the consolidated financial statements.

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 the agriculture and rural utilities business 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, or wholesale funding.

- 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 refinancing opportunities for agricultural producers resulting from continued-low interest rates have increased financing requirements for mergers and acquisitions, consolidation, and vertical integration across many sectors of the agricultural industry, which may also generate demand for Farmer Mac's loan products.

- Lower market interest rates have driven a cyclical increase in agricultural loan refinancings over the last two years. Future changes to monetary policy and the overall level of interest rates could impact the pace and timing of Agricultural Finance mortgage loan purchase demand.

As we grow outstanding business volume through the products described above, we are also developing new ways to obtain funding and manage our overall credit risk. In October 2021, we completed a structured agricultural mortgage-backed securitization (AMBS) that included a $277.0 million senior tranche guaranteed by Farmer Mac and a $22.5 million unguaranteed subordinate tranche sold to investors, resulting in the sale of Farm & Ranch loans formerly held on Farmer Mac's balance sheet. During fourth quarter 2021, Farmer Mac recorded a gain on this transaction of $5.2 million after-tax. Farmer Mac will serve as the master servicer of the securitization and as central servicer for a portion of the underlying loan pool. This new source of funding provides us with another tool to help manage capital and credit risk and also provides an investment opportunity for leading institutional investors.

The disruptions from the COVID-19 pandemic experienced during 2020 were significantly moderated during 2021. However, the recent and rapid increase in cases of COVID-19 resulting from variants of coronavirus demonstrates the volatility and uncertainty stemming from the pandemic. Future variants and outbreaks may result in increased market volatility and supply chain disruptions similar to the market dislocations experienced in 2020 and 2021. Farmer Mac's mission is to support rural America, and the disruptions caused by COVID-19 may continue to present new and expanded opportunities for Farmer Mac to help meet the financing needs of rural America while also presenting uncertainties and risks. See "Risk Factors" in Part I, Item 1A of this report for more information about the uncertainties and risks associated with the COVID-19 pandemic on Farmer Mac and its business.

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 corresponding to business and revenue growth. We expect these efforts to continue and increase over the next 12 - 18 months as we innovate and grow our business while monitoring the growth in operating expenses commensurate with the growth in our revenue.

During third quarter 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 will 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.

Operations. On March 12, 2020, Farmer Mac activated its business continuity plan and has been operating uninterruptedly since then, with most of its employees working remotely throughout 2020 and 2021. Farmer Mac has provided guidance and support to all of its employees to ensure that they have the tools and knowledge needed to effectively work remotely, and Farmer Mac's technology platform and business continuity plan have been functioning as designed in support of all functions of the organization with no material disruption of business. As a secondary market participant in the agricultural and rural utilities lending space, Farmer Mac's business model is already based on a remote interface with its customers and vendors.

Agricultural Industry. Economic conditions throughout the agricultural, food, fuel, and fiber sectors were generally positive throughout 2021. According to USDA estimates, gross farm income increased by 10% in 2021 to a record high of $487.9 billion. Improved commodity prices for grains and animal proteins drove the increase in gross cash receipts, and the increase in gross income was more than enough to offset a 40% decline in direct government payments. The general price rally is largely a function of dwindling global supplies for most major crop commodities. Farm expenses also rose in 2021 for most producers, driven by rising feed, energy, and labor costs. However, growth in income outpaced growth in expense, and net cash farm income increased nearly 15% in 2021 to $134.2 billion, the highest level since 2013. Consumers returned to restaurants and food service establishments in 2021, with a 41% annual increase in retail spending at food service and drinking places according to advance retail sales data from the U.S. Census Bureau. Combined with an annual 8.4% increase in retail spending at food and drinking stores (e.g., grocery), consumers have demonstrated the ability to absorb higher commodity prices in their food budgets in 2021.

The increase in farm profitability combined with low overall interest rates drove a rapid rise in land values and a decrease in farm delinquencies and bankruptcies. Land value survey data from the USDA show a 7.0% increase in average farm real estate values from June 2020 to June 2021. Annual farm real estate value gains were highest in the Northern Plains (9.4%) and the Southern Plains (9.0%), but also strong in Pacific states (8.6%) and the Corn Belt (7.7%). The Federal Reserve Bank of Chicago AgLetter reported an 18% gain in farmland values in the Seventh District (primarily Iowa, Indiana, Illinois, and Wisconsin) between October 2020 and October 2021. 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 than state or national averages indicate.

In its first look at the 2022 farm economy, the USDA projects a tightening profitability outlook. The rapid rise of input costs and interest expense is likely to increase the cost of production in 2022, putting downward pressure on overall net farm income. However, the USDA projects a modest increase in net cash farm income by 1.4% in 2022 to $136.1 billion due to cash revenue rising slightly faster than cash expenses. Fertilizer prices spiked in 2021, with December prices paid by farmers 62% higher than 2020 levels. While fertilizer prices abated somewhat in early 2022, the elevated costs may have already been incurred as prepaid input expense. Interest expense is also seen rising in 2022 due to a combination of higher debt levels and rising short-term borrowing costs. The decline in net cash farm income is modest historically, and most of the USDA's projected financial ratios show a robust food and farm economy in 2022. Farm equity is expected to rise for the third straight year, as forecasts for land values outpace the expected increase in debt utilization. The farm sector's overall working capital and interest expense coverage ratios are expected to reach their highest levels in eight years during 2022.

Economic conditions are likely to bring mixed effects to credit demand in 2022. 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. The low interest rate environment in 2021 increased farmland mortgage refinancing and loan prepayment speeds throughout the year. A reduction in loan refinancing is possible in 2022, as fewer borrowers will economically benefit from refinancing or restructuring their farm debt. This could have mixed effects on mortgage portfolios, potentially lowering new sales and originations but also slowing portfolio prepayments and exits. Finally, a rising 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 generally supportive of continued net portfolio growth in 2022.

Positive economic conditions improved portfolio performance in 2021, and they could continue to positively impact loan delinquencies and losses into 2022. Farmer Mac's 90-day delinquencies and substandard assets levels improved in fourth quarter 2021 relative to fourth quarter 2020. One-third of the loan volume past due 90-days or more in third quarter 2021 cured or paid off by December 31, 2021. The overall delinquency rate fell from 0.58% of the Farm & Ranch operating segment as of September 30, 2021, to 0.48% of the Farm & Ranch portfolio by December 31, 2021, a significant improvement that follows the seasonal pattern historically observed during the fourth quarter of each year. Year-over-year, the delinquency rate fell by 6 basis points from 0.54% in fourth quarter 2020.

However, the ongoing COVID-19 pandemic and the potential for continued economic and weather-related stress increase the level of uncertainty inherent in the agricultural credit sector and could alter the trajectory of the current agricultural cycle. Another virus resurgence, economic disruption, continued or worsening supply chain disruptions, or long-term damage to secured collateral from drought or wildfires could result in elevated loan delinquencies and a higher percentage of loans rated substandard. 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 December 31, 2021, 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 2022 include supply chain disruptions, foreign trade and trade policy, and environmental conditions. The logistics of growing, harvesting, processing, packaging, shipping, storing, and retailing food are complex and intertwined. Labor shortages and transportation disruptions created supply chain stoppages in 2020 and 2021, and they could again challenge producers in 2022. 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 reports U.S. agricultural exports in the fiscal year 2021 at $173.5 billion, 35% of the total estimated gross farm income in 2021. The USDA's initial forecast for 2022 is a modest increase in export value, but this outcome could be influenced by foreign relations or foreign economic conditions should they worsen in markets important to exports or imported inputs. For example, U.S. sanctions against Belarus in 2021 create upward pressure on fertilizer prices, and tensions between Ukraine and Russia create uncertainty and volatility in global grain prices.

Severe weather conditions and long-term environmental change continue to shape agricultural sectors. The U.S. experienced 20 separate billion-dollar weather disasters in 2021, the second-highest level in the 40 years tracked by the National Oceanic and Atmospheric Administration behind 2020. Many of those events affected agriculture, including a midwestern derecho, western wildfires, and western 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 impacted western agriculture during much of 2021. Although drought conditions improved in fourth quarter 2021 and early weeks of 2022, 12% of the continental U.S. remained in exceptional or extreme drought as of February 1, 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. Agricultural production in California, Oregon, Washington, Arizona, and Utah is likely to experience the greatest impact from the 2021 drought and future water management efforts. 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. 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."

Rural Infrastructure Industry. Economic conditions affecting the rural infrastructure industry tend to 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 2.5% and 8.2%, respectively, in 2021 through November compared to 2020. This increase was driven by higher sales to residential markets, a rebound in sales to the industrial sector, and an increase in the retail price of electricity. Overall economic conditions continued to improve throughout 2021, with improved employment, credit, and retail sales activity, but COVID-19 variants and higher inflation continue to impact economic activity. Through December 31, 2021, Farmer Mac had not observed material degradation in the financial performance of its rural infrastructure portfolio.

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 continuation of a low interest rate environment compared to historical rates, and competitive dynamics within the rural utilities cooperative finance industry. In December 2020, the Federal Communications Commission's Rural Digital Opportunity Fund (RDOF) auction awarded $9.2 billion in broadband-related operating cost subsidies to winning bidders. As RDOF auction winners submit plans to the FCC and begin development, Farmer Mac could see increased lending activity for rural utilities providers. In addition to RDOF broadband, Farmer Mac could see an increase in financing opportunities to other telecommunications providers to 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 will grow by 48% in the next five years, compared to total electric capacity growth of only 10%. This growth may also 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 loan purchase balance of renewable energy financing transactions was $86.8 million as of December 31, 2021.

Weather is an ongoing source of uncertainty for the utilities sector. Drought, fires, and extreme storms can drive demand, outages, and damage to power and telecommunications facilities. The recent drought and wildfires in California have not materially impacted Farmer Mac's portfolio as of December 31, 2021, nor has damage from Hurricane Ida. Farmer Mac continues to monitor the ongoing effects of the arctic freeze weather event that occurred during mid-February 2021 in the mid-south region, particularly in Texas, on our rural infrastructure portfolio. As of December 31, 2021, our rural infrastructure portfolio exposure in Texas was approximately $428.0 million and split between distribution and generation and transmission cooperatives. Many of these cooperatives were affected in some way by the arctic freeze, including obstacles in receiving fuel for power plants or the inability to obtain contracted electricity, which resulted in rolling blackouts across the state. In June 2021, the governor of Texas signed Texas Senate Bill 1580 into law allowing electric cooperatives impacted by the severe weather event to use securitization financing to recover the extraordinary costs and expenses incurred during the event. In January 2022, the first Texas electric cooperative announced plans to use securitization financing to recover these extraordinary costs. We believe that the current risk ratings applied to our rural infrastructure portfolio reflect any remaining financial stress resulting from the 2021 Texas freeze and elevated energy costs.

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

- Section 1005 of the American Rescue Plan Act of 2021 authorized the USDA to provide debt relief to socially disadvantaged producers who had outstanding principal balances on Farm Service Agency (FSA) loans as of January 1, 2021. In July 2021, a federal judge issued a preliminary injunction that ordered USDA to halt all payments under that debt relief program pending resolution of the constitutional objections raised against the program in ongoing litigation. Congress has proposed replacing Section 1005 of the American Rescue Plan with a new program that provides debt relief to "economically distressed" and "at-risk" farmers. If enacted, this provision could lead to a short-term acceleration in the prepayment of the FSA guaranteed loans in Farmer Mac's USDA Securities portfolio.

- Farmer Mac continues to monitor legislative developments that could lead to changes in the tax code that could affect Farmer Mac’s business. For example, an increase in the U.S. corporate tax rate (currently at 21%) has been proposed in recent years as a possible offset to increased spending on social programs. A proposed 1% excise tax on the fair market value of a corporation's stock repurchased in a taxable year has been considered as well. Farmer Mac has an existing stock buyback program that authorizes up to $9.8 million in repurchases of common stock that expires in March 2023.

- The current farm bill is set to expire in 2023. The farm bill is an omnibus piece of legislation that may impact several programs impacting farm profitability, the vitality of rural communities, and Farmer Mac’s charter. The House and Senate Agriculture Committees are expected to begin consideration of a new farm bill during 2022. Farmer Mac will continue to monitor this legislation for any impact it may have to Farmer Mac and farm profitability.

- Agricultural exports from the United States were valued at more than $177 billion in the fiscal year 2021. 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. 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.

- The prudential regulator of Farmer Mac is expected to undergo significant changes to its board this calendar year. The three-member board of the Farm Credit Administration (FCA) currently has one vacant seat, a member whose term expired in 2018, and a third member whose term expires in May 2022. The two current board members continue to serve until their replacement has been confirmed the U.S. Senate. The Biden Administration is expected to nominate individuals to fill these seats in the future. Changes to the composition of the FCA board may affect Farmer Mac's regulatory environment.

Balance Sheet Review

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

Table 25

	As of		Change	
	December 31, 2021	December 31, 2020	$	%
		(in thousands)		
Assets				
Cash and cash equivalents	$ 908,785	$ 1,033,941	$ (125,156)	(12)%
Investment securities, net of allowance	3,882,590	3,898,724	(16,134)	— %
Farmer Mac Guaranteed Securities, net of allowance	8,361,798	8,123,493	238,305	3 %
USDA Securities	2,440,732	2,480,321	(39,589)	(2)%
Loans, net of allowance	8,300,619	7,248,990	1,051,629	15 %
Loans held in trusts, net of allowance	948,059	1,286,156	(338,097)	(26)%
Other	302,908	283,876	19,032	7 %
Total assets	$ 25,145,491	$ 24,355,501	$ 789,990	3 %
Liabilities				
Notes Payable	22,716,156	21,848,917	867,239	4 %
Debt securities of consolidated trusts held by third parties	981,379	1,323,786	(342,407)	(26)%
Other	243,543	190,321	53,222	28 %
Total liabilities	$ 23,941,078	$ 23,363,024	$ 578,054	2 %
Total equity	1,204,413	992,477	211,936	21 %
Total liabilities and equity	$ 25,145,491	$ 24,355,501	$ 789,990	3 %

Assets. The increase in total assets was primarily attributable to new loan volume.

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 the issuance of the Series G Preferred Stock, an increase in retained earnings, and an increase in accumulated other comprehensive income.

Risk Management

Credit Risk – Loans and Guarantees.

Agricultural Finance - Direct Credit Exposure

Farmer Mac's direct credit exposure to Agricultural Finance mortgage loans as of December 31, 2021 was $9.8 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."

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 December 31, 2021, were $47.3 million (0.48% of the Agricultural Finance mortgage loan portfolio to which Farmer Mac has direct credit exposure), compared to $46.2 million (0.54% of the Agricultural Finance mortgage loan portfolio) as of December 31, 2020. Those 90-day delinquencies were comprised of 32 and 38 delinquent loans as of December 31, 2021 and December 31, 2020, respectively. The increase in 90-day delinquencies was primarily driven by increased delinquencies in crops, permanent plantings, and livestock, partially offset by the payoff of a single delinquent loan in storage and processing. The top ten borrower exposures over 90 days delinquent represented over half of the 90-day delinquencies as of December 31, 2021. Farmer Mac believes that it remains adequately collateralized on its delinquent loans.

Farmer Mac's 90-day delinquency rate as of December 31, 2021 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 26

	Agricultural Finance Mortgage Loans	90-Day Delinquencies	Percentage
		(dollars in thousands)	
As of:			
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 %
June 30, 2020	8,017,850	68,682	0.86 %
March 31, 2020	7,811,594	79,722	1.02 %
December 31, 2019	7,776,950	60,954	0.78 %

Across all of Farmer Mac's lines of business, 90-day delinquencies represented 0.20% of total outstanding business volume as of December 31, 2021, compared to 0.21% as of December 31, 2020 and 0.29% as of December 31, 2019.

The following table presents outstanding Agricultural Finance mortgage loans and 90-day delinquencies as of December 31, 2021 by year of origination, geographic region, commodity/collateral type, original loan-to-value ratio, and range in the size of borrower exposure:

Table 27

Agricultural Finance Mortgage Loans 90-Day Delinquencies as of December 31, 2021

	Distribution of Agricultural Loans	Agricultural Loans	90-Day Delinquencies[1]	Percentage
		(dollars in thousands)		
By year of origination:				
2011 and prior	6 %	$ 532,267	$ 2,906	0.55 %
2012	2 %	236,822	231	0.10 %
2013	3 %	331,265	1,107	0.33 %
2014	3 %	274,519	3,641	1.33 %
2015	4 %	427,958	10,110	2.36 %
2016	7 %	666,632	11,075	1.66 %
2017	7 %	685,753	5,074	0.74 %
2018	7 %	672,594	2,987	0.44 %
2019	10 %	954,909	8,713	0.91 %
2020	23 %	2,288,796	1,463	0.06 %
2021	28 %	2,740,234	—	0.06 %
Total	100 %	$ 9,811,749	$ 47,307	0.48 %
By geographic region[2]:				
Northwest	13 %	$ 1,271,158	$ 7,169	0.56 %
Southwest	32 %	3,127,283	10,279	0.33 %
Mid-North	27 %	2,650,690	3,979	0.15 %
Mid-South	15 %	1,511,250	9,872	0.65 %
Northeast	4 %	408,053	7,296	1.79 %
Southeast	9 %	843,315	8,712	1.03 %
Total	100 %	$ 9,811,749	$ 47,307	0.48 %
By commodity/collateral type:				
Crops	50 %	$ 4,916,170	$ 32,427	0.66 %
Permanent plantings	22 %	2,180,623	3,567	0.16 %
Livestock	19 %	1,838,097	10,797	0.59 %
Part-time farm	5 %	485,342	516	0.11 %
Ag. Storage and Processing	4 %	377,220	—	— %
Other	—	14,297	—	— %
Total	100 %	$ 9,811,749	$ 47,307	0.48 %
By original loan-to-value ratio:				
0.00% to 40.00%	17 %	$ 1,694,247	$ 2,775	0.16 %
40.01% to 50.00%	24 %	2,342,658	16,428	0.70 %
50.01% to 60.00%	35 %	3,412,859	23,706	0.69 %
60.01% to 70.00%	21 %	2,058,146	4,398	0.21 %
70.01% to 80.00%[3]	3 %	265,592	—	— %
80.01% to 90.00%[3]	— %	38,247	—	— %
Total	100 %	$ 9,811,749	$ 47,307	0.48 %
By size of borrower exposure[4]:				
Less than $1,000,000	34 %	$ 3,326,506	$ 6,632	0.20 %
$1,000,000 to $4,999,999	40 %	3,897,862	26,068	0.67 %
$5,000,000 to $9,999,999	15 %	1,501,123	14,607	0.97 %
$10,000,000 to $24,999,999	10 %	999,255	—	— %
$25,000,000 and greater	1 %	87,003	—	— %
Total	100 %	$ 9,811,749	$ 47,307	0.48 %

(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 December 31, 2021, Farmer Mac's Agricultural Finance mortgage loans (to which it has direct credit exposure) comprising substandard assets were $246.7 million (2.5% of the portfolio), compared to $291.5 million (3.4% of the portfolio) as of December 31, 2020. Those substandard assets comprised 274 loans as of December 31, 2021 and 343 loans as of December 31, 2020.

The decrease of $44.8 million in substandard assets during 2021 was primarily driven by credit upgrades in our off-balance sheet portfolio, partially offset by credit downgrades in our on-balance sheet portfolio. Substandard assets decreased as a percentage of the total on-balance sheet and off-balance sheet portfolios due to a combination of credit upgrades in the off-balance sheet portfolio and growth in both portfolios.

The percentage of substandard assets within the portfolio as of December 31, 2021 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 December 31, 2021 and December 31, 2020, the average unpaid principal balances for Agricultural Finance mortgage loans outstanding and to which Farmer Mac has direct credit exposure was $790,000 and $742,000, 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 2021 was 49%, compared to 54% for loans purchased during 2020. 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 52% as of both December 31, 2021 and December 31, 2020. The weighted-average original loan-to-value ratio for all 90-day delinquencies was 51% and 50% as of December 31, 2021 and December 31, 2020, 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 47% and 46% as of December 31, 2021 and December 31, 2020, 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 28

Agricultural Finance Mortgage Loans current loan-to-value ratio by internally assigned risk rating as of December 31, 2021

	Acceptable	Special Mention	Substandard	Total
		(in thousands)		
Current loan-to-value ratio[1]:				
0.00% to 40.00%	$ 2,761,962	$ 52,503	$ 89,018	$ 2,903,483
40.01% to 50.00%	2,378,511	97,733	58,177	2,534,421
50.01% to 60.00%	2,484,515	90,934	57,317	2,632,766
60.01% to 70.00%	1,427,135	54,072	22,594	1,503,801
70.01% to 80.00%	188,280	22,260	17,123	227,663
80.01% and greater	6,359	805	2,451	9,615
Total	$ 9,246,762	$ 318,307	$ 246,680	$ 9,811,749

(1) The current loan-to-value ratio is based on original appraised value (or most recently obtained appraisal, if available) and current outstanding loan amount adjusted to reflect loan amortization.

The following table presents Farmer Mac's cumulative net credit losses relative to the cumulative original balance for all Agricultural Finance mortgage loans as of December 31, 2021 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 29

Agricultural Finance Mortgage Loans Credit Losses Relative to Cumulative Original Loans, Guarantees, and LTSPCs as of December 31, 2021

	Cumulative Original Loans, Guarantees and LTSPCs	Cumulative Net Credit Losses/ (Recoveries)	Cumulative Loss Rate
	(dollars in thousands)		
By year of origination:			
2011 and prior	$ 16,099,619	$ 33,785	0.21 %
2012	1,161,476	—	— %
2013	1,470,293	—	— %
2014	1,059,486	—	— %
2015	1,227,120	(516)	(0.04)%
2016	1,542,996	—	— %
2017	1,641,538	4,311	0.26 %
2018	1,326,813	—	— %
2019	1,533,503	—	— %
2020	2,832,102	—	— %
2021	3,048,399	—	— %
Total	$ 32,943,345	$ 37,580	0.11 %
By geographic region[(1)]:			
Northwest	$ 4,323,709	$ 11,191	0.26 %
Southwest	11,248,086	8,542	0.08 %
Mid-North	8,263,325	17,165	0.21 %
Mid-South	4,450,935	(613)	(0.01)%
Northeast	1,753,860	323	0.02 %
Southeast	2,903,430	972	0.03 %
Total	$ 32,943,345	$ 37,580	0.11 %
By commodity/collateral type:			
Crops	$ 15,250,131	$ 2,887	0.02 %
Permanent plantings	7,171,387	9,783	0.14 %
Livestock	7,322,393	3,836	0.05 %
Part-time farm	1,829,054	1,090	0.06 %
Ag. Storage and Processing	1,206,989	19,984	1.66 %
Other	163,391	—	— %
Total	$ 32,943,345	$ 37,580	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 30

	As of December 31, 2021						
	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	$ 634,469	$ 190,687	$ 291,914	$105,312	$ 48,695	$ 81	$1,271,158
	6.5 %	1.9 %	3.0 %	1.1 %	0.5 %	— %	13.0 %
Southwest	673,514	1,639,929	570,639	96,212	134,629	12,360	3,127,283
	6.9 %	16.7 %	5.8 %	1.0 %	1.4 %	0.1 %	31.9 %
Mid-North	2,257,009	11,761	208,460	99,043	72,781	1,636	2,650,690
	23.0 %	0.1 %	2.1 %	1.0 %	0.7 %	— %	26.9 %
Mid-South	835,252	72,925	495,756	64,200	43,086	31	1,511,250
	8.5 %	0.7 %	5.1 %	0.7 %	0.4 %	— %	15.4 %
Northeast	197,876	43,229	79,836	54,097	33,015	—	408,053
	2.0 %	0.4 %	0.8 %	0.6 %	0.3 %	— %	4.1 %
Southeast	318,050	222,092	191,492	66,478	45,014	189	843,315
	3.2 %	2.3 %	2.0 %	0.7 %	0.5 %	— %	8.7 %
Total	$4,916,170	$2,180,623	$1,838,097	$485,342	$377,220	$14,297	$9,811,749
	50.1 %	22.1 %	18.8 %	5.1 %	3.8 %	0.1 %	100.0 %

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

Table 31

	As of December 31, 2021					
	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:						
2011 and prior	$ 3,427	$ 9,783	$ 3,836	$ 1,066	$ 15,673	$ 33,785
2012	—	—	—	—	—	—
2013	—	—	—	—	—	—
2014	—	—	—	—	—	—
2015	(540)	—	—	24	—	(516)
2016	—	—	—	—	—	—
2017	—	—	—	—	4,311	4,311
2018	—	—	—	—	—	—
2019	—	—	—	—	—	—
2020	—	—	—	—	—	—
2021	—	—	—	—	—	—
Total	$ 2,887	$ 9,783	$ 3,836	$ 1,090	$ 19,984	$ 37,580

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 8 and Note 12 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 Utilities loans held and loans underlying LTSPCs as of December 31, 2021 was $2.9 billion across 45 states. For more information about Farmer Mac's underwriting and collateral valuation standards for Rural Utilities loans, see "Business—Farmer Mac's Lines of Business—Rural Infrastructure Finance—Underwriting and Collateral Standards." As of December 31, 2021, there were no delinquencies in Farmer Mac's portfolio of Rural Utilities 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 32

	Rural Infrastructure Finance portfolio by internally assigned risk rating as of December 31, 2021			
	Acceptable	Special Mention	Substandard	Total
	(in thousands)			
Distribution Cooperative	$ 2,166,068	$ —	$ —	$ 2,166,068
G&T Cooperative	670,342	—	22,800	693,142
Renewable Energy	86,763	—	—	86,763
Rural Utilities Total	$ 2,923,173	$ —	$ 22,800	$ 2,945,973

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 8 and 12 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 December 31, 2021, 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 December 31, 2021, 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."

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 December 31, 2021, 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."

Environmental Considerations

For loans purchased by Farmer Mac in its Agricultural Finance line of business, Farmer Mac has outlined specific requirements for environmental compliance. Sellers seeking to sell Agricultural Finance mortgage loans to Farmer Mac must complete an environmental disclosure form and ensure that properties securing these loans are in full compliance with applicable permitting requirements and have necessary access to proper waste disposal. Farmer Mac requires sellers to make representations and warranties that it has physically inspected the property prior to sale to ensure that the borrower has handled any hazardous materials on the property (including the waters adjacent) only as necessary to operate the property and in compliance with applicable environmental laws. Farmer Mac also requires sellers to monitor each borrower's continuing compliance with environmental laws and regulations by performing annual inspections throughout the life of the loan. Farmer Mac also requires that each mortgage note prohibit the use, disposal, storage, or release of hazardous substances on the property except for small amounts appropriate for the maintenance of the property.

For Agricultural Finance mortgage loans secured by irrigated property, Farmer Mac requires the seller to prepare an analysis for water rights and water sustainability for the borrower's operation for the life of the loan. This analysis must include pump and well tests for groundwater sources and legally-documented easements or agreements for off-site water sources. For loans secured by properties where water availability may be a concern (primarily 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. As part of this process, Farmer Mac may conduct, or require the seller to conduct, an in-depth groundwater availability analysis.

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 December 31, 2021, 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."

The unpaid principal balance of outstanding on-balance sheet AgVantage securities secured by loans eligible for the Agricultural Finance line of business totaled $5.1 billion as of December 31, 2021 and $5.2 billion as of December 31, 2020. The unpaid principal balance of on-balance sheet AgVantage securities secured by loans eligible for the Rural Infrastructure Finance line of business totaled $3.0 billion as of December 31, 2021 and $2.6 billion as of December 31, 2020. The unpaid principal balance of outstanding off-balance sheet AgVantage securities totaled $2.8 million as of December 31, 2021 and $4.4 million as of December 31, 2020.

The following table provides information about the issuers of AgVantage securities and the required collateralization levels for those transactions as of December 31, 2021 and December 31, 2020:

Table 33

	As of December 31, 2021		As of December 31, 2020	
Counterparty	Balance	Required Collateralization	Balance	Required Collateralization
		(dollars in thousands)		
AgVantage:				
CFC	$ 3,036,017	100%	$ 2,570,249	100%
MetLife	2,050,000	103%	2,375,000	103%
Rabo AgriFinance	2,550,000	110%	2,050,000	110%
Other[(1)]	492,464	106% to 125%	744,110	106% to 125%
Total outstanding	$ 8,128,481		$ 7,739,359	

(1) Consists of AgVantage securities issued by 13 and 10 different issuers as of December 31, 2021 and December 31, 2020, 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."

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 6 to the consolidated financial statements.

Credit Risk – Other Investments. As of December 31, 2021, Farmer Mac had $0.9 billion of cash and cash equivalents and $3.9 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's 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 ($121.7 million as of December 31, 2021). However, Farmer Mac's current policy limits this total credit exposure to 5% of its regulatory capital ($60.8 million as of December 31, 2021). 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 debt issuance 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. 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 prepayment 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 results in increased prepayments, which shortens the duration of these assets, while rising interest rates generally results 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 mature within three months and are generally funded with debt having similar maturities. As of December 31, 2021, $2.9 billion of the $3.9 billion of investment securities (74%) 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 that closely matches the rate adjustment frequency of the associated investments. The fixed rate investment securities are generally funded in a manner consistent with Farmer Mac's overall funding strategy that approximates a duration and convexity match.

Interest Rate Risk Metrics

Farmer Mac regularly 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 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 December 31, 2021 and December 31, 2020 to an immediate and instantaneous uniform or "parallel" shift in the yield curve:

Table 34

	Percentage Change in MVE from Base Case	
Interest Rate Scenario[(1)]	As of December 31, 2021	As of December 31, 2020[(1)]
+100 basis points	3.7 %	4.9 %
-100 basis points	(0.1)%	(0.2)%
	Percentage Change in NES from Base Case	
Interest Rate Scenario	As of December 31, 2021	As of December 31, 2020[(1)]
+100 basis points	6.6 %	3.9 %
-100 basis points	(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 point as of December 31, 2021 and negative 4 basis points as of December 31, 2020.

As of December 31, 2021, Farmer Mac's duration gap was negative 1.5 months, compared to negative 1.6 months as of December 31, 2020. Farmer Mac updated its duration gap measure to interest-earning assets, debt, and financial derivatives as of December 31, 2020. Interest rates within the yield curve increased significantly during 2021 with the 2-year and 10-year U.S. Treasury Note yield-to-maturity increasing by approximately 61 basis points and 59 basis points, respectively, versus year-end 2020. This rate movement contributed to extending the duration of Farmer Mac's funded assets compared to its debt and financial derivatives, thereby narrowing Farmer Mac's duration gap.

Financial Derivatives Transactions

The economic effects of financial derivatives are included in Farmer Mac's MVE, NES, and duration gap analyses. Farmer Mac enters into the following 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 December 31, 2021, Farmer Mac had $17.5 billion combined notional amount of interest rate swaps, with terms ranging from less than one year to just over thirty years, of which $7.0 billion were pay-fixed interest rate swaps, $8.8 billion were receive-fixed interest rate swaps, and $1.6 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 6 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 "(Losses)/gains on financial derivatives" in the consolidated statements of operations. For financial derivatives designated in fair value hedge accounting relationships, changes in the fair values of the hedged items related to the risk being hedged are reported in "Net interest income" in the consolidated statements of operations. Interest accruals on derivatives designated in fair value hedge accounting relationships are also recorded in "Net interest income" in the consolidated statements of operations. For financial derivatives designated in cash flow hedge accounting relationships, the unrealized gain or loss on the derivative is recorded in other comprehensive income. Because the hedging instrument is an interest rate swap and the hedged forecasted transactions are future interest payments on 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 December 31, 2021 and December 31, 2020, 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.

In addition, many of Farmer Mac's floating rate assets may prepay before the contractual maturity date. 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 synthetically 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 risk sensitivity 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 management and liquidity management strategies.

As of December 31, 2021, Farmer Mac held $5.3 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 $7.0 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, 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 December 31, 2021, Farmer Mac held $3.6 billion of floating rate assets in its lines of business and its investment portfolio, had issued $1.1 billion of floating rate debt, and had entered into $13.7 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 December 31, 2021, we had $0.6 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 access to the debt capital markets at favorable interest rates throughout 2021 and 2020. Farmer Mac funds its purchases of eligible loan assets, USDA Securities, Farmer Mac Guaranteed Securities, and investment assets and finances its operations primarily by issuing debt obligations of various maturities in the debt capital markets. As of December 31, 2021, Farmer Mac had outstanding discount notes of $2.2 billion, medium-term notes that mature within one year of $4.8 billion, and medium-term notes that mature after one year of $15.8 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 280 days of liquidity throughout 2021 and had 367 days of liquidity as of December 31, 2021.

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 December 31, 2021 and December 31, 2020:

Table 35

	As of December 31, 2021	As of December 31, 2020
	(in thousands)	
Cash and cash equivalents	$ 908,785	$ 1,033,941
Investment securities:		
Guaranteed by U.S. Government and its agencies	1,579,452	1,935,056
Guaranteed by GSEs	2,282,655	1,944,497
Asset-backed securities	19,254	19,171
Total	$ 4,790,146	$ 4,932,665

The objective of the investment portfolio as of December 31, 2021 and December 31, 2020 was 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 December 31, 2021, 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 December 31, 2021 and December 31, 2020, Farmer Mac's Tier 1 capital ratio was 14.7% and 14.1%, respectively. The increase in our Tier 1 capital ratio was due to that fact that capital growth, which reflects the issuance of the Series G Preferred Stock, outpaced the growth in risk-weighted assets during 2021. As of December 31, 2021, 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." See Note 9 to the consolidated financial statements for more information about Farmer Mac's capital position.

Discount and Medium-term Notes. The following table presents the amount and timing of Farmer Mac's known, fixed, and determinable discount and medium-term note obligations by payment date as of December 31, 2021. The payment amounts represent those amounts due to the investor (including return of discount and interest on debt) and do not include unamortized premiums or discounts or other similar carrying value adjustments.

Table 36

	One Year or Less	One to Three Years	Three to Five Years	Over Five Years	Total
			(in thousands)		
Discount notes[(1)]	$ 2,168,288	$ —	$ —	$ —	$ 2,168,288
Medium-term notes[(1)]	4,819,159	6,738,000	4,935,827	4,114,997	20,607,983
Interest payments on fixed rate medium-term notes[(2)]	180,554	275,464	188,425	323,262	967,705
Interest payments on floating rate medium-term notes[(3)]	7,008	10,547	7,767	5,676	30,998

(1) Future events, including additional issuance of discount notes and medium-term notes and refinancing of those notes, could cause actual payments to differ significantly from these amounts. For more information regarding discount notes and medium-term notes, see Note 7 to the consolidated financial statements.

(2) Interest payments on callable medium-term notes are calculated based on maturity. Future calls of these notes could cause actual interest payments to differ significantly from the amounts presented.

(3) Calculated using the effective interest rates as of December 31, 2021. As a result, these amounts do not reflect the effects of changes in the interest rates effective on future interest rate reset dates.

Farmer Mac enters into financial derivatives contracts under which it either receives cash from counterparties, or is required to pay cash to them, depending on changes in interest rates. Financial derivatives are carried on the consolidated balance sheets at fair value, representing the net present value of expected future cash payments or receipts based on market interest rates as of the balance sheet date adjusted for the consideration of credit risk of Farmer Mac and its counterparties. The fair values of the contracts change daily as market interest rates change. Because the financial derivative liabilities recorded on the consolidated balance sheet as of December 31, 2021 do not represent the amounts that may ultimately be paid under the financial derivative contracts, those liabilities are not included in the table presented above. More information about financial derivatives is included in Note 2(f) and Note 6 to the consolidated financial statements.

Contingent Liabilities. In conducting its loan purchase activities, Farmer Mac enters into mandatory delivery commitments to purchase agricultural mortgage loans and USDA Securities. In conducting its LTSPC activities, Farmer Mac commits, subject to the applicable LTSPC agreement, to a future purchase of one or more loans from identified pools of eligible loans that met Farmer Mac's standards when the applicable transaction was entered into and Farmer Mac assumed the credit risk on the loans. The following table presents these significant commitments:

Table 37

	As of December 31, 2021	As of December 31, 2020
	(in thousands)	
LTSPCs	$ 3,191,061	$ 2,881,856
Mandatory commitments to purchase loans and USDA Securities	78,449	125,811

For more information about Farmer Mac's commitments to purchase loans, see Note 12 to the consolidated financial statements.

Off-Balance Sheet Arrangements

Farmer Mac offers approved lenders two credit enhancement alternatives to increase their liquidity or lending capacity while retaining the cash flow benefits of their loans: (1) Farmer Mac Guaranteed Securities; and (2) LTSPCs. Both products are available through each of the Agricultural Finance and Rural Infrastructure Finance lines of business. For securitization trusts where Farmer Mac is the primary beneficiary, the trust assets and liabilities are included on Farmer Mac's consolidated balance sheet. For securitization trusts where Farmer Mac is not the primary beneficiary and in the event of de-consolidation, both of these alternatives create off-balance sheet obligations for Farmer Mac. See Note 12 to the consolidated financial statements for more information about consolidation and Farmer Mac's off-balance sheet business activities.

As of December 31, 2021 and 2020, outstanding off-balance sheet LTSPCs and Farmer Mac Guaranteed Securities totaled $3.8 billion and $3.3 billion, respectively. The following table presents the balance of outstanding LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities as of December 31, 2021 and 2020:

Table 38

Outstanding Balance of LTSPCs and
Off-Balance Sheet Farmer Mac Guaranteed Securities

	As of December 31,	
	2021	2020
	(in thousands)	
Agricultural Finance:		
Corporate AgFinance:		
Unfunded Loan Commitments	$ 47,070	$ 10,466
Farm & Ranch:		
LTSPCs and unfunded commitments	2,587,154	2,314,965
Farmer Mac Guaranteed Securities	578,358	378,610
Total Agricultural Finance obligations	3,212,582	2,704,041
Rural Infrastructure:		
Rural Utilities:		
LTSPCs and Unfunded Loan Commitments	556,837	556,425
Farmer Mac Guaranteed Securities	2,755	4,412
Renewable Energy:		
Unfunded Loan Commitments	—	—
Total Rural Infrastructure obligations	559,592	560,837
Total off-balance sheet	$ 3,772,174	$ 3,264,878

See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management—Credit Risk – Loans and Guarantees" and Notes 2(c), 2(d), 5 and 12 to the consolidated financial statements for more information about Farmer Mac Guaranteed Securities and Notes 2(m) and 12 to the consolidated financial statements for more information about LTSPCs.

Other Matters

None.

Supplemental Information

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

Table 39

New Business Volume

	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
			(in thousands)		
For the quarter ended:					
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
June 30, 2020	1,069,693	279,021	358,866	—	1,707,580
March 31, 2020	768,700	165,128	392,668	10,000	1,336,496
December 31, 2019	721,248	311,756	242,900	10,000	1,285,904
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 40

Repayments of Assets					
	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
			(in thousands)		
For the quarter ended:					
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
Scheduled	$ 523,721	$ 109,543	$ 67,708	$ 240	$ 701,212
Unscheduled	448,900	50,737	3,935	—	503,572
June 30, 2020	$ 972,621	$ 160,280	$ 71,643	$ 240	$ 1,204,784
Scheduled	$ 320,488	$ 94,775	$ 165,467	$ —	$ 580,730
Unscheduled	326,078	8,318	—	—	334,396
March 31, 2020	$ 646,566	$ 103,093	$ 165,467	$ —	$ 915,126
Scheduled	$ 220,004	$ 94,130	$ 489,876	$ 198	$ 804,208
Unscheduled	244,303	17,747	34,063	—	296,113
December 31, 2019	$ 464,307	$ 111,877	$ 523,939	$ 198	$ 1,100,321
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 41

Outstanding Business Volume

	Agricultural Finance		Rural Infrastructure Finance		
	Farm & Ranch	Corporate AgFinance	Rural Utilities	Renewable Energy	Total
	(in thousands)				
As of:					
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
June 30, 2020	14,778,474	1,509,378	5,734,694	19,562	22,042,108
March 31, 2020	14,681,403	1,390,637	5,447,470	19,802	21,539,312
December 31, 2019	14,559,268	1,328,602	5,220,270	9,802	21,117,942

Table 42

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:				
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
June 30, 2020	10,793,629	2,845,266	5,076,445	18,715,340
March 31, 2020	10,296,598	2,818,869	4,996,478	18,111,945
December 31, 2019	10,045,712	2,863,199	4,702,577	17,611,488

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

Table 43

	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:														
December 31, 2021[2]	$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	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[1]	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 %
June 30, 2020	21,597	0.83 %	4,997	1.36 %	1,701	0.14 %	47	0.93 %	19,449	0.37 %	(1,322)	(0.13)%	46,469	0.89 %
March 31, 2020	19,230	0.76 %	4,421	1.32 %	1,315	0.11 %	58	1.51 %	19,150	0.39 %	(11)	— %	44,163	0.89 %
December 31, 2019	20,677	0.83 %	4,049	1.33 %	1,411	0.12 %	22	1.07 %	19,868	0.41 %	(36)	— %	45,991	0.95 %

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

(2) See Note 14 to the consolidated financial statements for a reconciliation of GAAP net interest income by segment to net effective spread by segment for the years ended December 31, 2021 and 2020.

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

Table 44

	Core Earnings by Quarter End								
	December 2021	September 2021	June 2021	March 2021	December 2020	September 2020	June 2020	March 2020	December 2019
					(in thousands)				
Revenues:									
Net effective spread	$ 54,333	$ 55,925	$ 56,551	$ 53,859	$ 54,522	$ 51,802	$ 46,469	$ 44,163	$ 45,991
Guarantee and commitment fees	4,637	4,322	4,334	4,240	4,652	4,659	4,943	4,896	5,432
Gain on sale of mortgage loans	6,539	—	—	—	—	—	—	—	—
Other	241	687	301	451	512	453	1,048	674	100
Total revenues	65,750	60,934	61,186	58,550	59,686	56,914	52,460	49,733	51,523
Credit related expense/(income):									
(Release of)/provision for losses	(1,428)	255	(983)	(31)	2,973	1,200	51	3,831	2,851
REO operating expenses	—	—	—	—	—	—	—	—	—
Losses/(gains) on sale of REO	—	—	—	—	22	—	—	(485)	—
Total credit related expense/(income)	(1,428)	255	(983)	(31)	2,995	1,200	51	3,346	2,851
Operating expenses:									
Compensation and employee benefits	11,246	10,027	9,779	11,795	9,497	8,791	8,087	10,127	6,732
General and administrative	8,492	6,330	6,349	6,336	6,274	5,044	5,295	5,363	5,773
Regulatory fees	812	750	750	750	750	725	725	725	725
Total operating expenses	20,550	17,107	16,878	18,881	16,521	14,560	14,107	16,215	13,230
Net earnings	46,628	43,572	45,291	39,700	40,170	41,154	38,302	30,172	35,442
Income tax expense	9,809	9,152	9,463	8,520	8,470	8,297	8,016	6,598	7,526
Preferred stock dividends	6,792	6,774	5,842	5,269	5,269	5,166	3,939	3,431	3,432
Core earnings	$ 30,027	$ 27,646	$ 29,986	$ 25,911	$ 26,431	$ 27,691	$ 26,347	$ 20,143	$ 24,484
Reconciling items:									
(Losses)/gains on undesignated financial derivatives due to fair value changes	$ (1,213)	$ (1,864)	$ (3,721)	$ 1,695	$ (1,758)	$ (4,149)	$ 8,700	$ (6,484)	$ 4,469
Gains/(losses) on hedging activities due to fair value changes	1,476	(2,093)	(2,097)	(271)	3,827	(5,245)	(2,676)	(5,925)	(220)
Unrealized (losses)/gains on trading assets	(76)	36	(61)	(14)	223	(258)	(20)	106	172
Net effects of amortization of premiums/discounts and deferred gains on assets consolidated at fair value	71	23	20	16	(77)	97	35	3	40
Net effects of terminations or net settlements on financial derivatives	(429)	(351)	109	1,165	1,583	233	720	(1,300)	1,339
Issuance costs on the retirement of preferred stock	—	—	—	—	—	(1,667)	—	—	—
Income tax effect related to reconciling items	36	892	1,208	(544)	(798)	1,957	(1,419)	2,856	(1,218)
Net income attributable to common stockholders	$ 29,892	$ 24,289	$ 25,444	$ 27,958	$ 29,431	$ 18,659	$ 31,687	$ 9,399	$ 29,066

Item 7A. 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 6 to the consolidated financial statements.

Item 8. Financial Statements

Management's Report on Internal Control over Financial Reporting

The management of Farmer Mac is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rule 13a-15(f). Internal control over financial reporting is a process designed under the supervision of Farmer Mac's Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Farmer Mac's financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Farmer Mac's internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of Farmer Mac; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of Farmer Mac are being made only in accordance with authorizations of management and directors of Farmer Mac; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of Farmer Mac's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of Farmer Mac's Chief Executive Officer and Chief Financial Officer, Farmer Mac's management assessed the effectiveness of Farmer Mac's internal control over financial reporting as of December 31, 2021. In making this assessment, Farmer Mac's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control - Integrated Framework (2013)*. Based on its evaluation under the COSO criteria, management concluded that Farmer Mac's internal control over financial reporting as of December 31, 2021 was effective.

Farmer Mac's independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of Farmer Mac's internal control over financial reporting as of December 31, 2021, as stated in their report appearing below.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders
of the Federal Agricultural Mortgage Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of the Federal Agricultural Mortgage Corporation and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of operations, comprehensive income, equity and cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for credit losses in 2020.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Available-for-sale AgVantage Farmer Mac Guaranteed Securities

As disclosed by management, the Company guarantees and purchases general obligations of lenders and other financial institutions that are secured by pools of the types of loans eligible for purchase under Farmer Mac's Agricultural Finance or Rural Infrastructure Finance lines of business, which are referred to as AgVantage securities. As described in Notes 5 and 13 to the consolidated financial statements, the total unpaid principal balance of available-for-sale AgVantage securities as of December 31, 2021 was $6.1 billion, and the fair value of the available-for-sale AgVantage securities of December 31, 2021 was $6.3

billion. The fair value of AgVantage securities is estimated using a discounted cash flow model. The significant unobservable input used is the discount rate commensurate with the risks involved.

The principal considerations for our determination that performing procedures relating to the valuation of available-for-sale AgVantage securities is a critical audit matter are (i) the high degree of audit effort in performing procedures and evaluating audit evidence related to the discount rate assumption used by management in the valuation of the available-for-sale AgVantage securities, and (ii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of available-for-sale AgVantage securities, including controls over the model, data and assumption. These procedures also included, among others, (i) the involvement of professionals with specialized skill and knowledge to assist in developing an independent range of prices for a sample of available-for-sale AgVantage securities, and (ii) comparing management's estimate to the independently developed range to evaluate the reasonableness of management's estimate. Developing the independent range of prices involved testing the completeness and accuracy of data provided by management and independently developing the discount rate assumption.

/s/ PricewaterhouseCoopers LLP
Washington, District of Columbia
February 28, 2022

We have served as the Company's auditor since 2010.

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	As of	
	December 31, 2021	December 31, 2020
	(in thousands)	
Assets:		
Cash and cash equivalents	$ 908,785	$ 1,033,941
Investment securities:		
Available-for-sale, at fair value (amortized cost of $3,834,714 and $3,843,666, respectively)	3,836,391	3,853,692
Held-to-maturity, at amortized cost	44,970	45,032
Other investments	1,229	—
Total Investment Securities	3,882,590	3,898,724
Farmer Mac Guaranteed Securities:		
Available-for-sale, at fair value (amortized cost of $6,135,807 and $6,594,992, respectively)	6,328,559	6,947,701
Held-to-maturity, at amortized cost	2,033,239	1,175,792
Total Farmer Mac Guaranteed Securities	8,361,798	8,123,493
USDA Securities:		
Trading, at fair value	4,401	6,695
Held-to-maturity, at amortized cost	2,436,331	2,473,626
Total USDA Securities	2,440,732	2,480,321
Loans:		
Loans held for investment, at amortized cost	8,314,096	7,261,933
Loans held for investment in consolidated trusts, at amortized cost	948,623	1,287,045
Allowance for losses	(14,041)	(13,832)
Total loans, net of allowance	9,248,678	8,535,146
Financial derivatives, at fair value	19,139	17,468
Interest receivable (includes $10,418 and $16,401, respectively, related to consolidated trusts)	177,355	186,429
Guarantee and commitment fees receivable	45,538	37,113
Deferred tax asset, net	15,558	18,321
Prepaid expenses and other assets	45,318	24,545
Total Assets	$ 25,145,491	$ 24,355,501
Liabilities and Equity:		
Liabilities:		
Notes payable	$ 22,716,156	$ 21,848,917
Debt securities of consolidated trusts held by third parties	981,379	1,323,786
Financial derivatives, at fair value	34,248	29,892
Accrued interest payable (includes $9,619 and $14,370, respectively, related to consolidated trusts)	83,992	92,738
Guarantee and commitment obligation	43,926	35,535
Accounts payable and accrued expenses	79,427	28,879
Reserve for losses	1,950	3,277
Total Liabilities	23,941,078	23,363,024
Commitments and Contingencies (Note 12)		
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	—
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, 9,235,205 shares and 9,205,897 shares outstanding, respectively	9,235	9,206
Additional paid-in capital	125,993	122,899
Accumulated other comprehensive income/(loss), net of tax	3,853	(13,923)
Retained earnings	579,270	509,560
Total Equity	1,204,413	992,477
Total Liabilities and Equity	$ 25,145,491	$ 24,355,501

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

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands, except per share amounts)		
Interest income:			
Investments and cash equivalents	$ 18,660	$ 42,144	$ 81,522
Farmer Mac Guaranteed Securities and USDA Securities	163,547	227,691	333,896
Loans	242,582	233,699	229,675
Total interest income	424,789	503,534	645,093
Total interest expense	204,014	312,946	471,958
Net interest income	220,775	190,588	173,135
Release of/(provision for) losses	860	(7,805)	(3,504)
Net interest income after release of/(provision for) losses	221,635	182,783	169,631
Non-interest income/(expense):			
Guarantee and commitment fees	12,669	12,549	13,666
(Losses)/gains on financial derivatives	(3,348)	(246)	5,282
Gain on sale of mortgage loans	6,539	—	—
(Losses)/gains on trading securities	(115)	50	326
Gains/(losses) on sale of available-for-sale investment securities	253	—	(236)
Gains on sale of real estate owned	—	463	—
Release of/(provision for) reserve for losses	1,327	(250)	3
Other income	2,069	3,487	1,904
Non-interest income	19,394	16,053	20,945
Operating expenses:			
Compensation and employee benefits	42,847	36,502	28,762
General and administrative	27,507	21,976	20,311
Regulatory fees	3,062	2,925	2,788
Real estate owned operating costs, net	—	—	64
Operating expenses	73,416	61,403	51,925
Income before income taxes	167,613	137,433	138,651
Income tax expense	35,353	28,785	29,105
Net income	132,260	108,648	109,546
Preferred stock dividends	(24,677)	(17,805)	(13,940)
Loss on retirement of preferred stock	—	(1,667)	(1,956)
Net income attributable to common stockholders	$ 107,583	$ 89,176	$ 93,650
Earnings per common share:			
Basic earnings per common share	$ 10.00	$ 8.31	$ 8.76
Diluted earnings per common share	$ 9.92	$ 8.27	$ 8.69

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

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands	
Net income	$ 132,260	$ 108,648	$ 109,546
Other comprehensive income/(loss) before taxes:			
Net unrealized gains/(losses) on available-for-sale securities	8,867	37,291	(22,831)
Net changes in held-to-maturity securities	(8,451)	(12,677)	(13,415)
Net unrealized gains/(losses) on cash flow hedges	22,084	(21,780)	(15,801)
Other comprehensive income/(loss) before tax	22,500	2,834	(52,047)
Income tax (expense)/benefit related to other comprehensive income/(loss)	(4,724)	(596)	10,930
Other comprehensive income/(loss) net of tax	17,776	2,238	(41,117)
Comprehensive income	$ 150,036	$ 110,886	$ 68,429

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

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

	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 January 1, 2019	8,400	$ 204,759	10,669	$ 10,669	$ 118,822	$ 24,956	$ 393,351	$ 752,557
Net Income	—	—	—	—	—	—	109,546	109,546
Other comprehensive loss, net of tax	—	—	—	—	—	(41,117)	—	(41,117)
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(13,940)	(13,940)
Common stock (cash dividend of $0.70 per share)	—	—	—	—	—	—	(29,954)	(29,954)
Issuance of Series D Preferred Stock	4,000	96,659	—	—	—	—	—	96,659
Redemption of Series B Preferred Stock	(3,000)	(73,044)	—	—	—	—	—	(73,044)
Loss on retirement of preferred stock	—	—	—	—	—	—	(1,956)	(1,956)
Issuance of Class C Common Stock	—	—	43	43	44	—	—	87
Stock-based compensation cost	—	—	—	—	2,258	—	—	2,258
Other stock-based award activity	—	—	—	—	(1,820)	—	—	(1,820)
Balance as of December 31, 2019	9,400	$ 228,374	10,712	$ 10,712	$ 119,304	$ (16,161)	$ 457,047	$ 799,276
Cumulative effect adjustment from adoption of current expected credit loss standard	—	—	—	—	—	—	(2,099)	(2,099)
Balance as of January 1, 2020	9,400	$ 228,374	10,712	$ 10,712	$ 119,304	$ (16,161)	$ 454,948	$ 797,177
Net Income	—	—	—	—	—	—	108,648	108,648
Other comprehensive income, net of tax	—	—	—	—	—	2,238	—	2,238
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(17,805)	(17,805)
Common stock (cash dividend of $0.80 per share)	—	—	—	—	—	—	(34,333)	(34,333)
Issuance of Series E Preferred Stock	3,180	77,003	—	—	—	—	—	77,003
Issuance of Series F Preferred Stock	4,800	116,160	—	—	—	—	—	116,160
Redemption of Series A preferred stock	(2,400)	(58,333)	—	—	—	—	—	(58,333)
Loss on retirement of preferred stock	—	—	—	—	—	—	(1,667)	(1,667)
Issuance of Class C Common Stock	—	—	29	29	56	—	—	85
Repurchase of Class C Common Stock	—	—	(4)	(4)	—	—	(231)	(235)
Stock-based compensation cost	—	—	—	—	4,128	—	—	4,128
Other stock-based award activity	—	—	—	—	(589)	—	—	(589)
Balance as of December 31, 2020	14,980	$ 363,204	10,737	$ 10,737	$ 122,899	$ (13,923)	$ 509,560	$ 992,477
Net Income	—	—	—	—	—	—	132,260	132,260
Other comprehensive income, net of tax	—	—	—	—	—	17,776	—	17,776
Cash dividends:								
Preferred stock	—	—	—	—	—	—	(24,677)	(24,677)
Common stock (cash dividend of $0.88 per share)	—	—	—	—	—	—	(37,873)	(37,873)
Issuance of Series G Preferred Stock	5,000	121,327	—	—	—	—	—	121,327
Issuance of Class C Common Stock	—	—	29	29	116	—	—	145
Stock-based compensation cost	—	—	—	—	4,310	—	—	4,310
Other stock-based award activity	—	—	—	—	(1,332)	—	—	(1,332)
Balance as of December 31, 2021	19,980	$ 484,531	10,766	$ 10,766	$ 125,993	$ 3,853	$ 579,270	$1,204,413

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

FEDERAL AGRICULTURAL MORTGAGE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOW

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Cash flows from operating activities:			
Net income	$ 132,260	$ 108,648	$ 109,546
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	17,314	8,343	(10,399)
Amortization of debt premiums, discounts, and issuance costs	6,780	21,319	50,052
Net change in fair value of trading securities, hedged assets, and financial derivatives	203,758	(256,466)	(220,080)
Gain on sale of real estate owned	—	(463)	—
Gain on the sale of available-for-sale investment securities	(253)	—	—
Gain on the sale of mortgage loans	(6,539)	—	—
Total (release)/provision for allowance for losses	(2,187)	8,055	3,501
Excess tax benefits related to stock-based awards	292	(440)	449
Deferred income taxes	(1,960)	(2,406)	789
Other	—	—	236
Stock-based compensation expense	4,311	4,128	2,258
Purchases of loans held for sale	—	(59,150)	—
Proceeds from the sale of loans held for sale	—	15,000	—
Proceeds from repayment of loans purchased as held for sale	46,968	59,370	54,195
Net change in:			
Interest receivable	6,945	11,054	(19,080)
Guarantee and commitment fees receivable	(34)	164	(59)
Other assets	(9,830)	(3,348)	(2,744)
Accrued interest payable	(8,746)	(14,221)	10,216
Custodial deposit liability	44,955	—	—
Other liabilities	2,378	5,866	1,421
Net cash provided by/(used in) operating activities	436,412	(94,547)	(19,699)
Cash flows from investing activities:			
Purchases of available-for-sale investment securities	(2,004,911)	(2,852,658)	(2,166,376)
Purchases of other investment securities	(1,229)	—	—
Purchases of Farmer Mac Guaranteed Securities and USDA Securities	(4,380,901)	(2,074,701)	(2,691,104)
Purchases of loans held for investment	(3,029,668)	(3,167,198)	(2,234,715)
Purchases of defaulted loans	(8,713)	(6,272)	(469)
Proceeds from repayment of available-for-sale investment securities	1,740,000	1,961,895	1,425,402
Proceeds from repayment of Farmer Mac Guaranteed Securities and USDA Securities	4,027,726	2,517,957	2,190,702
Proceeds from repayment of loans purchased as held for investment	1,889,408	1,715,663	758,192
Proceeds from sale of loans previously classified as held for investment	301,393	—	—
Proceeds from sale of available-for-sale investment securities	257,524	—	12,367
Proceeds from sale of Farmer Mac Guaranteed Securities	113,175	165,054	321,414
Proceeds from sale of real estate owned	—	4,169	—
Net cash used in investing activities	(1,096,196)	(1,736,091)	(2,384,587)
Cash flows from financing activities:			
Proceeds from issuance of discount notes	61,112,365	68,548,733	64,642,545
Proceeds from issuance of medium-term notes	11,173,147	13,509,754	10,195,775
Payments to redeem discount notes	(60,743,066)	(68,960,492)	(64,079,322)
Payments to redeem medium-term notes	(10,586,370)	(10,414,765)	(7,970,126)
Payments to third parties on debt securities of consolidated trusts	(480,272)	(504,807)	(181,493)
Proceeds from common stock issuance	117	56	44
Retirement of preferred stock	—	(60,000)	(75,000)
Proceeds from preferred stock issuance, net of stock issuance costs	121,327	193,163	96,659
Tax payments related to share-based awards	(1,305)	(560)	(1,777)
Purchases of common stock	—	(235)	—
Dividends paid on common and preferred stock	(61,315)	(50,649)	(43,894)
Net cash provided by financing activities	534,628	2,260,198	2,583,411
Net change in cash and cash equivalents	(125,156)	429,560	179,125
Cash and cash equivalents at beginning of period	1,033,941	604,381	425,256
Cash and cash equivalents at end of period	$ 908,785	$ 1,033,941	$ 604,381

Cash paid during the period for:			
Interest	198,593	283,335	365,526
Income taxes	36,300	30,000	23,100
Non-cash activity:			
Loans acquired and securitized as Farmer Mac Guaranteed Securities	113,175	165,054	321,414
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	113,175	165,054	263,561
Reclassification of defaulted loans from loans held for investment in consolidated trusts to loans held for investment	24,690	47,036	5,479
Reclassification of loans held for sale to loans held for investment	—	44,150	—
Reclassification of loans held for investment to loans held for sale	301,551	—	—
Net assets obtained in securitization	15,369	—	—
Capitalized interest	1,259	1,348	—
(Recovery)/charge-off from the allowance for losses	(1,054)	5,759	—
Loan payoff not yet received	(7,500)	—	—
Purchases of securities - traded, not yet settled	1,980	—	—

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

1. ORGANIZATION

The Federal Agricultural Mortgage Corporation ("Farmer Mac") is a stockholder-owned, federally chartered instrumentality of the United States established under Title VIII of the Farm Credit Act of 1971, as amended (12 U.S.C. §§ 2279aa et seq.), which is sometimes referred to as Farmer Mac's charter. Farmer Mac was originally created by the United States Congress to provide a secondary market for a variety of loans made to borrowers in rural America. This secondary market is designed to increase the availability of long-term credit at stable interest rates to America's rural communities and to provide rural borrowers with the benefits of capital markets pricing and product innovation.

Farmer Mac's secondary market activities include:

- purchasing eligible loans directly from lenders;
- providing advances against eligible loans by purchasing obligations secured by those loans;
- securitizing assets and guaranteeing the payment of principal and interest on the resulting securities that represent interests in, or obligations secured by, pools of eligible loans; and
- issuing long-term standby purchase commitments ("LTSPCs") for eligible loans.

Farmer Mac conducts its secondary market activities through two lines of business — Agricultural Finance and Rural Infrastructure Finance. For more information about those lines of business and the segments within them, see Note 14 - Business Segments.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting and reporting policies of Farmer Mac conform with accounting principles generally accepted in the United States of America ("generally accepted accounting principles" or "GAAP"). The preparation of consolidated financial statements in conformity with generally accepted accounting principles requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates. The following are the significant accounting policies that Farmer Mac follows in preparing and presenting its consolidated financial statements:

(a) Principles of Consolidation

The consolidated financial statements include the accounts of Farmer Mac and its two subsidiaries during the year: (1) Farmer Mac Mortgage Securities Corporation, 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 VIEs in which Farmer Mac determined itself to be the primary beneficiary.

(b) Cash and Cash Equivalents

Farmer Mac considers highly liquid investment securities with maturities at the time of purchase of three months or less to be cash equivalents.

(c) Investment Securities, Farmer Mac Guaranteed Securities, and USDA Securities

Securities for which Farmer Mac has the intent and ability to hold to maturity are classified as held-to-maturity and are carried at amortized cost. Securities for which Farmer Mac does not have the positive intent and ability to hold to maturity are classified as available-for-sale or trading and are carried at estimated fair value. Unrealized gains and losses on available-for-sale securities are reported as a component of accumulated other comprehensive income in stockholders' equity. For securities classified as trading, unrealized gains and losses are included in earnings. Gains and losses on the sale of available-for-sale and trading securities are determined using the specific identification cost method.

Farmer Mac determines the fair value of investment securities using quoted market prices, when available. Farmer Mac determines the fair values of certain investment securities for which quoted market prices are not available, Farmer Mac Guaranteed Securities, and USDA Securities based on the present value of the associated expected future cash flows. In estimating the present value of the expected future cash flows, management is required to make estimates and assumptions. The key estimates and assumptions include discount rates and collateral repayment rates. Premiums, discounts, and other deferred costs are amortized to interest income using the effective interest method.

Farmer Mac generally receives compensation when loans with yield maintenance provisions underlying Farmer Mac Guaranteed Securities prepay. These yield maintenance payments mitigate Farmer Mac's exposure to reinvestment risk and are calculated such that, when reinvested with the prepaid principal, they should generate substantially the same cash flows that would have been generated had the loans not prepaid. Yield maintenance payments are recognized as interest income in the consolidated statements of operations upon receipt.

Interest Income Recognition on IO-FMGS

Farmer Mac recognizes interest income for its IO-FMGS by applying the effective yield methodology required by GAAP for financial assets that are either not of high credit quality at the time of acquisition or can be contractually prepaid or otherwise settled in such a way that Farmer Mac would not recover substantially all of its recorded investment. The amount of periodic interest income recognized is determined by applying the IO-FMGS effective interest rate to its amortized cost basis (or “reference amount”). At the time of acquisition, the effective interest rate is calculated by solving for the single discount rate that equates the present value of Farmer Mac's best estimate of the amount and timing of the cash flows expected to be collected from the IO-FMGS to its purchase cost. To prepare its best estimate of cash flows expected to be collected, Farmer Mac develops a number of assumptions about the future performance of the pool of mortgage loans that serve as collateral, including assumptions about the timing and amount of prepayments and credit losses. In each subsequent quarterly reporting period, the amount and timing of cash flows expected to be collected from the IO-FMGS are re-estimated based upon current information and events.

(d) Loans

Loans for which Farmer Mac has the positive intent and ability to hold for the foreseeable future are classified as held for investment and reported at their unpaid principal balance, net of unamortized purchase discounts or premiums. Loans for which Farmer Mac does not have the positive intent and ability to hold for the foreseeable future are classified as held for sale and reported at the lower of cost or fair value determined on a pooled basis. Farmer Mac de-recognizes sold loans, and recognizes any associated gain or loss, when they have been legally isolated from Farmer Mac, the buyer has the right to pledge or exchange them, and Farmer Mac does not maintain effective control over them. When Farmer Mac consolidates a trust, it recognizes the loans underlying the trust in the consolidated balance sheets as "Loans held for investment in consolidated trusts, at amortized cost." See Note 2(o) for more information on the accounting policy related to consolidation.

Non-accrual Loans

Non-accrual loans are loans for which it is probable that Farmer Mac will be unable to collect all amounts due according to the contractual terms of the loan agreement and include all loans 90 days or more past due. When a loan becomes 90 days past due, interest accrual on the loan is discontinued and interest previously accrued is reversed against interest income in the current period. The interest on such loans is accounted for on the cash basis until a loan qualifies for return to accrual status. Loans are returned to accrual status when all the principal and interest payments contractually due are collected and certain performance criteria are met.

Troubled Debt Restructuring ("TDR")

A modification to the contractual terms of a loan that results in granting a concession to a borrower experiencing financial difficulties is considered a TDR. Farmer Mac has granted a concession when, as a result of the restructuring, it does not expect to collect all amounts due in a timely manner, including interest accrued at the original contract rate. In making its determination of whether a borrower is experiencing financial difficulties, Farmer Mac considers several factors, including whether (1) the borrower has declared or is in the process of declaring bankruptcy, (2) there is substantial doubt as to whether the borrower will continue to be a going concern, and (3) the borrower can obtain funds from other sources at an effective interest rate at or near a current market interest rate for debt with similar risk characteristics.

(e) Securitization

Securitization involves the transfer of financial assets to another entity in exchange for cash and/or beneficial interests in the assets transferred. Farmer Mac or third parties transfer agricultural mortgage loans, Rural Utilities loans, or USDA securities into trusts that are used as vehicles for the securitization of the transferred financial assets. The trusts issue Farmer Mac Guaranteed Securities that are beneficial interests in the assets of the trusts, to either Farmer Mac or third-party investors. Farmer Mac guarantees the timely payment of principal and interest on the securities issued by the trusts and receives guarantee fees as compensation for its guarantee. Farmer Mac recognizes guarantee fees on the accrual basis over the terms of the Farmer Mac Guaranteed Securities, which generally coincide with the terms of the underlying loans. As such, no guarantee fees are unearned at the end of any reporting period.

Farmer Mac is required to perform under its guarantee obligation when the underlying loans for the off-balance sheet Farmer Mac Guaranteed Securities do not make their scheduled installment payments. When a loan underlying an Agricultural Finance Guaranteed Security becomes 90 days or more past due, Farmer Mac may, in its sole discretion, repurchase the loan from the trust and generally does repurchase such loans, thereby reducing the principal balance of the outstanding Farm & Ranch Guaranteed Security. When Farmer Mac purchases a delinquent loan underlying a Farmer Mac Guaranteed Security, Farmer Mac stops accruing the guarantee fee upon loan purchase.

If Farmer Mac repurchases a loan that is collateral for a Farmer Mac Guaranteed Security, Farmer Mac would have the right to enforce the terms of the loan, and in the event of a default, would have access to the underlying collateral. Farmer Mac typically recovers its investment in the defaulted loans purchased either through borrower payments, loan payoffs, payments by third parties, or foreclosure and sale of the collateral securing the loans.

Farmer Mac has recourse to the USDA for any amounts advanced for the timely payment of principal and interest on Farmer Mac Guaranteed USDA Securities. That recourse is the USDA guarantee, a full-faith-and-credit obligation of the United States that becomes enforceable if a lender fails to repurchase the USDA-guaranteed portion from its owner within 30 days after written demand from the owner when (a) the borrower under the guaranteed loan is in default not less than 60 days in the payment of any principal or interest due on the USDA-guaranteed portion, or (b) the lender has failed to remit to the owner the payment made by the borrower on the USDA-guaranteed portion or any related loan subsidy within 30 days after the lender's receipt of the payment.

Transfers of Financial Assets

Farmer Mac accounts for transfers of financial assets as sales when it has surrendered control over the related assets. Whether control has been relinquished requires, among other things, an evaluation of relevant legal considerations and an assessment of the nature and extent of Farmer Mac's continuing involvement with the assets transferred. Gains and losses stemming from transfers reported as sales are included in "Gain on sale of mortgage loans" in the accompanying consolidated statements of operations. Assets obtained and liabilities incurred in connection with transfers reported as sales are initially recognized in the consolidated balance sheets at fair value.

In the fourth quarter of 2021, Farmer Mac executed a structured securitization of a $299.4 million pool of Farm & Ranch loans. The securitization consisted of two classes of securities, Class A and Class B. The Class A securities are backed by 92.5% of the pool and is guaranteed by Farmer Mac. The Class B Tranche is backed by the remaining 7.5% of the pool. Credit losses on the entire pool are first allocated to the Class B securities. As a result of the transaction, Farmer Mac recognized the following:

1. A guarantee asset and liability related to the guarantee fees and the obligation to stand ready to perform on the guarantee to the Class A security holders.
2. A servicing asset related to Farmer Mac's role as Master and Central Servicer. Farmer Mac will earn a related servicing fee.
3. A retained interest-only strip (IO-FMGS) security.

The above assets and liabilities were initially recorded on the consolidated balance sheets at fair value. For more information on fair value measurement see Footnote 13.

The securitization trust used to effect this transaction was a variable interest entity that Farmer Mac does not consolidate. See Table 2.4 below for more information about these trusts.

Gains or losses arising from securitization are recorded as the difference between the transferred loans' carrying values and the sum of (a) the initial fair value of the assets or liabilities received and (b) net cash proceeds. For the year ended December 31, 2021, Farmer Mac recorded $6.5 million in gains attributable to securitization activity. These gains were reported in "Gain on sale of mortgage loans" in the consolidated statements of operations.

(f) Financial Derivatives

Farmer Mac enters into financial derivative transactions principally to protect against risk from the effects of market price or interest rate movements on the value of certain assets, future cash flows or debt issuance, not for trading or speculative purposes. Farmer Mac enters into interest rate swap contracts to adjust the characteristics of its short-term debt to match more closely the cash flow and duration characteristics of its longer-term loans and other assets, and also to adjust the characteristics of its long-term debt to match more closely the cash flow and duration characteristics of its short-term assets, thereby reducing interest rate risk and, often times, deriving an overall lower effective cost of borrowing than would otherwise be available to Farmer Mac in the conventional debt market.

Accounting for financial derivatives differs depending on whether a derivative is designated in a hedge accounting relationship. Derivative instruments designated in fair value hedge accounting relationships mitigate exposure to changes in the fair value of assets or liabilities. Derivative instruments designated in cash flow hedge accounting relationships mitigate exposure to the variability in expected future cash flows or other forecasted transactions. In order to qualify for fair value or cash flow hedge accounting treatment, documentation must indicate the intention to designate the derivative as a hedge of a specific asset, or liability, or a future cash flow. Effectiveness of the hedge is assessed before the end of the quarter of inception and monitored over the life of the hedging relationship.

Changes in the fair values of financial derivatives not designated as cash flow or fair value hedges were reported in "(Losses)/gains on financial derivatives" in the consolidated statements of operations. For financial derivatives designated in fair value hedge accounting relationships, changes in the fair values of hedged items related to the risk being hedged are reported in "Net interest income" in the consolidated statements of operations. Interest accruals on derivatives designated in fair value hedge relationships are also recorded in "Net interest income" in the consolidated statements of operations. For financial derivatives designated in cash flow hedge relationships, the unrealized gain or loss on the derivative is recorded in other comprehensive income. Because the hedging instrument is an interest rate swap and the hedged forecasted transactions are future interest payments on variable rate debt, amounts recorded in accumulated other comprehensive income are reclassified to "Total interest expense" in conjunction with the recognition of interest expense on the debt.

See Notes 6 and 13 for more information on financial derivatives.

(g) Notes Payable

Debt issuance costs and premiums and discounts are deferred and amortized to interest expense using the effective interest method over the contractual life of the related debt.

(h) Allowance for Losses and Reserve for Losses

Current Expected Credit Loss ("CECL")

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

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

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

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

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

Charge-offs, under CECL

Farmer Mac records a charge-off from the allowance for losses when either a) a loan, or a portion of a loan, is deemed uncollectible; or b) a loss has been confirmed through the receipt of assets, generally the underlying collateral, in full satisfaction of the loan. The charge-off equals the excess of the recorded investment in the loan over the fair value of the collateral less estimated selling costs.

Estimation Methodology, under CECL

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

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

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

- economic conditions;
- geographic and agricultural commodity/product concentrations in the portfolio;
- the credit profile of the portfolio, including risk ratings and financial metrics;
- delinquency trends of the portfolio;
- historical charge-off and recovery activities of the portfolio; and
- other factors to capture current portfolio trends and characteristics that differ from historical experience.

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

Allowance for Loss on Available-for-Sale (AFS) Securities, under CECL

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

Collateral Dependent Assets ("CDAs"), under CECL

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

Probable Incurred Credit Loss (prior to January 1, 2020)

Prior to January 1, 2020, Farmer Mac maintained an allowance for losses to cover estimated probable losses incurred as of the balance sheet date on loans held ("allowance for loan losses") and loans underlying LTSPCs and off-balance sheet Farmer Mac Guaranteed Securities ("reserve for losses") based on available information. Disaggregation by: commodity type, portfolio, and risk rating; was performed, where appropriate, in analyzing the need for an allowance for losses.

General Allowance for Loss, for Probable Incurred Credit Losses

Prior to January 1, 2020, Farmer Mac's methodology to determine its allowance for losses incorporated Farmer Mac's automated loan classification system. That system scored loans based on criteria such as historical repayment performance, indicators of current financial condition, loan seasoning, loan size and loan-to-value ratio. The previous allowance methodology captured the migration of loan scores across concurrent and overlapping 3-year time horizons and calculated loss rates separately within each loan classification for (1) loans underlying LTSPCs and (2) loans held and loans underlying Farm & Ranch Guaranteed Securities. The calculated loss rates were applied to the current classification distribution of unimpaired loans in Farmer Mac's portfolio to estimate inherent losses, under the assumption that the historical credit losses and trends used to calculate loss rates would continue in the future.
Management evaluated those assumptions through considering many relevant factors, including:

- economic conditions;
- geographic and agricultural commodity/product concentrations in the portfolio;
- the credit profile of the portfolio;
- delinquency trends of the portfolio;
- historical charge-off and recovery activities of the portfolio; and
- other factors to capture current portfolio trends and characteristics that differ from historical experience.

Prior to January 1, 2020, Management believed that its use of that methodology produced a reasonable estimate of probable losses incurred as of the balance sheet date, for all loans held in the Farm & Ranch portfolio and loans underlying off-balance sheet Farm & Ranch Guaranteed Securities and LTSPCs.

Prior to January 1, 2020, Farmer Mac separately evaluated the Rural Utilities loans it owned to determine if there were any probable losses inherent in those assets.

Specific Allowance for Impaired Loans

Prior to January 1, 2020, Farmer Mac analyzed individual loans for impairment. Those individual loans included loans 90 days or more past due, in foreclosure, restructured, in bankruptcy and certain performing loans that had previously been delinquent or were secured by real estate that produced agricultural commodities or products then under stress.

(i) 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 years ended December 31, 2021, 2020, and 2019:

Table 2.1

	For the Years Ended December 31,								
	2021			2020			2019		
	Net Income	Weighted-Average Shares	$ per Share	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	$ 107,583	10,758	$ 10.00	$ 89,176	10,728	$ 8.31	$ 93,650	10,696	$ 8.76
Effect of dilutive securities[(1)]									
SARs and restricted stock	—	88	(0.08)	—	58	(0.04)	—	82	(0.07)
Diluted EPS	$ 107,583	10,846	$ 9.92	$ 89,176	10,786	$ 8.27	$ 93,650	10,778	$ 8.69

(1) For the years ended December 31, 2021, 2020, and 2019, SARs and restricted stock of 39,326, 74,336, and 43,374, respectively, were outstanding but not included in the computation of diluted earnings per share of common stock because they were anti-dilutive. For the years ended December 31, 2021, 2020, and 2019, contingent shares of unvested restricted stock of 18,183, 12,680, and 10,349, 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.

(j) Income Taxes

Deferred federal income tax assets and liabilities are established for temporary differences between financial and taxable income and are measured using the current enacted statutory tax rate. Income tax expense is equal to the income taxes payable in the current year plus the net change in the deferred tax asset or liability balance.

Deferred tax assets are measured at rates in effect when they arise. To the extent rates change, the deferred tax asset will be adjusted to reflect the new rate. A increase in corporate tax rates would result in an increase in the value of the deferred tax asset.

Farmer Mac evaluates its tax positions quarterly to identify and recognize any liabilities related to uncertain tax positions in its federal income tax returns. Farmer Mac uses a two-step approach in which income tax benefits are recognized if, based on the technical merits of a tax position, it is more likely than not (a probability of greater than 50%) that the tax position would be sustained upon examination by the taxing authority, which includes all related appeals and litigation process. The amount of tax benefit recognized is then measured at the largest amount of tax benefit that is greater than 50% likely to be realized upon settlement with the taxing authority, considering all information available at the reporting date. Farmer Mac's policy for recording interest and penalties associated with uncertain tax positions is to record them as a component of income tax expense. Farmer Mac establishes a valuation allowance for deferred tax assets if it is more likely than not that some portion or all of the deferred tax assets will not be realized. In determining its deferred tax asset valuation allowance, Farmer Mac considered its taxable income of the appropriate character (for example, ordinary income or capital gain) within the carryback and carryforward periods available under the tax law and the impact of possible tax planning strategies.

(k) Stock-Based Compensation

Farmer Mac accounts for its stock-based employee compensation plans using the grant date fair value method of accounting. Farmer Mac measures the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award determined using the Black-Scholes option pricing model. The cost is recognized over the period during which an employee is required to provide service in exchange for the award. For performance-based grants, Farmer Mac recognizes the grant-date fair value over the vesting period as long as it remains probable that the performance conditions will be met. If the service or performance conditions are not met, Farmer Mac reverses previously recognized compensation expense upon forfeiture.

Farmer Mac recognized $4.3 million, $4.1 million, and $2.3 million of compensation expense related to SARs and non-vested restricted stock awards for 2021, 2020, and 2019, respectively.

(l) 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 years ended December 31, 2021, 2020, and 2019.

Table 2.2

	Available-for-Sale Securities	Held-to-Maturity Securities	Cash Flow Hedges	Total
		(in thousands)		
Balance as of January 1, 2019	$ (25,360)	$ 43,443	$ 6,873	$ 24,956
Other comprehensive loss before reclassifications	(14,976)	—	(11,561)	(26,537)
Amounts reclassified from AOCI	(3,061)	(10,598)	(921)	(14,580)
Net comprehensive loss	(18,037)	(10,598)	(12,482)	(41,117)
Balance as of December 31, 2019	$ (43,397)	$ 32,845	$ (5,609)	$ (16,161)
Other comprehensive income/(loss) before reclassifications	32,739	—	(21,606)	11,133
Amounts reclassified from AOCI	(3,279)	(10,016)	4,400	(8,895)
Net comprehensive income/(loss)	29,460	(10,016)	(17,206)	2,238
Balance as of December 31, 2020	$ (13,937)	$ 22,829	$ (22,815)	$ (13,923)
Other comprehensive income before reclassifications	9,114	—	11,602	20,716
Amounts reclassified from AOCI	(2,109)	(6,676)	5,845	(2,940)
Net comprehensive income/(loss)	7,005	(6,676)	17,447	17,776
Balance as of December 31, 2021	$ (6,932)	$ 16,153	$ (5,368)	$ 3,853

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 years ended December 31, 2021, 2020, and 2019:

Table 2.3

	For the Years Ended December 31,								
	2021			2020			2019		
	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax	Before Tax	Provision (Benefit)	After Tax
					(in thousands)				
Other comprehensive income:									
Available-for-sale-securities:									
Unrealized holding gains/(losses) on available-for-sale securities	$ 11,537	$ 2,423	$ 9,114	$ 41,442	$ 8,703	$ 32,739	$ (18,958)	$ (3,982)	$ (14,976)
Less reclassification adjustments included in:									
Net interest income[1]	(2,333)	(490)	(1,843)	(3,895)	(818)	(3,077)	(3,834)	(805)	(3,029)
(Gains)/losses on sale of available-for-sale investment securities[2]	(253)	(53)	(200)	—	—	—	236	50	186
Other income[3]	(84)	(18)	(66)	(256)	(54)	(202)	(275)	(57)	(218)
Total	$ 8,867	$ 1,862	$ 7,005	$ 37,291	$ 7,831	$ 29,460	$ (22,831)	$ (4,794)	$ (18,037)
Held-to-maturity securities:									
Less reclassification adjustments included in:									
Net interest income[4]	(8,451)	(1,775)	(6,676)	(12,677)	(2,661)	(10,016)	(13,415)	(2,817)	(10,598)
Total	$ (8,451)	$ (1,775)	$ (6,676)	$ (12,677)	$ (2,661)	$ (10,016)	$ (13,415)	$ (2,817)	$ (10,598)
Cash flow hedges									
Unrealized gains/(losses) on cash flow hedges	$ 14,685	$ 3,083	$ 11,602	$ (27,350)	$ (5,744)	$ (21,606)	$ (14,635)	$ (3,074)	$ (11,561)
Less reclassification adjustments included in:									
Net interest income[5]	7,399	1,554	5,845	5,570	1,170	4,400	(1,166)	(245)	(921)
Total	$ 22,084	$ 4,637	$ 17,447	$ (21,780)	$ (4,574)	$ (17,206)	$ (15,801)	$ (3,319)	$ (12,482)
Other comprehensive income/(loss)	$ 22,500	$ 4,724	$ 17,776	$ 2,834	$ 596	$ 2,238	$ (52,047)	$ (10,930)	$ (41,117)

(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.

(m) Guarantees

Farmer Mac accounts for its LTSPCs as guarantees. LTSPCs and securitization trusts where Farmer Mac is not the primary beneficiary result in the creation of off-balance sheet obligations for Farmer Mac. Farmer Mac records, at the inception of an off-balance sheet guarantee or LTSPC, a liability for the fair value of its obligation to stand ready to perform under the terms of each guarantee or LTSPC and an asset that is equal to the fair value of the fees that will be received over the life of each guarantee or LTSPC. The fair values of the guarantee obligation and asset at inception 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. Because the cash flows of these instruments may be interest rate path dependent, these values and projected discount rates are derived using a Monte Carlo simulation model. The guarantee obligation and corresponding asset are later amortized into guarantee and commitment fee income in relation to the decrease in the unpaid principal balance on the underlying Agricultural Finance real estate mortgage loans and Rural Infrastructure Finance loans.

See Note 2(h) for Farmer Mac's policy for estimating probable losses for LTSPCs.

(n) Fair Value Measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, Farmer Mac uses various valuation approaches, including market and income based approaches. When available, the fair value of Farmer Mac's financial instruments is based on quoted market prices, valuation techniques that use observable market-based inputs, or unobservable inputs that are corroborated by market data. Pricing information obtained from third parties is internally validated for reasonableness before use in the consolidated financial statements.

Fair value measurements related to financial instruments that are reported at fair value in the consolidated financial statements each period are referred to as recurring fair value measurements. Fair value measurements related to financial instruments that are not reported at fair value each period but are subject to fair value adjustments in certain circumstances are referred to as nonrecurring fair value measurements.

Fair Value Classification and Transfers

The fair value hierarchy ranks the quality and reliability of the information used to determine fair values. The hierarchy gives highest priority to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The following three levels are used to classify fair value measurements:

Level 1	Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.
Level 2	Quoted prices in markets that are not active or financial instruments for which all significant inputs are observable, either directly or indirectly.
Level 3	Prices or valuations that require unobservable inputs that are significant to the fair value measurement.

Farmer Mac performs a detailed analysis of the assets and liabilities carried at fair value to determine the appropriate level based on the transparency of the inputs used in the valuation techniques. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, an instrument's level within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement. Farmer Mac's assessment of the significance of a particular input to the fair value measurement of an instrument requires judgment and consideration of factors specific to the instrument. While Farmer Mac believes its valuation methods are appropriate and consistent with those of other market participants, using different methodologies or assumptions to determine fair value could result in a materially different estimate of fair value for some financial instruments.

The following is a description of the fair value techniques used for instruments measured at fair value as well as the general classification of those instruments under the valuation hierarchy described above.

Recurring Fair Value Measurements and Classification

Available-for-Sale and Trading Investment Securities

The fair value of investments in U.S. Treasuries is based on unadjusted quoted prices in active markets. Farmer Mac classifies these fair value measurements as "Level 1."

For a significant portion of Farmer Mac's investment portfolio, including most asset-backed securities, senior agency debt securities, and Government/GSE guaranteed mortgage-backed securities, fair value is primarily determined using a reputable and nationally recognized third-party pricing service. The prices obtained are non-binding and generally representative of recent market trades. The fair value of certain asset-backed and Government guaranteed mortgage-backed securities are estimated based on quotations from brokers or dealers. Farmer Mac corroborates its primary valuation source by obtaining a secondary price from another independent third-party pricing service. Farmer Mac classifies these fair value measurements as "Level 2."

For certain investment securities that are thinly traded or not quoted, Farmer Mac estimates fair value using internally-developed models that employ a discounted cash flow approach. Farmer Mac maximizes the use of observable market data, including prices of financial instruments with similar maturities and characteristics, interest rate yield curves, measures of volatility, and prepayment rates. Farmer Mac generally considers a market to be thinly traded or not quoted if the following conditions exist: (1) there are few transactions for the financial instruments; (2) the prices in the market are not current; (3) the price quotes vary significantly either over time or among independent pricing services or dealers; or (4) there is limited availability of public market information. Farmer Mac classifies these fair value measurements as "Level 3."

Available-for-Sale and Trading Farmer Mac Guaranteed Securities and USDA Securities

Farmer Mac estimates the fair value of its Farmer Mac Guaranteed Securities and USDA Securities by discounting the projected cash flows of these instruments at discount rates commensurate with the risks involved. 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. Farmer Mac classifies these fair value measurements as Level 3 because there is limited market activity and therefore little or no price transparency.

Financial Derivatives

The fair value of exchange-traded U.S. Treasury futures is based on unadjusted quoted prices for identical financial instruments. Farmer Mac classifies these fair value measurements as Level 1.

Farmer Mac's derivative portfolio consists primarily of interest rate swaps and forward sales contracts on the debt of other GSEs. Farmer Mac estimates the fair value of these financial instruments primarily based upon the counterparty valuations. Farmer Mac internally values its derivative portfolio using a discounted cash flow valuation technique and obtains a secondary valuation for certain interest rate swaps to corroborate the counterparty valuations. Farmer Mac also regularly reviews the counterparty valuations as part of the collateral exchange process. Farmer Mac classifies these fair value measurements as Level 2.

See Note 13 for more information regarding fair value measurement.

(o) Consolidation of Variable Interest Entities

Farmer Mac has a variable interest in various entities that are considered to be VIEs. These interests include investments in securities issued by VIEs, such as Farmer Mac agricultural mortgage-backed securities created pursuant to Farmer Mac's securitization transactions and mortgage and asset-backed trusts that Farmer Mac did not create. The consolidation model uses a qualitative evaluation that requires consolidation of an entity when the reporting enterprise both: (1) has the power to direct matters which significantly impact the activities and success of the entity, and (2) has exposure to benefits and/or losses that could potentially be significant to the entity. The reporting enterprise that meets both these conditions is deemed the primary beneficiary of the VIE. Upon consolidation of a VIE, Farmer Mac accounts for the incremental assets and liabilities initially at their carrying amounts.

The VIEs in which Farmer Mac has a variable interest are limited to securitization trusts. The major factor in determining if Farmer Mac is the primary beneficiary is whether Farmer Mac has the power to direct the activities of the trust that potentially have the most significant impact on the economic performance of the trust. Generally, the ability to make decisions regarding default mitigation is evidence of that power. Farmer Mac determined that it is the primary beneficiary for the securitization trusts related to most Agricultural Finance securitization transactions because of its rights as guarantor under both programs to control the default mitigation activities of the trusts. For certain securitization trusts created when loans subject to LTSPCs were converted to Agricultural Finance Guaranteed Securities, Farmer Mac determined that it was not the primary beneficiary since the power to make decisions regarding default mitigation was shared among unrelated parties. For these trusts, the shared power provisions are substantive with respect to decision-making power and relate to the same activity (i.e., default mitigation). For similar securitization transactions where the power to make decisions regarding default mitigation was shared with a related party, Farmer Mac determined that it was the primary beneficiary because the applicable accounting guidance does not permit parties within a related party group to conclude that the power is shared. In the event that a related party status changes, consolidation or deconsolidation of these securitization trusts could occur.

For those trusts that Farmer Mac is the primary beneficiary, the assets and liabilities are presented on the consolidated balance sheets as "Loans held for investment in consolidated trusts, at amortized cost" and "Debt securities of consolidated trusts held by third parties," respectively. These assets can only be used to satisfy the obligations of the related trust.

For those trusts in which Farmer Mac has a variable interest but is not the primary beneficiary, Farmer Mac's interests are presented as either "Farmer Mac Guaranteed Securities," "USDA Securities," or "Investment securities" on the consolidated balance sheets. Farmer Mac's involvement in VIEs classified as Farmer Mac Guaranteed Securities or USDA Securities include securitization trusts under the Agricultural Finance line of business. In the case of USDA guaranteed trusts, Farmer Mac is not determined to be the primary beneficiary because it does not have the decision-making power over default mitigation activities. Based on the USDA's program authority over the servicing and default mitigation activities of the USDA guaranteed portions of loans, Farmer Mac believes that the USDA has the power to direct the activities that most significantly impact the trust's economic performance. Farmer Mac does not have exposure to losses that could be significant to the trust and there are no triggers that would result in Farmer Mac superseding the USDA's authority with regard to directing the activities of the trust. For VIEs classified as investment securities, which include auction-rate certificates, asset-backed securities, and government-sponsored enterprise ("GSE") guaranteed mortgage-backed securities, Farmer Mac is determined not to be the primary beneficiary because of the lack of voting rights or other powers to direct the activities of the trust.

In fourth quarter 2021, Farmer Mac executed a structured securitization of a $299.4 million pool of Farm & Ranch loans. For more information about this securitization, see Note 2(e) - Securitization. The securitization trust used to effect this transaction was a variable interest entity that Farmer Mac has not consolidated. Farmer Mac determined that it was not the primary beneficiary of the securitization trust because the subordinate class majority holder has the unilateral right to remove Farmer Mac as Master Servicer without cause.

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

Table 2.4

	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.

	Consolidation of Variable Interest Entities		
	As of December 31, 2020		
	Agricultural Finance	Treasury	Total
		(in thousands)	
On-Balance Sheet:			
Consolidated VIEs:			
Loans held for investment in consolidated trusts, at amortized cost	$ 1,287,045	$ —	$ 1,287,045
Debt securities of consolidated trusts held by third parties [(1)]	1,323,786	—	1,323,786
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Carrying value [(2)]	34,537	—	34,537
Maximum exposure to loss [(3)]	34,456	—	34,456
Investment securities:			
Carrying value [(4)]	—	1,918,672	1,918,672
Maximum exposure to loss [(3)] [(4)]	—	1,909,535	1,909,535
Off-Balance Sheet:			
Unconsolidated VIEs:			
Farmer Mac Guaranteed Securities:			
Maximum exposure to loss [(3)] [(5)]	378,610	—	378,610

(1) Includes borrower remittances of $36.7 million. The borrower remittances had not been passed through to third-party investors as of December 31, 2020.
(2) Includes $0.1 million of unamortized premiums and discounts and fair value adjustments related to USDA Securities.
(3) Farmer Mac uses unpaid principal balance and outstanding face amount of investment securities to represent maximum exposure to loss.
(4) Includes auction-rate certificates, asset-backed securities, and government-sponsored enterprise ("GSE")-guaranteed mortgage-backed securities.
(5) The amount under the Agricultural Finance line of business relates to unconsolidated trusts where Farmer Mac determined it was not the primary beneficiary due to shared power with an unrelated party.

(p) Custodial Deposit Liability

During 2021, Farmer Mac acquired the loan servicing rights for a sizeable portion of its Agricultural Finance loan and USDA Guaranteed Securities portfolios. In connection with this acquisition, Farmer Mac now collects cash from borrowers in advance of the borrower's contractual payment date. Farmer Mac's policy is to include the cash in the consolidated balance sheet as "Cash and cash equivalents" with an offsetting liability to "Accounts payable and accrued expenses" until the payment is contractually due, at which point the payment is applied to the loan. The net change in the amount of this custodial cash will also be disclosed in the consolidated statements of cash flows as "Custodial deposit liability."

(q) Business Segments

During fourth quarter 2021, Farmer Mac's Chief Operating Decision Maker ("CODM") – its President and Chief Executive Officer – began reviewing financial information of seven operating segments, which are reportable segments. Prior to fourth quarter 2021, the CODM reviewed the financial information of five reportable segments. The CODM reviews the financial information of the seven segments to make decisions about allocating resources and to assess the financial performance of those segments. Prior to fourth quarter 2021, the five segments were: Farm & Ranch, USDA Guarantees, Rural Utilities, Institutional Credit, and Corporate. Beginning in fourth quarter 2021, the seven reportable segments are: Farm & Ranch, Corporate AgFinance, Rural Utilities, Renewable Energy, Funding, Investments, and Corporate. The purpose of the new alignment of the company's segments is for the CODM to review and analyze financial performance according to the type of customer and market rather than according to the type of product offerings. Additionally, the financial information for the Funding and Investments segments allow the CODM to review the results of the company's Treasury activities. All operating expenses are managed at the enterprise level and are reported within the Corporate segment rather than allocated to any of the other segments.

The operations and financial results of the Farm & Ranch and Corporate AgFinance segments are within our Agricultural Finance line of business. Beginning in fourth quarter 2021, the Farm & Ranch segment includes the financial results of the USDA Securities portfolio and Farm & Ranch loans. Also beginning in the fourth quarter of 2021, the Corporate AgFinance segment includes loans and AgVantage securities to larger and more complex farming operations, agribusinesses focused on food and fiber processing, and other supply chain production.

The Rural Utilities and Renewable Energy segments are within our Rural Infrastructure Finance line of business. Beginning in fourth quarter 2021, the Rural Utilities segment includes loans to rural electric generation and transmission cooperatives, distribution cooperatives, and telecommunications providers, as well as AgVantage securities secured by those types of loans. The Renewable Energy segment includes loans to rural electric solar and wind energy projects.

Prior to fourth quarter 2021, the financial results of all of the company's AgVantage Securities portfolio were included within the Institutional Credit segment.

The Funding segment includes the financial results of the company's debt issuance, hedging, asset/liability management, and capital allocation strategies. The company allocates interest expense to each of the other segments (except Corporate) using a funds transfer pricing process. That process also allocates the benefits and costs from the company's funding and hedging strategies to the Funding segment.

The Investments segment includes the financial results of the company's investment portfolio, which is held for liquidity purposes. Interest expense is allocated to the Investments segment using the same funds transfer pricing process that is used to allocate interest expense to the other segments.

The Corporate segment includes all of the company's operating expenses, including compensation, general and administrative expenses, and regulatory fees. The Corporate segment also includes items of other income and preferred stock dividend expense.

Farmer Mac uses the non-GAAP financial measure "core earnings" to measure corporate economic performance and develop financial plans because, in management's view, core earnings is a useful alternative measure in understanding Farmer Mac's economic performance, transaction economics, and business trends. The main difference between core earnings and net income attributable to common stockholders is that core earnings excludes the effects of fair value fluctuations, which are not expected to have a cumulative net impact on financial condition or results of operations reported in accordance with generally accepted accounting principles if the related financial instruments are held to maturity, as is generally expected. Core earnings also differs from net income attributable to common stockholders by excluding specified infrequent or unusual transactions that Farmer Mac believes are not indicative of future operating results and that may not reflect the trends and economic financial performance of Farmer Mac's core business. This corporate economic performance measure may not be comparable to similarly labeled measures disclosed by other companies.

Farmer Mac uses net effective spread to measure the net spread Farmer Mac earns between its interest earning assets and the related net funding costs of these assets. Net effective spread differs from net interest income and net interest yield because it excludes: (1) the amortization of premiums and discounts on assets consolidated at fair value that are amortized as adjustments to yield in interest income over the contractual or estimated remaining lives of the underlying assets; (2) interest income and interest expense related to consolidated trusts with beneficial interests owned by third parties, which are presented on Farmer Mac's consolidated balance sheets as "Loans held for investment in consolidated trusts, at amortized cost"; and (3) the fair value changes of financial derivatives and the corresponding assets or liabilities designated in a fair value hedge accounting relationship.

(r) 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.

3. RELATED PARTY TRANSACTIONS

Farmer Mac considers an entity to be a related party if (1) the entity holds at least 5% of a class of Farmer Mac voting common stock or (2) the institution has an affiliation with a Farmer Mac director and conducts material business with Farmer Mac. As provided by Farmer Mac's statutory charter, only banks, insurance companies, and other financial institutions or similar entities may hold Farmer Mac's Class A voting common stock and only institutions of the Farm Credit System may hold Farmer Mac's Class B voting common stock. Farmer Mac's statutory charter also provides that Class A stockholders elect 5 members of Farmer Mac's 15-member board of directors and that Class B stockholders elect 5 members of the board of directors. Farmer Mac generally requires financial institutions to own a requisite amount of common stock, based on the size and type of institution, to participate in the Agricultural Finance line of business. As a result of these requirements, Farmer Mac conducts business with related parties in the normal course of Farmer Mac's business. All related party transactions were conducted with terms and conditions comparable to those available to any other participant in Farmer Mac's lines of business not related to Farmer Mac.

Zions Bancorporation, National Association:

Farmer Mac considers Zions Bancorporation, National Association and its affiliates ("Zions") a related party because Zions owns approximately 31.2% of Farmer Mac's Class A voting common stock. The following transactions occurred between Farmer Mac and Zions during 2021, 2020, and 2019:

Table 3.1

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Unpaid Principal Balance:			
Purchases:			
Loans	$ 214,319	$ 177,143	$ 129,040
USDA Securities	9,565	10,764	8,875
Sales of Farmer Mac Guaranteed Securities	—	41,247	163,134

The purchases of loans from Zions under the Agricultural Finance line of business represented approximately 8.0%, 7.1%, and 9.5% of Agricultural Finance mortgage loan purchases for the years ended December 31, 2021, 2020, and 2019, respectively, and 5.6%, 6.2% and 7.6%, respectively, of total Agricultural Finance mortgage loan business volume (excluding AgVantage and USDA Securities). The purchases of USDA Securities from Zions represented approximately 2.1%, 1.4%, and 2.1% of total purchases of USDA Securities for the years ended December 31, 2021, 2020, and 2019, respectively. Outstanding Agricultural Finance mortgage loans purchased, USDA Securities, and AgVantage securities purchased from Zions represented 3.4% and 4.1%, respectively, of Farmer Mac's outstanding business volume as of December 31, 2021 and 2020.

Zions retained servicing fees of $11.0 million, $11.8 million, and $12.2 million in 2021, 2020, and 2019, respectively, for its work as a Farmer Mac servicer.

National Rural Utilities Cooperative Financial Corporation:

Farmer Mac considers the National Rural Utilities Cooperative Financial Corporation ("CFC") a related party because CFC owns approximately 7.9% of Farmer Mac's Class A voting common stock and because a member of Farmer Mac's board of directors has an affiliation with CFC. The following transactions occurred between Farmer Mac and CFC during 2021, 2020, and 2019:

Table 3.2

Farmer Mac Loan Purchases and Guarantees

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Unpaid Principal Balance:			
Loans	$ 127,117	$ 272,943	$ 85,000
Unfunded Commitments	321	19,500	—
On-balance sheet AgVantage Securities	1,450,000	250,000	575,000
Total purchases and guarantees	$ 1,577,438	$ 542,443	$ 660,000

The transactions with CFC represented 36.9% of Farmer Mac's loan purchase volume under the Rural Infrastructure Finance line of business for 2021, compared to 36.7% of Rural Infrastructure Finance loan purchase volume for 2020 and 9.8% for 2019. These transactions represented 37.0%, 19.2%, and 25.5% of AgVantage securities volume for 2021, 2020, and 2019, respectively, and represented 18.4%, 9.5%, and 12.5% of total purchases, guarantees, LTSPCs, and unfunded commitments for 2021, 2020, and 2019, respectively. Of Farmer Mac's total outstanding business volume as of December 31, 2021 and 2020, Rural Utilities loans, loans under LTSPCs, and AgVantage securities issued by CFC represented 19.5% and 19.2%, respectively.

Farmer Mac had interest receivable of $7.8 million and $5.3 million as of December 31, 2021 and 2020, respectively, and earned interest income of $50.0 million, $63.1 million, and $97.3 million during 2021, 2020, and 2019, respectively, related to its AgVantage transactions with CFC.

As of both December 31, 2021 and 2020, Farmer Mac had $0.1 million of commitment fees receivable from CFC and earned commitment fees of $1.2 million, $1.3 million, and $1.7 million, respectively for 2021, 2020, and 2019.

CFC retained servicing fees of $3.3 million, $3.3 million and $3.2 million in 2021, 2020, and 2019, respectively, for its work as a Farmer Mac central servicer.

CoBank:

Farmer Mac considers CoBank a related party because CoBank owns approximately 32.6% of Farmer Mac's Class B voting common stock and because a member of Farmer Mac's board of directors had an affiliation with CoBank through the end of 2019.

Farmer Mac purchased $207.5 million, $416.8 million, and $776.4 million of loans and participations from CoBank, under the Rural Infrastructure Finance line of business in 2021, 2020, and 2019, respectively. The transactions with CoBank represented 60.2%, 56.0%, and 89.1% of Farmer Mac's loan purchase transactions under the Rural Infrastructure Finance line of business for 2021, 2020, and 2019, respectively.

During 2021, Farmer Mac entered into $72.0 million of unfunded commitments with CoBank, in which Farmer Mac earns a nominal unused commitment fee. Of Farmer Mac's total outstanding business volume as of December 31, 2021 and 2020, CoBank's Rural Infrastructure Finance loans and unfunded commitments represented 5.6% and 5.1%, respectively, of total outstanding volume.

CoBank retained servicing fees of $3.2 million, $2.3 million, and $1.2 million in 2021, 2020, and 2019, respectively, for its work as a Farmer Mac central servicer.

AgFirst Farm Credit Bank:

Farmer Mac considers AgFirst Farm Credit Bank ("AgFirst") a related party because AgFirst owns approximately 16.8% of Farmer Mac's Class B voting common stock.

AgFirst entered into $11.0 million, $32.5 million, and $26.7 million of Agricultural Finance LTSPC transactions in 2021, 2020, and 2019, respectively, and the aggregate balance of Agricultural Finance LTSPCs outstanding as of December 31, 2021 and 2020 was $363.9 million and $331.2 million, respectively. In each of 2021, 2020, and 2019, Farmer Mac received $1.2 million in commitment fees from AgFirst, and had $0.1 million of commitment fees receivable as of both December 31, 2021 and 2020.

AgFirst owns certain securities backed by rural housing loans. Farmer Mac guarantees the last ten percent of losses (based on the original principal balance at the time of pooling) from each loan in the pool backing those securities. As of December 31, 2021 and 2020, the outstanding balance of those securities owned by AgFirst was $4.0 million and $5.5 million, respectively. Farmer Mac received guarantee fees of $19,000, $25,000, and $29,000 in 2021, 2020, and 2019, respectively, on those securities.

Farm Credit Bank of Texas:

Farmer Mac considers Farm Credit Bank of Texas a related party because the bank owns approximately 7.7% of Farmer Mac's Class B voting common stock. Farmer Mac received from Farm Credit Bank of Texas commitment fees of $1.9 million, $1.2 million, and $1.1 million in 2021, 2020, and 2019, respectively. The aggregate amount of Agricultural Finance LTSPCs outstanding with Farm Credit Bank of Texas as of December 31, 2021 and 2020 was $625.6 million and $304.9 million, respectively. In each of 2021, 2020, and 2019, Farm Credit Bank of Texas retained $0.1 million in servicing fees for its work as a Farmer Mac central servicer.

Other Related Party Transactions:

Farmer Mac considers Bath State Bank and Farm Credit of Florida related parties because a member of Farmer Mac's board of directors is affiliated with those entities. Farmer Mac purchased $2.3 million, $9.2 million, and $4.0 million in USDA Securities from Bath State Bank in 2021, 2020, and 2019, respectively. Farmer Mac purchased $5.0 million in Agricultural Finance mortgage loans from Bath State Bank in 2021. Farmer Mac did not purchase any Agricultural Finance mortgage loans from Bath State Bank in 2020 or 2019.

Farmer Mac purchased $1.1 million and $0.2 million of Agricultural Finance mortgage loans from Farm Credit of Florida in 2021 and 2020, respectively. Farmer Mac did not purchase any loans from Farm Credit of Florida in 2019.

4. INVESTMENT SECURITIES

The following tables set forth information about Farmer Mac's available-for-sale and held-to-maturity investment securities as of December 31, 2021 and December 31, 2020:

Table 4.1

	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.

	As of December 31, 2020						
	Amount Outstanding	Unamortized Premium/ (Discount)	Amortized Cost[1]	Allowance for losses[2]	Unrealized Gains	Unrealized Losses	Fair Value
				(in thousands)			
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 19,700	$ —	$ 19,700	$ (36)	$ —	$ (493)	$ 19,171
Floating rate asset-backed securities	6,232	—	6,232	—	—	(1)	6,231
Floating rate Government/GSE guaranteed mortgage-backed securities	2,350,963	(44)	2,350,919	—	12,150	(3,043)	2,360,026
Fixed rate GSE guaranteed mortgage-backed securities	279	—	279	—	34	—	313
Fixed rate U.S. Treasuries	1,449,408	17,128	1,466,536	—	1,458	(43)	1,467,951
Total available-for-sale	3,826,582	17,084	3,843,666	(36)	13,642	(3,580)	3,853,692
Held-to-maturity:							
Floating rate Government/GSE guaranteed mortgage-backed securities[3]	45,032	—	45,032	—	1,201	—	46,233
Total held-to-maturity	$ 45,032	$ —	$ 45,032	$ —	$ 1,201	$ —	$ 46,233

(1) Amounts presented exclude $9.0 million of accrued interest receivable on investment securities as of December 31, 2020.
(2) Represents the amount of impairment that has resulted from credit-related factors, and therefore was recognized in the consolidated statement of operations as a provision for losses. Amount excludes unrealized losses relating to non-credit factors.
(3) The held-to-maturity investment securities had a weighted average yield of 1.5% as of December 31, 2020.

During the year ended December 31, 2021, Farmer Mac received proceeds of $257.5 million, from the sale of securities from its available-for-sale investment portfolio, resulting in gains of $0.3 million. Farmer Mac did not sell any securities from its available-for-sale investment portfolio during the year ended December 31, 2020. During the year ended December 31, 2019, Farmer Mac received proceeds of

$12.4 million from the sale of securities from its available-for-sale investment portfolio, resulting in gross realized losses of $0.2 million.

As of December 31, 2021 and December 31, 2020, unrealized losses on available-for-sale investment securities were as follows:

Table 4.2

	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

	As of December 31, 2020			
	Available-for-Sale Securities			
	Unrealized loss position for less than 12 months		Unrealized loss position for more than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(dollars in thousands)			
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 19,171	$ (493)
Floating rate asset-backed securities	—	—	6,231	(1)
Floating rate Government/GSE guaranteed mortgage-backed securities	172,842	(593)	324,423	(2,450)
Fixed rate U.S. Treasuries	364,320	(43)	—	—
Total	$ 537,162	$ (636)	$ 349,825	$ (2,944)
Number of securities in loss position		27		62

The unrealized losses presented above are principally due to a general widening of market spreads and changes in the levels of interest rates from the dates of acquisition to December 31, 2021 and December 31, 2020, 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 December 31, 2021 and December 31, 2020, 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 December 31, 2021 that is, on average, approximately 99.0% 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 December 31, 2021 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 4.3

	As of December 31, 2021		
	Available-for-Sale Securities		
	Amortized Cost	Fair Value	Weighted-Average Yield
		(dollars in thousands)	
Due within one year	$ 646,946	$ 646,518	1.23%
Due after one year through five years	812,878	810,767	0.42%
Due after five years through ten years	1,712,906	1,710,515	0.88%
Due after ten years	661,984	668,591	0.64%
Total	$ 3,834,714	$ 3,836,391	0.80%

5. 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 December 31, 2021 and December 31, 2020:

Table 5.1

	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 December 31, 2020						
	Unpaid Principal Balance	Unamortized Premium/ (Discount)	Amortized Cost[(1)]	Allowance for losses[(2)]	Unrealized Gains	Unrealized Losses	Fair Value
				(in thousands)			
Held-to-maturity:							
AgVantage	$ 1,141,430	$ (55)	$ 1,141,375	$ (120)	$ 23,986	$ (61)	$ 1,165,180
Farmer Mac Guaranteed USDA Securities	34,456	81	34,537	—	1,273	—	35,810
Total Farmer Mac Guaranteed Securities	1,175,886	26	1,175,912	(120)	25,259	(61)	1,200,990
USDA Securities	2,446,550	27,076	2,473,626	—	157,748	(560)	2,630,814
Total held-to-maturity	$ 3,622,436	$ 27,102	$ 3,649,538	$ (120)	$ 183,007	$ (621)	$ 3,831,804
Available-for-sale:							
AgVantage	$ 6,593,518	$ 1,474	$ 6,594,992	$ (310)	$ 368,257	$ (15,238)	$ 6,947,701
Trading:							
USDA Securities[(3)]	$ 6,413	$ 198	$ 6,611	$ —	$ 84	$ —	$ 6,695

(1) Amounts presented exclude $32.3 million, $44.7 million, and $0.2 million of accrued interest receivable on available-for-sale, held-to-maturity, and trading securities, respectively, as of December 31, 2020.

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

(3) The trading USDA securities had a weighted average yield of 5.05% as of December 31, 2020.

As of December 31, 2021 and December 31, 2020, unrealized losses on held-to-maturity and available-for-sale on-balance sheet Farmer Mac Guaranteed Securities and USDA Securities were as follows:

Table 5.2

	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)

	As of December 31, 2020							
	Held-to-Maturity and Available-for-Sale Securities							
	Unrealized loss position for less than 12 months				Unrealized loss position for more than 12 months			
	Fair Value		Unrealized Loss		Fair Value		Unrealized Loss	
	(in thousands)							
Held-to-maturity:								
AgVantage	$	49,939	$	(61)	$	—	$	—
USDA Securities		—		—		21,061		(560)
Total held-to-maturity	$	49,939	$	(61)	$	21,061	$	(560)
Available-for-sale:								
AgVantage	$	133,703	$	(231)	$	981,757	$	(15,007)

The unrealized losses presented above are principally due to changes in interest rates from the date of acquisition to December 31, 2021 and December 31, 2020, as applicable. The unrealized losses on the held-to-maturity USDA Securities as of both December 31, 2021 and December 31, 2020 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 13 and 11 available-for-sale securities as of December 31, 2021 and December 31, 2020, respectively. There were 10 and 2 held-to-maturity AgVantage securities with an unrealized loss as of December 31, 2021 and December 31, 2020, respectively. As of December 31, 2021 and December 31, 2020, 2 and 7 available-for-sale AgVantage securities, respectively, had been in a loss position for more than 12 months.

During the three years ended December 31, 2021, 2020, and 2019, Farmer Mac had no sales of Farmer Mac Guaranteed Securities or USDA Securities and, therefore, Farmer Mac realized no gains or losses.

The amortized cost, fair value, and weighted-average yield of available-for-sale and held-to-maturity Farmer Mac Guaranteed Securities and USDA Securities by remaining contractual maturity as of December 31, 2021 are set forth below. The balances presented are based on their final maturities, although the actual maturities may differ due to prepayments of the underlying assets.

Table 5.3

	As of December 31, 2021		
	Available-for-Sale Securities		
	Amortized Cost[(1)]	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$ 1,401,396	$ 1,408,170	1.80 %
Due after one year through five years	2,142,369	2,194,055	2.52 %
Due after five years through ten years	1,008,986	1,034,586	2.21 %
Due after ten years	1,583,056	1,691,748	2.46 %
Total	$ 6,135,807	$ 6,328,559	2.28 %

(1) Amounts presented exclude $29.8 million of accrued interest receivable.

	As of December 31, 2021		
	Held-to-Maturity Securities		
	Amortized Cost[(1)]	Fair Value	Weighted-Average Yield
	(dollars in thousands)		
Due within one year	$ 1,146,637	$ 1,146,747	0.65 %
Due after one year through five years	904,570	902,695	2.09 %
Due after five years through ten years	253,388	262,906	2.76 %
Due after ten years	2,165,107	2,251,458	3.15 %
Total	$ 4,469,702	$ 4,563,806	2.26 %

(1) Amounts presented exclude $42.1 million of accrued interest receivable.

6. 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. Certain financial derivatives are designated as fair value hedges of fixed rate assets, classified as available-for-sale, to protect against fair value changes in the assets related to changes in a benchmark interest rate (e.g., LIBOR or SOFR). Certain other financial derivatives are designated as cash flow hedges to mitigate the volatility of future interest rate payments on floating rate debt. Certain financial derivatives are not designated in hedge accounting relationships.

Farmer Mac manages the interest rate risk related to loans it has committed to acquire, but has not yet permanently funded, primarily through the use of forward sale contracts on the debt of other GSEs and futures contracts involving U.S. Treasury securities. Farmer Mac uses forward sale contracts on GSE securities to reduce its interest rate exposure to changes in both U.S. Treasury rates and spreads on Farmer Mac debt. Farmer Mac aims to achieve a duration-matched hedge ratio between the hedged item and the hedge instrument. Gains or losses generated by these hedge transactions are expected to offset changes in funding costs. All financial derivatives are recorded on the balance sheet at fair value as a freestanding asset or liability.

The following tables summarize information related to Farmer Mac's financial derivatives on a gross basis without giving consideration to master netting arrangements as of December 31, 2021 and December 31, 2020:

Table 6.1

	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	$ 11,554	$ (583)	2.06%	0.13%		11.64
Receive fixed non-callable	5,884,529	15	(8,383)	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	6,905	(2,763)	1.93%	0.49%		5.72
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	229,062	—	(4,641)	3.22%	0.16%		4.95
Receive fixed non-callable	1,377,250	—	—	0.13%	0.43%		0.97
Basis swaps	1,608,911	489	(280)	0.17%	0.20%		3.31
Treasury futures	67,600	73	—			130.58	
Credit valuation adjustment		—	14				
Total financial derivatives	$ 17,547,367	$ 19,139	$ (34,248)				
Collateral (held)/pledged		—	194,519				
Net amount		$ 19,139	$ 160,271				

	As of December 31, 2020						
		Fair Value					
	Notional Amount	Asset	(Liability)	Weighted-Average Pay Rate	Weighted-Average Receive Rate	Weighted-Average Forward Price	Weighted-Average Remaining Term (in years)
	(dollars in thousands)						
Fair value hedges:							
Interest rate swaps:							
Pay fixed non-callable	$ 5,463,303	$ 10,157	$ (2,585)	2.26%	0.21%		11.95
Receive fixed non-callable	2,611,029	2	(8,755)	0.32%	1.61%		2.10
Receive fixed callable	343,500	3,108	(4)	0.16%	1.78%		3.16
Cash flow hedges:							
Interest rate swaps:							
Pay fixed non-callable	472,000	2,584	(8,771)	2.04%	0.57%		6.04
No hedge designation:							
Interest rate swaps:							
Pay fixed non-callable	339,090	—	(9,675)	2.38%	0.19%		4.23
Receive fixed non-callable	2,359,220	—	—	0.16%	0.87%		1.07
Receive fixed callable	200,000	1	(12)	0.13%	0.15%		0.72
Basis swaps	3,628,911	1,617	(43)	0.18%	0.23%		2.03
Treasury futures	30,500	—	(82)			137.81	
Credit valuation adjustment		(1)	35				
Total financial derivatives	$ 15,447,553	$ 17,468	$ (29,892)				
Collateral (held)/pledged		(1,345)	212,263				
Net amount		$ 16,123	$ 182,371				

As of December 31, 2021, Farmer Mac expects to reclassify $4.6 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 December 31, 2021. During the years ended December 31, 2021 and 2020, 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 years ended December 31, 2021, 2020, and 2019:

Table 6.2

	For the Year Ended December 31, 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	$ 18,660	$ 163,547	$ 242,582	$ (204,014)	$ (3,348)	$ 217,427
Income/(expense) related to interest settlements on fair value hedging relationships:						
Recognized on derivatives	(1,002)	(85,302)	(27,167)	42,591	—	(70,880)
Recognized on hedged items	1,792	119,896	46,842	(51,484)	—	117,046
Discount amortization recognized on hedged items	—	—	—	(1,118)	—	(1,118)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 790	$ 34,594	$ 19,675	$ (10,011)	$ —	$ 45,048
Gains/(losses) on fair value hedging relationships:						
Recognized on derivatives	$ 1,688	$ 177,077	$ 97,459	$ (98,332)	$ —	$ 177,892
Recognized on hedged items	(1,218)	(176,304)	(97,502)	95,617	—	(179,407)
Gains/(losses) on fair value hedging relationships	$ 470	$ 773	$ (43)	$ (2,715)	$ —	$ (1,515)
Expense related to interest settlements on cash flow hedging relationships:						
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ —	$ (7,399)	$ —	$ (7,399)
Recognized on hedged items	—	—	—	(2,657)	—	(2,657)
Discount amortization recognized on hedged items	—	—	—	(37)	—	(37)
Expense recognized on cash flow hedges	$ —	$ —	$ —	$ (10,093)	$ —	$ (10,093)
Losses on financial derivatives not designated in hedging relationships:						
Losses on interest rate swaps	$ —	$ —	$ —	$ —	$ (5,816)	$ (5,816)
Interest expense on interest rate swaps	—	—	—	—	3,259	3,259
Treasury futures	—	—	—	—	(791)	(791)
Losses on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ —	$ (3,348)	$ (3,348)

	For The Year Ended December 31, 2020				
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives				
	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Losses on financial derivatives	Total
			(in thousands)		
Total amounts presented in the consolidated statement of operations:	$ 227,691	$ 233,699	$ (312,946)	$ (246)	$ 148,198
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	(60,056)	(19,135)	26,386	—	(52,805)
Recognized on hedged items	126,170	40,793	(51,230)	—	115,733
Discount amortization recognized on hedged items	—	—	(745)	—	(745)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 66,114	$ 21,658	$ (25,589)	$ —	$ 62,183
(Losses)/gains on fair value hedging relationships:					
Recognized on derivatives	$ (206,281)	$ (76,565)	$ 43,332	$ —	$ (239,514)
Recognized on hedged items	202,624	73,426	(45,720)	—	230,330
(Losses)/gains on fair value hedging relationships	$ (3,657)	$ (3,139)	$ (2,388)	$ —	$ (9,184)
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ (5,570)	$ —	$ (5,570)
Recognized on hedged items	—	—	(4,553)	—	(4,553)
Discount amortization recognized on hedged items	—	—	(13)	—	(13)
Expense recognized on cash flow hedges	$ —	$ —	$ (10,136)	$ —	$ (10,136)
(Losses)/gains on financial derivatives not designated in hedge relationships:					
Losses on interest rate swaps	$ —	$ —	$ —	$ (4,204)	$ (4,204)
Interest expense on interest rate swaps	—	—	—	5,808	5,808
Treasury futures	—	—	—	(1,850)	(1,850)
(Losses)/gains on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ (246)	$ (246)

	For The Year Ended December 31, 2019				
	Net Income/(Expense) Recognized in Consolidated Statement of Operations on Derivatives				
	Net Interest Income			Non-Interest Income	
	Interest Income Farmer Mac Guaranteed Securities and USDA Securities	Interest Income Loans	Total Interest Expense	Gains/(losses) on financial derivatives	Total
			(in thousands)		
Total amounts presented in the consolidated statement of operations	$ 333,896	$ 229,675	$ (471,958)	$ 5,282	$ 96,895
Income/(expense) related to interest settlements on fair value hedging relationships:					
Recognized on derivatives	(2,177)	(2,053)	(6,227)	—	(10,457)
Recognized on hedged items	118,609	26,352	(45,309)	—	99,652
Discount amortization recognized on hedged items	—	—	(631)	—	(631)
Income/(expense) related to interest settlements on fair value hedging relationships	$ 116,432	$ 24,299	$ (52,167)	$ —	$ 88,564
(Losses)/gains on fair value hedging relationships:					
Recognized on derivatives	$ (184,478)	$ (50,141)	$ 18,401	$ —	$ (216,218)
Recognized on hedged items	181,144	43,194	(16,027)	—	208,311
(Losses)/gains on fair value hedging relationships	$ (3,334)	$ (6,947)	$ 2,374	$ —	$ (7,907)
Expense related to interest settlements on cash flow hedging relationships:					
Interest settlements reclassified from AOCI into net income on derivatives	$ —	$ —	$ 1,166	$ —	$ 1,166
Recognized on hedged items	—	—	(10,569)	—	(10,569)
Discount amortization recognized on hedged items	—	—	(4)	—	(4)
Expense recognized on cash flow hedges	$ —	$ —	$ (9,407)	$ —	$ (9,407)
Gains on financial derivatives not designated in hedging relationships:					
Gains on interest rate swaps	$ —	$ —	$ —	$ 10,321	$ 10,321
Interest expense on interest rate swaps	—	—	—	(4,213)	(4,213)
Treasury futures	—	—	—	(826)	(826)
Gains on financial derivatives not designated in hedge relationships	$ —	$ —	$ —	$ 5,282	$ 5,282

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 December 31, 2021 and December 31, 2020:

Table 6.3

	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)	
	December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
	(in thousands)			
Investment securities, Available-for-Sale, at fair value	$ 458,653	$ —	$ (1,218)	$ —
Farmer Mac Guaranteed Securities, Available-for-Sale, at fair value[(1)]	4,276,002	4,244,027	206,520	382,825
Loans held for investment, at amortized cost[(2)]	1,668,142	1,692,609	13,832	111,333
Notes Payable[(3)]	(7,083,535)	(3,006,140)	42,377	(53,240)

(1) Includes $1.3 million and $1.6 million of hedging adjustments on discontinued hedging relationships as of December 31, 2021 and December 31, 2020, respectively.
(2) Includes $1.2 million and $1.4 million of hedging adjustments on a discontinued hedging relationship as of December 31, 2021 and December 31, 2020, respectively.
(3) Carrying amount represents amortized cost.

The following table shows Farmer Mac's credit exposure to interest rate swap counterparties as of December 31, 2021 and December 31, 2020:

Table 6.4

	December 31, 2021		
	Gross Amount Recognized[(1)]	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
	(in thousands)		
Assets:			
Derivatives			
Interest rate swap	$ 91,130	$ 91,130	$ —
Liabilities:			
Derivatives			
Interest rate swap	$ 404,063	$ 386,249	$ 17,814

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

	December 31, 2020		
	Gross Amount Recognized[(1)]	Counterparty Netting	Net Amount Presented in the Consolidated Balance Sheet
	(in thousands)		
Assets:			
Derivatives			
Interest rate swaps	$ 112,287	$ 111,761	$ 526
Liabilities:			
Derivatives			
Interest rate swaps	$ 620,236	$ 595,867	$ 24,369

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

As of December 31, 2021, Farmer Mac held no cash or investment securities as collateral for its derivatives in net asset positions, compared to $1.3 million of cash and no investment securities as collateral for its derivatives in net asset positions as of December 31, 2020.

Farmer Mac posted $16.6 million cash and $177.9 million of investment securities as of December 31, 2021 and posted $11.2 million cash and $201.1 million investment securities as of December 31, 2020. 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 December 31, 2021 or December 31, 2020, it could have been required to settle its obligations under the agreements, but would not have been required to post additional collateral. As of December 31, 2021 and December 31, 2020, 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 $17.5 billion notional amount of interest rate swaps outstanding as of December 31, 2021, $14.9 billion were cleared through the swap clearinghouse, the Chicago Mercantile Exchange ("CME"). Of Farmer Mac's $15.4 billion notional amount of interest rate swaps outstanding as of December 31, 2020, $12.8 billion were cleared through the CME. During 2021 and throughout 2020, 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.

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 December 31, 2021 and December 31, 2020:

Table 7.1

	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	(42,377)			
Total	$ 22,716,156			

	December 31, 2020			
	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	$ 1,797,175	0.11 %	$ 2,343,702	0.63 %
Medium-term notes	2,645,146	0.19 %	1,593,253	0.60 %
Current portion of medium-term notes	6,304,061	0.90 %		
Total due within one year	$ 10,746,382	0.59 %		
Due after one year:				
Medium-term notes due in:				
Two years	$ 3,004,203	1.00 %		
Three years	2,809,551	1.24 %		
Four years	927,119	1.67 %		
Five years	1,342,250	1.03 %		
Thereafter	2,966,172	1.92 %		
Total due after one year	$ 11,049,295	1.37 %		
Total principal net of discounts	$ 21,795,677	0.98 %		
Hedging adjustments	53,240			
Total	$ 21,848,917			

The maximum amount of Farmer Mac's discount notes outstanding at any month end during each of the years ended December 31, 2021 and 2020 was $2.4 billion and $2.6 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 December 31, 2021:

Table 7.2

Debt Callable in 2022 as of December 31, 2021, by Maturity

	Amount	Weighted-Average Rate
	(dollars in thousands)	
Maturity:		
2023	$ 243,795	0.42 %
2024	318,346	0.40 %
2025	372,048	0.92 %
2026	1,060,594	1.08 %
Thereafter	1,368,758	1.67 %
Total	$ 3,363,541	1.19 %

The following schedule summarizes the earliest interest rate reset date, or debt maturities, of total borrowings outstanding as of December 31, 2021, 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	$ 8,795,560	0.43 %
2023	3,588,630	0.91 %
2024	2,489,936	0.89 %
2025	1,859,428	0.92 %
2026	2,632,015	1.10 %
Thereafter	3,392,964	1.96 %
Total principal net of discounts	$ 22,758,533	0.90 %

During the years ended December 31, 2021 and 2020, Farmer Mac called $2.0 billion and $3.1 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 December 31, 2021, Farmer Mac had not used this borrowing authority.

Gains on Repurchase of Outstanding Debt

During the year ended December 31, 2021, Farmer Mac repurchased $23.0 million of outstanding debt at a gain of $14,000; no outstanding debt repurchases were made in the years ended December 31, 2020 and 2019.

8. 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 December 31, 2021 and December 31, 2020, Farmer Mac had no loans held for sale. Farmer Mac did not record any lower of cost or fair value adjustments during the year ended December 31, 2021 related to its loans held for sale.

The following table includes loans held for investment and displays the composition of the loan balances as of December 31, 2021 and December 31, 2020:

Table 8.1

	As of December 31, 2021			As of December 31, 2020		
	Unsecuritized	In Consolidated Trusts	Total	Unsecuritized	In Consolidated Trusts	Total
	(in thousands)					
Agricultural Finance mortgage loans	$ 5,898,370	$ 948,623	$ 6,846,993	$ 4,889,393	$ 1,287,045	$ 6,176,438
Rural Infrastructure Finance loans	2,389,136	—	2,389,136	2,260,412	—	2,260,412
Total unpaid principal balance(1)	8,287,506	948,623	9,236,129	7,149,805	1,287,045	8,436,850
Unamortized premiums, discounts, fair value hedge basis adjustment, and other cost basis adjustments	26,590	—	26,590	112,128	—	112,128
Total loans	8,314,096	948,623	9,262,719	7,261,933	1,287,045	8,548,978
Allowance for losses	(13,477)	(564)	(14,041)	(12,943)	(889)	(13,832)
Total loans, net of allowance	$ 8,300,619	$ 948,059	$ 9,248,678	$ 7,248,990	$ 1,286,156	$ 8,535,146

(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 December 31, 2021 and December 31, 2020:

Table 8.2

	December 31, 2021	December 31, 2020
	Allowance for Losses	Allowance for Losses
	(in thousands)	
Loans:		
Agricultural Finance mortgage loans	$ 3,442	$ 3,745
Rural Infrastructure Finance loans	10,599	10,087
Total	$ 14,041	$ 13,832

The following is a summary of the changes in the allowance for losses for each year in the three-year period ended December 31, 2021:

Table 8.3

	Agricultural Finance mortgage loans	Rural Infrastructure Finance loans
	Allowance for Losses	Allowance for Losses
	(in thousands)	
Balance as of December 31, 2018[(1)]	$ 7,017	$ —
Provision for losses	3,504	—
Charge-offs	(67)	—
Balance as of December 31, 2019[(1)]	$ 10,454	$ —
Cumulative effect adjustment from adoption of current expected credit loss standard	(3,909)	5,378
Adjusted Beginning Balance	$ 6,545	$ 5,378
Provision for losses	2,959	4,709
Charge-offs	(5,759)	—
Balance as of December 31, 2020[(2)(3)(4)]	$ 3,745	$ 10,087
(Release of)/provision for losses	(1,357)	512
Recovery	1,054	—
Charge-offs	—	—
Balance as of December 31, 2021[(3)(4)]	$ 3,442	$ 10,599

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

(2) Allowance for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," effective January 1, 2020.

(3) As of both December 31, 2021 and 2020, allowance for losses for Agricultural Finance mortgage loans includes no allowance, for collateral dependent assets secured by agricultural real estate.

(4) As of both December 31, 2021 and 2020, allowance for losses for Rural Infrastructure Finance loans includes no allowance for collateral dependent assets.

The provision to the allowance for Rural Infrastructure Finance loan losses of $0.5 million recorded during the year ended 2021 was primarily attributable to the impact of the Texas Arctic Freeze, partially offset by the impact of improving economic factor forecasts. The $1.4 million release from the allowance for the Agricultural Finance mortgage loan portfolio during the year ended 2021 was primarily attributable to a recovery on the payoff of the agricultural storage and processing loan secured by a specialized poultry facility that had been partially charged off in 2020 and improving economic factor forecasts.

The provision to the allowance for Rural Infrastructure Finance loan losses of $4.7 million recorded during the year ended December 31, 2020 was primarily attributable to the impact of net new loan volume in the portfolio and the impact of economic factor forecasts, especially continued expected higher unemployment, as a result of the COVID-19 pandemic and the resulting economic volatility. The provision to the allowance for Agricultural Finance mortgage loans of $3.0 million recorded during the year ended December 31, 2020 was primarily related to an agricultural storage and processing loan secured by a specialized poultry facility that Farmer Mac has deemed to be a CDA. The provision was more than offset by charge-offs from the allowance of $5.8 million, primarily related to the specialized poultry loan because a portion of the loan was deemed to be uncollectible.

The provision to the allowance for loan losses recorded during 2019 was primarily attributable to a specific reserve on a single specialized poultry loan, a decrease in overall credit quality, and net portfolio growth. The allowance for losses in the Agricultural Finance mortgage loan portfolio, as a percentage of outstanding loan volume, increased slightly from the previous year. The total provision for losses increased by $3.2 million, during 2019 as compared to 2018, primarily due to the specific reserve on the agricultural storage and processing loan secured by a specialized poultry facility loan mentioned above and a decrease in overall credit quality combined with net portfolio growth.

The following table presents the unpaid principal balances by delinquency status of Farmer Mac's loans and non-performing assets as of December 31, 2021 and December 31, 2020:

Table 8.4

	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.

	As of December 31, 2020						
	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	$ 6,055,154	$ 4,582	$ 632	$ 1,072	$ 6,286	$ 114,998	$ 6,176,438
Rural Infrastructure Finance loans	2,260,412	—	—	—	—	—	2,260,412
Total	$ 8,315,566	$ 4,582	$ 632	$ 1,072	$ 6,286	$ 114,998	$ 8,436,850

(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 $44.2 million of nonaccrual loans for which there was no associated allowance. During the year ended December 31, 2020, Farmer Mac received $4.4 million in interest on nonaccrual loans.

Credit Quality Indicators

The following tables present credit quality indicators related to Farm & Ranch loans and Rural Infrastructure loans held as of December 31, 2021 and December 31, 2020, by year of origination:

Table 8.5

	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 Year Ended:								
Current period charge-offs	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Current period recoveries	—	—	—	—	(1,054)	—	—	(1,054)
Current period Agricultural Finance recoveries	$ —	$ —	$ —	$ —	$ (1,054)	$ —	$ —	$ (1,054)

(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 Year Ended								
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, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance mortgage loans [1]:								
Internally Assigned Risk Rating:								
Acceptable	$1,947,618	$ 774,315	$ 484,345	$ 500,768	$ 465,277	$1,068,693	$ 535,742	$ 5,776,758
Special mention[2]	70,171	79,744	18,317	8,530	13,111	21,328	7,656	218,857
Substandard[3]	3,400	5,821	21,879	52,709	37,173	50,582	9,259	180,823
Total	$2,021,189	$ 859,880	$ 524,541	$ 562,007	$ 515,561	$1,140,603	$ 552,657	$ 6,176,438
For the Year Ended:								
Current period charge-offs	$ —	$ —	$ —	$ 5,365	$ —	$ 394	$ —	$ 5,759
Current period recoveries	—	—	—	—	—	—	—	—
Current period Agricultural Finance net charge-offs	$ —	$ —	$ —	$ 5,365	$ —	$ 394	$ —	$ 5,759

(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, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance loans[1]:								
Internally Assigned Risk Rating:								
Acceptable	$ 667,489	$ 809,921	$ 8,260	$ 89,842	$ 31,275	$ 641,145	$ 12,480	$ 2,260,412
Special mention[2]	—	—	—	—	—	—	—	—
Substandard[3]	—	—	—	—	—	—	—	—
Total	$ 667,489	$ 809,921	$ 8,260	$ 89,842	$ 31,275	$ 641,145	$ 12,480	$ 2,260,412
For the Year Ended:								
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.

9. EQUITY

Common Stock

Farmer Mac has three classes of common stock outstanding:

- Class A voting common stock, which may be held only by banks, insurance companies, and other financial institutions or similar entities that are not institutions of the Farm Credit System. By federal statute, no holder of Class A voting common stock may directly or indirectly be a beneficial owner of more than 33% of the outstanding shares of Class A voting common stock.
- Class B voting common stock, which may be held only by institutions of the Farm Credit System. There are no restrictions on the maximum holdings of Class B voting common stock.
- Class C non-voting common stock, which has no ownership restrictions.

During 2021, 2020, and 2019, Farmer Mac paid a quarterly dividend of $0.88, $0.80, and $0.70 per share on all classes of its common stock. Farmer Mac's ability to declare and pay dividends on its common stock could be restricted if it fails to comply with applicable capital requirements.

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 2021. As of December 31, 2021, 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.

Preferred Stock

In May 2021, Farmer Mac issued 5.0 million shares of 4.875% non-cumulative perpetual Series G preferred stock, par value $25.00 per share. Farmer Mac incurred direct costs of $3.7 million related to the issuance of the Series G preferred stock. The dividend rate on the Series G preferred stock will remain at a non-cumulative, fixed rate of 4.875% per year, when, as, and if a dividend is declared by the Board of Directors of Farmer Mac, for so long as the Series G preferred stock remains outstanding. The Series G preferred stock has no maturity date, but Farmer Mac has the option to redeem the preferred stock at any time on any dividend payment date on and after July 17, 2026.

The following table presents the Series C Preferred Stock, the Series D Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, and the Series G Preferred Stock (collectively referred to as the "Outstanding Preferred Stock") as of December 31, 2021:

Table 9.1

Name	Issuance Date	Issuance Cost	Shares Issued	Annual Dividend Rate[3]	Liquidation Value	Redemption Date[4]
Series C[1]	June 20, 2014	$ 1,618,583	3,000,000	6.000 %	$ 25.00	July 18, 2024
Series D[2]	May 13, 2019	$ 3,340,456	4,000,000	5.700 %	$ 25.00	July 17, 2024
Series E	May 20, 2020	$ 2,496,750	3,180,000	5.750 %	$ 25.00	July 17, 2025
Series F	August 20, 2020	$ 3,839,902	4,800,000	5.250 %	$ 25.00	October 17, 2025
Series G	May 27, 2021	$ 3,661,677	5,000,000	4.875 %	$ 25.00	July 17, 2026

(1) The Series C Preferred Stock pays an annual dividend rate of 6.00% from the date of issuance to and including the quarterly payment date occurring on July 17, 2024, and thereafter, at a floating rate equal to three-month LIBOR plus 3.26%.
(2) Farmer Mac has the option to redeem the preferred stock on any quarterly dividend payment date on and after July 17, 2024.
(3) Dividends on all series of Outstanding Preferred Stock are non-cumulative, which means that if Farmer Mac's board of directors has not declared a dividend before the applicable dividend payment date for any dividend period, such dividend will not be paid or cumulate, and Farmer Mac will have no obligation to pay dividends for such dividend period, whether or not dividends on any series of Outstanding Preferred Stock are declared for any future dividend period.
(4) Farmer Mac has the right but not the obligation to redeem.

The following tables present the quarterly dividends paid by Farmer Mac on its outstanding preferred during 2021, 2020, and 2019:

Table 9.2

	2021			
	1st Quarter	2nd Quarter[(1)]	3rd Quarter	4th Quarter
6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C	$ 0.3750	$ 0.3750	$ 0.3750	$ 0.3750
5.700% Non-Cumulative Preferred Stock, Series D	0.3563	0.3563	0.3563	0.3563
5.750% Non-Cumulative Preferred Stock, Series E	0.3594	0.3594	0.3594	0.3594
5.250% Non-Cumulative Preferred Stock, Series F	0.3281	0.3281	0.3281	0.3281
4.875% Non-Cumulative Preferred Stock, Series G	—	0.1693	0.3047	0.3047

(1) For second quarter 2021, dividend payment includes $0.1693 per share on the Series G Preferred Stock for the period from but not including May 27, 2021 (issuance date) to and including July 17, 2021.

	2020			
	1st Quarter	2nd Quarter[(1)]	3rd Quarter[(2)(3)]	4th Quarter
5.875% Non-Cumulative Preferred Stock, Series A	$ 0.3672	$ 0.3672	$ 0.2530	$ —
6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C	0.3750	0.3750	0.3750	0.3750
5.700% Non-Cumulative Preferred Stock, Series D	0.3563	0.3563	0.3563	0.3563
5.750% Non-Cumulative Preferred Stock, Series E	—	0.2276	0.3594	0.3594
5.250% Non-Cumulative Preferred Stock, Series F	—	—	0.2078	0.3281

(1) For second quarter 2020, dividend payment includes $0.2276 per share on the Series E Preferred Stock for the period from but not including May 20, 2020 (issuance date) to and including July 17, 2020.

(2) For third quarter 2020 dividend payment includes $0.2530 per share on the Series A Preferred Stock for the period from but not including July 17, 2020 to and including the September 19, 2020 redemption date.

(3) For third quarter 2020, dividend payment includes $0.2078 per share on the Series F Preferred Stock for the period from but not including August 20, 2020 (issuance date) to and including October 17, 2020.

	2019			
	1st Quarter	2nd Quarter[(1)(2)]	3rd Quarter	4th Quarter
5.875% Non-Cumulative Preferred Stock, Series A	$ 0.3672	$ 0.3672	$ 0.3672	$ 0.3672
6.875% Non-Cumulative Preferred Stock, Series B	0.4297	0.2626	—	—
6.000% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series C	0.3750	0.3750	0.3750	0.3750
5.700% Non-Cumulative Preferred Stock, Series D	—	0.2533	0.3563	0.3563

(1) For second quarter 2019, dividend payment includes $0.2626 per share on the Series B Preferred Stock for the period from but not including April 17, 2019 to and including the June 12, 2019 redemption date.

(2) For second quarter 2019, dividend payment includes $0.2533 per share on the Series D Preferred Stock for the period from but not including May 13, 2019 (issuance date) to and including July 17, 2019.

Equity-Based Incentive Compensation Plans

Farmer Mac's Amended and Restated 2008 Omnibus Incentive Compensation Plan authorizes the grant of restricted stock and SARs, among other alternative forms of equity-based compensation, to Farmer Mac's directors, officers, and employees. SARs awarded to officers and employees vest annually in thirds. Farmer Mac has not granted SARs to directors since 2008. If not exercised or cancelled earlier due to the termination of employment, SARs granted to officers or employees expire after 10 years from the grant date. For all SARs granted, the exercise price is equal to the closing price of Farmer Mac's Class C non-voting common stock on the date of grant. SARs granted during 2021 have an exercise price of $88.68 per share, SARs granted during 2020 have an exercise price ranging from $72.26 to $75.16 per share, and SARs granted during 2019 have an exercise price of $82.76 per share. During 2021, 2020, and 2019, restricted stock awards were granted to employees, officers, and directors with vesting periods of one to three years.

The following tables summarize SARs and non-vested restricted stock activity for the years ended December 31, 2021, 2020, and 2019:

Table 9.3

	For the Years Ended December 31,					
	2021		2020		2019	
	SARs	Weighted-Average Exercise Price	SARs	Weighted-Average Exercise Price	SARs	Weighted-Average Exercise Price
Outstanding, beginning of year	116,417	$ 57.16	98,836	$ 46.47	124,960	$ 38.38
Granted	28,575	88.68	34,881	74.80	24,582	82.76
Exercised	(14,583)	38.99	(15,912)	26.93	(40,851)	35.61
Canceled	—	—	(1,388)	86.15	(9,855)	79.45
Outstanding, end of year	130,409	66.10	116,417	57.16	98,836	46.47
Exercisable at end of year	72,106	52.85	66,602	42.08	72,696	34.07

	For the Years Ended December 31,					
	2021		2020		2019	
	Non-vested Restricted Stock	Weighted-Average Grant Date Fair Value	Non-vested Restricted Stock	Weighted-Average Grant Date Fair Value	Non-vested Restricted Stock	Weighted-Average Grant Date Fair Value
Outstanding, beginning of year	83,956	$ 71.76	62,597	$ 75.81	80,153	$ 60.98
Granted	53,358	88.92	53,471	66.02	41,735	80.51
Canceled	(1,184)	79.82	(4,042)	69.66	(17,054)	74.97
Vested and issued	(32,239)	77.98	(28,070)	70.13	(42,237)	52.65
Outstanding, end of year	103,891	78.55	83,956	71.76	62,597	75.81

The cancellations of SARs and non-vested restricted stock during 2021, 2020, and 2019 were due to unvested awards terminating in accordance with the provisions of the applicable equity compensation plans or award agreements upon directors' or employees' departures from Farmer Mac.

Cash is not received from exercises of SARs or the vesting and issuance of restricted stock. During 2021, 2020, and 2019 the reduction of income taxes payable as a result of the deduction for the exercise of SARs and the vesting or accelerated tax elections of restricted stock was $0.9 million, $0.5 million, and $1.0 million, respectively.

During 2021, 2020, and 2019, Farmer Mac recorded a net decrease to additional paid-in capital of $1.3 million, $0.6 million, and $1.8 million, respectively, related to stock-based compensation awards.

As of December 31, 2021, Farmer Mac had no stock options outstanding. The following tables summarize information regarding SARs and non-vested restricted stock outstanding as of December 31, 2021:

Table 9.4

SARs:

	Outstanding		Exercisable		Vested or Expected to Vest	
Range of Exercise Prices	SARs	Weighted-Average Remaining Contractual Life	SARs	Weighted-Average Remaining Contractual Life	SARs	Weighted-Average Remaining Contractual Life
$10.00 - $24.99	3,000	0.2 years	3,000	0.2 years	3,000	0.2 years
25.00 - 39.99	37,037	2.7 years	37,037	2.7 years	37,037	2.7 years
40.00 - 54.99	—	0.0 years	—	0.0 years	—	0.0 years
55.00 - 69.99	3,381	5.3 years	3,381	5.3 years	3,381	5.3 years
70.00 - 84.99	52,458	7.9 years	22,730	7.7 years	52,458	7.9 years
85.00 - 99.99	34,533	8.7 years	5,958	6.3 years	34,533	8.7 years
	130,409		72,106		130,409	

Non-vested Restricted Stock:

	Outstanding		Expected to Vest	
Weighted-Average Grant-Date Fair Value	Non-vested Restricted Stock	Weighted-Average Remaining Contractual Life	Non-vested Restricted Stock	Weighted-Average Remaining Contractual Life
$50.00 - $64.99	18,580	1.3 years	18,580	1.3 years
65.00 - 79.99	25,314	0.9 years	25,314	0.9 years
80.00 - 94.99	58,872	1.7 years	58,872	1.7 years
95.00-109.99	1,125	1.5 years	1,125	1.5 years
	103,891		103,891	

As of December 31, 2021 and 2020, the intrinsic value of SARs, and non-vested restricted stock outstanding, exercisable, and vested or expected to vest was $20.4 million and $8.5 million, respectively. During 2021, 2020, and 2019, the total intrinsic value of SARs exercised was $0.9 million, $0.7 million, and $1.9 million, respectively. As of December 31, 2021, there was $3.3 million of total unrecognized compensation cost related to non-vested SARs and restricted stock awards. This cost is expected to be recognized over a weighted-average period of 1.8 years.

The weighted-average grant date fair values of SARs and restricted stock awards granted in 2021, 2020, and 2019 were $65.48, $45.91, and $58.27 per share, respectively. Under the fair value-based method of accounting for stock-based compensation cost, Farmer Mac recognized compensation expense of $4.3 million, $4.1 million, and $2.3 million during 2021, 2020, and 2019, respectively.

The fair value of SARs was estimated using the Black-Scholes option pricing model based on the following assumptions:

Table 9.5

	For the Year Ended December 31,		
	2021	2020	2019
Risk-free interest rate	0.9%	0.9%	2.5%
Expected years until exercise	6 years	6 years	6 years
Expected stock volatility	39.1%	34.3%	33.8%
Dividend yield	4.0%	4.2%	3.4%

The risk-free interest rates used in the model were based on the U.S. Treasury yield curve in effect at the grant date. Farmer Mac used historical data to estimate the timing of option exercises and stock option cancellation rates used in the model. Expected volatilities were based on historical volatility of Farmer Mac's Class C non-voting common stock. The dividend yields were based on the expected dividends as a percentage of the value of Farmer Mac's Class C non-voting common stock on the grant date.

Because restricted stock awards will be issued upon vesting regardless of the stock price, expected stock volatility is not considered in determining grant date fair value. Restricted stock awards also accrue dividends which are paid at vesting. The weighted-average grant date fair value of the restricted stock awarded in 2021, 2020, and 2019 was $88.92, $66.02, and $80.51 per share, respectively, which is based on the closing price of the stock on the date granted.

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 December 31, 2021 and December 31, 2020, 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 December 31, 2021, Farmer Mac's minimum capital requirement was $713.8 million and its core capital level was $1.2 billion, which was $486.8 million above the minimum capital requirement as of that date. As of December 31, 2020, Farmer Mac's minimum capital requirement was $680.9 million and its core capital level was $1.0 billion, which was $325.5 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.

10. INCOME TAXES

Farmer Mac is subject to federal corporate income taxes but is exempt from state and local corporate income taxes. The components of the federal corporate income tax expense for the years ended December 31, 2021, 2020, and 2019 were as follows:

Table 10.1

	For the Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Current income tax expense	$ 37,314	$ 30,634	$ 28,316
Deferred income tax expense	(1,961)	(1,849)	789
Income tax expense	$ 35,353	$ 28,785	$ 29,105

A reconciliation of income tax at the statutory federal corporate income tax rate to the income tax expense for the years ended December 31, 2021, 2020, and 2019 is as follows:

Table 10.2

	For the Year Ended December 31,		
	2021	2020	2019
	(dollars in thousands)		
Tax expense at statutory rate	$ 35,198	$ 28,861	$ 29,117
Excess tax benefits related to stock-based awards	(300)	(9)	(449)
Valuation allowance	—	—	49
Other	455	(67)	388
Income tax expense	$ 35,353	$ 28,785	$ 29,105
Statutory tax rate	21.0 %	21.0 %	21.0 %

The components of the deferred tax assets and liabilities as of December 31, 2021 and 2020 were as follows:

Table 10.3

	As of December 31,	
	2021	2020
	(in thousands)	
Deferred tax assets:		
Basis differences related to financial derivatives	$ 63,982	$ 100,099
Allowance for losses	3,452	3,690
Unrealized losses on cash flow hedges	1,427	6,065
Compensation and Benefits	1,281	1,020
Stock-based compensation	1,462	1,027
Capital loss carryforwards	32	86
Valuation allowance	(32)	(86)
Other	394	341
Total deferred tax assets	71,998	112,242
Deferred tax liability:		
Basis differences related to hedged items	53,945	91,460
Unrealized gains on available-for-sale securities	2,451	2,364
Other	44	97
Total deferred tax liability	56,440	93,921
Net deferred tax asset	$ 15,558	$ 18,321

After the evaluation of both positive and negative objective evidence regarding the likelihood that its deferred tax assets will be realized, Farmer Mac established a valuation allowance of $32,000 and $86,000 as of December 31, 2021 and 2020, respectively, which was attributable to capital loss carryforwards on investment securities. Farmer Mac did not establish a valuation allowance for the remainder of its deferred tax assets because it believes it is more likely than not that those deferred tax assets will be realized. As of December 31, 2021, no capital loss carryforwards expired. As of December 31, 2021, the amount of capital loss carryforwards was $0.2 million. These capital loss carryforwards will expire beginning in 2024.

As of December 31, 2021 and 2020, Farmer Mac did not identify any uncertain tax positions.

Farmer Mac did not have any unrecognized tax benefits for the years ended December 31, 2021, 2020, and 2019.

Tax years 2018 through 2021 remain subject to examination.

11. EMPLOYEE BENEFITS

Farmer Mac makes contributions to a defined contribution retirement plan for all of its employees. Farmer Mac contributed 13.2% of the lesser of an employee's gross salary and the maximum compensation permitted under the Economic Growth and Tax Relief Reconciliation Act of 2001 ("EGTRRA") ($290,000 for 2021, $285,000 for 2020, and $280,000 for 2019), plus 5.7% of the difference between: (1) the lesser of the gross salary and the amount established under EGTRRA and (2) the Social Security Taxable Wage Base. Employees are fully vested after having been employed for approximately 3 years. Expenses for this plan for the years ended December 31, 2021, 2020, and 2019 were $2.7 million, $2.2 million, and $1.9 million, respectively.

Farmer Mac established a Nonqualified Deferred Compensation Plan ("NQDC Plan") for its executive officers effective May 1, 2017. Under the NQDC Plan, Farmer Mac credits the account of each participant each calendar year with an amount equal to 18.9% of the difference between: (1) the amount established under EGTRRA and (2) a participant's gross annual base salary, which for purposes of calculating employer credits under the NQDC Plan is capped at $700,000 for Farmer Mac's Chief Executive Officer and $500,000 for all other participants. This fixed contribution percentage is the same formula used for determining employer contributions to Farmer Mac's defined contribution retirement plan based on an employee's gross annual base salary that is above the amount established under EGTRRA for that year. Expenses for the NQDC Plan were $0.2 million, $0.2 million, and $0.1 million for the years ended December 31, 2021, 2020, and 2019, respectively.

12. GUARANTEES AND COMMITMENTS

Farmer Mac offers two credit enhancement alternatives to direct loan purchases that allow approved lenders the ability to retain the cash flow benefits of their loans and increase their liquidity and lending capacity: (1) Farmer Mac Guaranteed Securities and (2) LTSPCs, both of which are available through each of the Agricultural Finance and Rural Infrastructure Finance lines of business.

The contractual terms of Farmer Mac's off-balance sheet guarantees and LTSPCs range from less than 1 year to 30 years. However, the actual term of each guarantee or LTSPC may be significantly less than the contractual term based on the prepayment characteristics of the related loans. Farmer Mac's maximum potential exposure under these off-balance sheet guarantees and LTSPCs is the unpaid principal balance of the underlying loans. Guarantees issued or modified on or after January 1, 2003 are recorded in the consolidated balance sheets. Farmer Mac's maximum potential exposure was $3.8 billion and $3.3 billion as of December 31, 2021 and 2020, respectively. Farmer Mac's maximum potential exposure for guarantees issued before January 1, 2003, which are not recorded on the consolidated balance sheets, was $7.8 million and $10.8 million as of December 31, 2021 and 2020, respectively. The maximum exposure from these guarantees and LTSPCs is not representative of the actual loss Farmer Mac is likely to incur, based on historical loss experience. In the event Farmer Mac was required to make payments under its guarantees or LTSPCs, Farmer Mac would have the right to enforce the terms of the loans, and in the event of default, would have access to the underlying collateral. For information on Farmer Mac's methodology for determining the reserve for losses for its financial guarantees, see Note 2(h). The following table presents changes in Farmer Mac's guarantee and commitment obligations in the consolidated balance sheets for the years ended December 31, 2021, 2020, and 2019:

Table 12.1

	For the Years Ended December 31,		
	2021	2020	2019
		(in thousands)	
Beginning balance, January 1	$ 35,535	$ 36,700	$ 38,683
Additions to the guarantee and commitment obligation(1)	15,648	5,210	4,398
Amortization of the guarantee and commitment obligation	(7,257)	(6,375)	(6,381)
Ending balance, December 31	$ 43,926	$ 35,535	$ 36,700

(1) Represents the fair value of the guarantee and commitment obligation at inception.

Off-Balance Sheet Farmer Mac Guaranteed Securities

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 December 31, 2021 and December 31, 2020, not including offsets provided by any recourse provisions, recoveries from third parties, or collateral for the underlying loans:

Table 12.2

Outstanding Balance of Off-Balance Sheet Farmer Mac Guaranteed Securities		
	As of December 31, 2021	As of December 31, 2020
	(in thousands)	
Agricultural Finance		
Farmer Mac Guaranteed Securities	$ 578,358	$ 378,610
Rural Infrastructure Finance		
Farmer Mac Guaranteed Securities	2,755	4,412
Total off-balance sheet Farmer Mac Guaranteed Securities	$ 581,113	$ 383,022

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

Table 12.3

	For the Years Ended December 31,		
	2021	2020	2019
	(in thousands)		
Proceeds from new securitizations	$ 404,568	$ 165,054	$ 321,414
Guarantee fees received	1,029	1,365	1,413
Servicing fees received	199	—	—
Interest-only Farmer Mac Guaranteed Securities income	47	—	—

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 12.4

	As of December 31, 2021	As of December 31, 2020
	(dollars in thousands)	
Guarantee and commitment obligation	$ 7,355	$ 1,625
Weighted average remaining maturity:		
Farmer Mac Guaranteed Securities	21.7 years	9.5 years
AgVantage Securities	3.0 years	4.0 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 as of December 31, 2021 and 2020:

Table 12.5

	As of December 31, 2021	As of December 31, 2020
	(dollars in thousands)	
Guarantee and commitment obligation[1]	$ 36,571	$ 33,909
Maximum principal amount	3,191,061	2,881,856
Weighted-average remaining maturity	15.5 years	15.3 years

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

Commitments

Farmer Mac enters into mandatory and optional delivery commitments to purchase loans. Most loan purchase commitments entered into by Farmer Mac are mandatory commitments, in which Farmer Mac charges a fee to extend or cancel the commitment. As of December 31, 2021 and 2020, commitments to purchase Farm & Ranch loans and USDA Guarantees totaled $78.4 million and $125.8 million, respectively, all of which were mandatory commitments. As of December 31, 2021, there were no commitments to purchase Rural Utilities loans. Any optional loan purchase commitments are sold forward under optional commitments to deliver Farmer Mac Guaranteed Securities that may be canceled by Farmer Mac without penalty.

Reserve for Losses

The following table is a summary, by asset type, of the reserve for losses as of December 31, 2021 and December 31, 2020:

Table 12.6

	December 31, 2021	December 31, 2020
	Reserve for Losses	Reserve for Losses
	(in thousands)	
Agricultural Finance:		
LTSPCs and Farmer Mac Guaranteed Securities	$ 1,068	$ 2,097
Rural Infrastructure Finance		
LTSPCs	882	1,180
Total	$ 1,950	$ 3,277

The following is a summary of the changes in the reserve for losses for each year in the three-year period ended December 31, 2021:

Table 12.7

	Agricultural Finance	Rural Infrastructure Finance
	Reserve for Losses	Reserve for Losses
	(in thousands)	
Balance as of December 31, 2018[1]	$ 2,167	$ —
Release of losses	(3)	—
Balance as of December 31, 2019[1]	$ 2,164	$ —
Cumulative effect adjustment from adoption of current expected credit loss standard	(148)	1,011
Adjusted Beginning Balance	$ 2,016	$ 1,011
Provision for losses	81	169
Balance as of December 31, 2020[2]	$ 2,097	$ 1,180
Release of losses	(1,029)	(298)
Balance as of December 31, 2021[2]	$ 1,068	$ 882

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

(2) Reserve for losses reflects the adoption of ASU 2016-13, "Financial Instruments - Credit Losses," in first quarter 2020.

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 year ended December 31, 2021 was primarily due to improving economic factor forecasts and ratings upgrades.

The provision to the reserve for losses recorded during the year ended December 31, 2020 was primarily due to credit downgrades in the LTSPC portfolio.

The following table presents the unpaid principal balances by delinquency status of Agricultural Finance and Rural Utilities loans underlying LTSPCs and Farmer Mac Guaranteed Securities as of December 31, 2021 and December 31, 2020:

Table 12.8

	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.

	As of December 31, 2020					
	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	$ 2,389,777	$ 2,189	$ 1,344	$ 11,433	$ 14,966	$ 2,404,743
Rural Infrastructure:						
LTSPCs	$ 556,425	$ —	$ —	$ —	$ —	$ 556,425

(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 Utilities loans underlying LTSPCs and Farmer Mac Guaranteed Securities as of December 31, 2021 and December 31, 2020, by year of origination:

Table 12.9

	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 Year Ended:								
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 Year Ended:								
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, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Agricultural Finance LTSPCs and Farmer Mac Guaranteed Securities:								
Internally Assigned Risk Rating:								
Acceptable	$ 178,213	$ 213,620	$ 183,948	$ 237,042	$ 207,296	$ 969,860	$ 211,620	$ 2,201,599
Special mention[1]	3,920	1,742	1,502	5,603	19,644	50,004	10,058	92,473
Substandard[2]	264	10,250	12,611	14,578	7,841	60,602	4,525	110,671
Total	$ 182,397	$ 225,612	$ 198,061	$ 257,223	$ 234,781	$1,080,466	$ 226,203	$ 2,404,743
For the Year Ended:								
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, 2020							
	Year of Origination:							
	2020	2019	2018	2017	2016	Prior	Revolving Loans - Amortized Cost Basis	Total
	(in thousands)							
Rural Infrastructure Finance LTSPCs:								
Internally Assigned Risk Rating:								
Acceptable	$ —	$ —	$ —	$ —	$ —	$ 549,405	$ 7,020	$ 556,425
Special mention[1]	—	—	—	—	—	—	—	—
Substandard[2]	—	—	—	—	—	—	—	—
Total	$ —	$ —	$ —	$ —	$ —	$ 549,405	$ 7,020	$ 556,425
For the Year Ended:								
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.

13. 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 December 31, 2021 and December 31, 2020, respectively, and indicate the fair value hierarchy of the valuation techniques used by Farmer Mac to determine such fair value:

Table 13.1

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	19,066	—	19,139
Guarantee Asset	—	—	6,237	6,237
Total Assets at fair value	$ 1,179,542	$ 2,656,734	$ 6,358,451	$ 10,194,727
Liabilities:				
Financial derivatives	$ —	$ 34,248	$ —	$ 34,248
Total Liabilities at fair value	$ —	$ 34,248	$ —	$ 34,248
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.

Assets and Liabilities Measured at Fair Value as of December 31, 2020

	Level 1	Level 2	Level 3[1]	Total
		(in thousands)		
Recurring:				
Assets:				
Investment Securities:				
Available-for-sale:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ —	$ —	$ 19,171	$ 19,171
Floating rate asset-backed securities	—	6,231	—	6,231
Floating rate Government/GSE guaranteed mortgage-backed securities	—	2,360,026	—	2,360,026
Fixed rate GSE guaranteed mortgage-backed securities	—	313	—	313
Fixed rate U.S. Treasuries	1,467,951	—	—	1,467,951
Total Available-for-sale Investment Securities	1,467,951	2,366,570	19,171	3,853,692
Farmer Mac Guaranteed Securities:				
Available-for-sale:				
AgVantage	—	—	6,947,701	6,947,701
Total Farmer Mac Guaranteed Securities	—	—	6,947,701	6,947,701
USDA Securities:				
Trading	—	—	6,695	6,695
Total USDA Securities	—	—	6,695	6,695
Financial derivatives	—	17,468	—	17,468
Total Assets at fair value	$ 1,467,951	$ 2,384,038	$ 6,973,567	$ 10,825,556
Liabilities:				
Financial derivatives	$ 82	$ 29,810	$ —	$ 29,892
Total Liabilities at fair value	$ 82	$ 29,810	$ —	$ 29,892

[1] Level 3 assets represent 29% of total assets and 65% 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 December 31, 2021 or December 31, 2020.

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 years ended December 31, 2021 and 2020, 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 years ended December 31, 2021 and 2020.

Table 13.2

Level 3 Assets and Liabilities Measured at Fair Value for the Year Ended December 31, 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)	$ —	$ 99	$ 19,254
Total available-for-sale	19,171	—	—	—	(16)	—	99	19,254
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	6,947,701	1,143,115	—	(1,614,598)	47	(176,064)	15,944	6,316,145
Farmer Mac Guaranteed Securities	—	12,560	—	(263)	—	—	117	12,414
Total available-for-sale	6,947,701	1,155,675	—	(1,614,861)	47	(176,064)	16,061	6,328,559
USDA Securities:								
Trading	6,695	—	—	(2,178)	—	(116)	—	4,401
Total USDA Securities	6,695	—	—	(2,178)		(116)	—	4,401
Guarantee and commitment obligations:								
Guarantee Asset	—	6,237	—	—	—	—	—	6,237
Total Guarantee and commitment obligations	—	6,237	—	—	—	—	—	6,237
Total Assets at fair value	$ 6,973,567	$1,161,912	$ —	$(1,617,039)	$ 31	$ (176,180)	$ 16,160	$ 6,358,451

Level 3 Assets and Liabilities Measured at Fair Value for the Year Ended December 31, 2020

	Beginning Balance	Purchases	Sales	Settlements	Allowance for Losses	Realized and unrealized 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	$ 18,912	$ —	$ —	$ —	$ (36)	$ —	$ 295	$ 19,171
Total available-for-sale	18,912	—	—	—	(36)	—	295	19,171
Farmer Mac Guaranteed Securities:								
Available-for-sale:								
AgVantage	7,143,025	974,237	—	(1,397,861)	(309)	202,706	25,903	6,947,701
Total available-for-sale	7,143,025	974,237	—	(1,397,861)	(309)	202,706	25,903	6,947,701
USDA Securities:								
Trading	8,913	—	—	(2,269)	—	51	—	6,695
Total USDA Securities	8,913	—	—	(2,269)		51	—	6,695
Total Assets at fair value	$ 7,170,850	$ 974,237	$ —	$ (1,400,130)	$ (345)	$ 202,757	$ 26,198	$ 6,973,567

Level 3 Assets and Liabilities Measured at Fair Value for the Year Ended December 31, 2019

	Beginning Balance	Purchases	Sales	Settlements	Realized and unrealized gains included in Income	Unrealized gains/(losses) included in Other Comprehensive Income	Ending Balance
				(in thousands)			
Recurring:							
Assets:							
Investment Securities:							
Available-for-sale:							
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 18,715	$ —	$ —	$ —	$ —	$ 197	$ 18,912
Total available-for-sale	18,715	—	—	—	—	197	18,912
Farmer Mac Guaranteed Securities:							
Available-for-sale:							
AgVantage	5,974,497	2,033,713	—	(1,020,294)	181,144	(26,035)	7,143,025
Total available-for-sale	5,974,497	2,033,713	—	(1,020,294)	181,144	(26,035)	7,143,025
USDA Securities:							
Available-for-sale	—	57,853	(57,853)	—	—	—	—
Trading	9,999	—	—	(1,412)	326	—	8,913
Total USDA Securities	9,999	57,853	(57,853)	(1,412)	326	—	8,913
Total Assets at fair value	$ 6,003,211	$ 2,091,566	$ (57,853)	$ (1,021,706)	$ 181,470	$ (25,838)	$ 7,170,850

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 December 31, 2021 and December 31, 2020:

Table 13.3

	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%)

	As of December 31, 2020			
Financial Instruments	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted-Average)
			(in thousands)	
Assets:				
Investment securities:				
Floating rate auction-rate certificates backed by Government guaranteed student loans	$ 19,171	Indicative bids	Range of broker quotes	97.5% - 97.5% (97.5%)
Farmer Mac Guaranteed Securities:				
AgVantage	$ 6,947,701	Discounted cash flow	Discount rate	0.8% - 2.3% (1.3%)
USDA Securities	$ 6,695	Discounted cash flow	Discount rate	0.9% - 1.9% (1.4%)
			CPR	25% - 49% (44%)

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 December 31, 2021 and December 31, 2020:

Table 13.4

	As of December 31, 2021		As of December 31, 2020	
	Fair Value	Carrying Amount	Fair Value	Carrying Amount
	(in thousands)			
Financial assets:				
Cash and cash equivalents	$ 908,785	$ 908,785	$ 1,033,941	$ 1,033,941
Investment securities	3,884,202	3,882,590	3,899,925	3,898,724
Farmer Mac Guaranteed Securities	8,360,293	8,361,798	8,148,691	8,123,493
USDA Securities	2,536,473	2,440,732	2,637,509	2,480,321
Loans	9,814,642	9,248,678	9,167,525	8,535,146
Financial derivatives	19,139	19,139	17,468	17,468
Guarantee and commitment fees receivable	42,533	45,538	34,115	37,113
Financial liabilities:				
Notes payable	22,716,791	22,716,156	22,130,263	21,848,917
Debt securities of consolidated trusts held by third parties	1,005,306	981,379	1,390,330	1,323,786
Financial derivatives	34,248	34,248	29,892	29,892
Guarantee and commitment obligations	40,920	43,926	32,537	35,535

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.

14. 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 years ended December 31, 2021, 2020 and 2019. The amounts for the years ended December 31, 2020 and 2019 have been revised to conform to the current year's segment alignment.

Table 14.1

Core Earnings by Business Segment
For the Year Ended December 31, 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	$ 118,289	$ 27,081	$ 8,224	$ 1,219	$ 65,405	$ 557	$ —	$ —	$ 220,775
Less: reconciling adjustments(1)(2)(3)	(4,753)	—	(157)	—	4,803	—	—	107	—
Net effective spread	113,536	27,081	8,067	1,219	70,208	557	—	107	—
Guarantee and commitment fees	16,178	48	1,287	20	—	—	—	(4,864)	12,669
Gain on sale of mortgage loans	6,539	—	—	—	—	—	—	—	6,539
Other income/(expense)(3)	1,966	—	5	—	—	—	(291)	(2,821)	(1,141)
Total revenues	138,219	27,129	9,359	1,239	70,208	557	(291)	(7,578)	238,842
Release of/(provision for) losses	1,574	(210)	(291)	(198)	—	(15)	—	—	860
Release of reserve for losses	1,034	—	293	—	—	—	—	—	1,327
Operating expenses	—	—	—	—	—	—	(73,416)	—	(73,416)
Total non-interest expense	1,034	—	293	—	—	—	(73,416)	—	(72,089)
Core earnings before income taxes	140,827	26,919	9,361	1,041	70,208	542	(73,707)	(7,578) (4)	167,613
Income tax (expense)/benefit	(29,574)	(5,653)	(1,965)	(219)	(14,744)	(114)	15,325	1,591	(35,353)
Core earnings before preferred stock dividends	111,253	21,266	7,396	822	55,464	428	(58,382)	(5,987) (4)	132,260
Preferred stock dividends	—	—	—	—	—	—	(24,677)	—	(24,677)
Segment core earnings/(losses)	$ 111,253	$ 21,266	$ 7,396	$ 822	$ 55,464	$ 428	$ (83,059)	$ (5,987) (4)	$ 107,583
Total Assets	$13,112,193	$1,507,848	$5,344,707	$ 87,553	$ —	$ 5,037,636	$ 55,554	$ —	25,145,491
Total on- and off-balance sheet program assets at principal balance	$16,094,640	$1,537,834	$5,895,226	$ 86,763	$ —	$ —	$ —	$ —	23,614,463

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

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

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

(4) 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 Year Ended December 31, 2020

	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	$ 96,355	$ 21,441	$ 7,083	$ 303	$ 66,446	$ (1,040)	$ —	$ —	$ 190,588
Less: reconciling adjustments(1)(2)(3)	(6,197)	—	(207)	—	12,772	—	—	(6,368)	—
Net effective spread	90,158	21,441	6,876	303	79,218	(1,040)	—	(6,368)	—
Guarantee and commitment fees	17,800	5	1,345	—	—	—	—	(6,601)	12,549
Other income/ (expense)(3)	3,652	—	32	—	—	—	(534)	604	3,754
Total revenues	111,610	21,446	8,253	303	79,218	(1,040)	(534)	(12,365)	206,891
(Provision for)/release of losses	(2,941)	36	(4,763)	(110)	—	(27)	—	—	(7,805)
Provision for reserve for losses	(80)	—	(170)	—	—	—	—	—	(250)
Operating expenses	—	—	—	—	—	—	(61,403)	—	(61,403)
Total non-interest expense	(80)	—	(170)	—	—	—	(61,403)	—	(61,653)
Core earnings before income taxes	108,589	21,482	3,320	193	79,218	(1,067)	(61,937)	(12,365) (4)	137,433
Income tax (expense)/ benefit	(22,802)	(4,511)	(697)	(41)	(16,636)	224	13,082	2,596	(28,785)
Core earnings before preferred stock dividends	85,787	16,971	2,623	152	62,582	(843)	(48,855)	(9,769) (4)	108,648
Preferred stock dividends	—	—	—	—	—	—	(17,805)	—	(17,805)
Loss on retirement of preferred stock	—	—	—	—	—	—	—	(1,667)	(1,667)
Segment core earnings/(losses)	$ 85,787	$ 16,971	$ 2,623	$ 152	$ 62,582	$ (843)	$ (66,660)	$ (11,436) (4)	$ 89,176
Total Assets	$12,373,781	$1,663,581	$4,760,585	$ 73,493	$ —	$ 5,441,426	$ 42,635	$ —	$ 24,355,501
Total on- and off-balance sheet program assets at principal balance	$14,872,894	$1,664,115	$5,314,051	$ 73,035	$ —	$ —	$ —	$ —	$ 21,924,095

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

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

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

(4) 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 Year Ended December 31, 2019

	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	$ 83,226	$ 13,757	$ 5,242	$ 22	70,500	$ 388	$ —	$ —	$ 173,135
Less: reconciling adjustments[(1)(2)(3)]	(7,095)	—	(176)	—	2,744	—	—	4,527	—
Net effective spread	76,131	13,757	5,066	22	73,244	388	—	4,527	—
Guarantee and commitment fees	19,551	—	1,784	—	—	—	—	(7,669)	13,666
Other income/ (expense)[(3)]	1,571	—	37	—	—	—	167	5,501	7,276
Total revenues	97,253	13,757	6,887	22	73,244	388	167	2,359	194,077
Provision for losses	(3,165)	(339)	—	—	—	—	—	—	(3,504)
Release of reserve for losses	3	—	—	—	—	—	—	—	3
Operating expenses	—	—	—	—	—	—	(51,925)	—	(51,925)
Total non-interest expense	3	—	—	—	—	—	(51,925)	—	(51,922)
Core earnings before income taxes	94,091	13,418	6,887	22	73,244	388	(51,758)	2,359 [(4)]	138,651
Income tax (expense)/ benefit	(19,759)	(2,818)	(1,446)	(5)	(15,381)	(82)	10,881	(495)	(29,105)
Core earnings before preferred stock dividends	74,332	10,600	5,441	17	57,863	306	(40,877)	1,864 [(4)]	109,546
Preferred stock dividends	—	—	—	—	—	—	(13,940)	—	(13,940)
Loss on retirement of preferred stock	—	—	—	—	$ —	—	—	(1,956)	(1,956)
Segment core earnings/(losses)	$ 74,332	$ 10,600	$ 5,441	$ 17	$ 57,863	$ 306	$ (54,817)	$ (92) [(4)]	$ 93,650
Total Assets	$11,889,538	$1,338,114	$4,625,125	$ 9,802	$ —	$ 3,809,891	$ 36,904	$ —	$ 21,709,374
Total on- and off-balance sheet program assets at principal balance	$14,559,268	$1,328,602	$5,220,270	$ 9,802	$ —	$ —	$ —	$ —	$ 21,117,942

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

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

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

(4) Net adjustments to reconcile to the corresponding income measures: core earnings before income taxes reconciled to income before income taxes; core earnings before preferred stock dividends reconciled to net income; and segment core earnings reconciled to net income attributable to common stockholders.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. 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 Annual Report on Form 10-K, 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 December 31, 2021.

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 December 31, 2021.

Management's Report on Internal Control Over Financial Reporting. See "Financial Statements—Management's Report on Internal Control Over Financial Reporting" in Item 8 of this Annual Report on Form 10-K.

Attestation Report of Independent Registered Public Accounting Firm. See "Financial Statements—Report of Independent Registered Public Accounting Firm" in Item 8 of this Annual Report on Form 10-K.

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 December 31, 2021 that have materially affected, or are reasonably likely to materially affect, Farmer Mac's internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not Applicable.

PART III

Item 10. Directors, Executive Officers, and Corporate Governance

The information required by this Item is incorporated by reference to Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference to Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item is incorporated by reference to Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this Item is incorporated by reference to Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022.

PART IV

Item 14. Principal Accountant Fees and Services

The information required by this Item is incorporated by reference to Farmer Mac's definitive proxy statement to be filed on or about April 14, 2022.

Item 15. Exhibits and Financial Statement Schedules

a. (1) Financial Statements.

Refer to Item 8 above.

(2) Financial Statement Schedules.

There are no schedules because they are not applicable, not required, or the information required to be set forth therein is included in the consolidated financial statements or in notes thereto.

b. Exhibits

*	3.1	—	Title VIII of the Farm Credit Act of 1971, as most recently amended on June 18, 2020 (Previously filed as Exhibit 3.1 to Form 10-Q filed August 10, 2020).
*	3.2	—	Amended and Restated By-Laws of the Registrant (Previously filed as Exhibit 3.1 to Form 8-K filed May 12, 2020).
*	4.1	—	Specimen Certificate for Farmer Mac Class A Voting Common Stock (Previously filed as Exhibit 4.1 to Form 10-Q filed May 15, 2003).

*	4.2	—	Specimen Certificate for Farmer Mac Class B Voting Common Stock (Previously filed as Exhibit 4.2 to Form 10-Q filed May 15, 2003).
*	4.3	—	Specimen Certificate for Farmer Mac Class C Non-Voting Common Stock (Previously filed as Exhibit 4.3 to Form 10-Q filed May 15, 2003).
*	4.4	—	Specimen Certificate for 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	—	Form of Time-Based Restricted Stock Units Award Agreement for grants made to executive officers on or after March 2, 2021. (Previously filed as Exhibit 10.1 to Form 8-K filed March 8, 2021)
†*	10.1.1	—	Form of Time-Based Restricted Stock Units Award Agreement for grants made to directors on or after March 2, 2021 (Previously filed as Exhibit 10.2 to Form 8-K filed March 8, 2021)
†*	10.1.2	—	Amended and Restated 2008 Omnibus Incentive Plan (Previously filed as Exhibit 10.2 to Form 10-Q filed August 9, 2018).
†*	10.1.3	—	Form of SARs Award Agreement under the 2008 Omnibus Incentive Plan for grants made prior to April 1, 2012 (Previously filed as Exhibit 10 to Form 8-K filed June 11, 2008).
†*	10.1.4	—	Form of SARs Award Agreement under the 2008 Omnibus Incentive Plan for grants made from April 1, 2012 to March 31, 2013 (Previously filed as Exhibit 10.1 to Form 8-K filed April 6, 2012).
†*	10.1.5	—	Form of SARs Award Agreement under the 2008 Omnibus Incentive Plan for grants made from April 1, 2013 to March 31, 2015 (Previously filed as Exhibit 10.1 to Form 8-K filed April 5, 2013).
†*	10.1.6	—	Form of SARs Award Agreement under the 2008 Omnibus Incentive Plan for grants made on or after April 1, 2015 (Previously filed as Exhibit 10.1 to Form 8-K filed on April 3, 2015).
†*	10.1.7	—	Form of Restricted Stock Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made prior to April 1, 2012 (Previously filed as Exhibit 10.1 to Form 8-K filed June 10, 2009).
†*	10.1.8	—	Form of Restricted Stock Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made from April 1, 2012 to March 31, 2013 (Previously filed as Exhibit 10.2 to Form 8-K filed April 6, 2012).
†*	10.1.9	—	Form of Performance-Based Restricted Stock Award Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made from April 1, 2013 to March 31, 2015 (Previously filed as Exhibit 10.2 to Form 8-K filed April 5, 2013).
†*	10.1.10	—	Form of Performance-Based Restricted Stock Award Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made from April 1, 2015 to March 10, 2020 (Previously filed as Exhibit 10.2 to Form 8-K filed April 3, 2015).
†*	10.1.11	—	Form of Performance-Based Restricted Stock Agreement (Officers) under the 2008 Omnibus Form of Performance-Based Restricted Stock Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made on or after March 3, 2020 (Previously filed as Exhibit 10.1 to Form 8-K filed March 10, 2020).
†*	10.1.12	—	Form of Time-Based Restricted Stock Award Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made from April 1, 2013 to March 31, 2015 (Previously filed as Exhibit 10.2 to Form 8-K filed April 5, 2013).
†*	10.1.13	—	Form of Time-Based Restricted Stock Award Agreement (Officers) under the 2008 Omnibus Incentive Plan for grants made on or after April 1, 2015 (Previously filed as Exhibit 10.3 to Form 8-K filed on April 3, 2015).
†*	10.1.14	—	Form of Restricted Stock Agreement (Directors) under the 2008 Omnibus Incentive Plan (Previously filed as Exhibit 10.3 to Form 8-K filed April 6, 2012).

†*	10.2	—	Federal Agricultural Mortgage Corporation Amended and Restated Executive Officer Severance Plan (effective January 16, 2020) (Previously filed as Exhibit 10.1 to Form 8-K filed January 23, 2020).
†*	10.3	—	Form of Participation Agreement to the Federal Agricultural Mortgage Corporation Amended and Restated Executive Officer Severance Plan (effective January 16, 2020) (Previously filed as Exhibit 10.2 to Form 8-K filed January 23, 2020).
†*	10.4	—	Nonqualified Deferred Compensation Plan (effective May 1, 2017) (Previously filed as Exhibit 10.2 to Form 10-Q filed May 10, 2017)
†*	10.5	—	Adoption Agreement of the Nonqualified Deferred Compensation Plan (effective May 1, 2017) (Previously filed as Exhibit 10.3 to Form 10-Q filed May 10, 2017)
†*	10.6	—	Form of Indemnification Agreement for Directors (Previously filed as Exhibit 10.1 to Form 8-K filed April 9, 2008).
†**	10.7	—	Description of compensation agreement between the Registrant and its directors, effective January 1, 2022.
*#	10.8	—	Amended and Restated Master Central Servicing Agreement between Zions First National Bank and the Registrant, dated as of May 1, 2004 (Previously filed as Exhibit 10.11.2 to Form 10-Q filed August 9, 2004).
*#	10.8.1	—	Amendment No. 1 to Amended and Restated Master Central Servicing Agreement between Zions First National Bank and the Registrant, dated as of June 1, 2009 (Previously filed as Exhibit 10.11.1 to Form 10-Q filed August 10, 2009).
*#	10.8.2	—	Amendment No. 2 to Amended and Restated Master Central Servicing Agreement between Zions First National Bank and the Registrant, dated as of August 25, 2010 (Previously filed as Exhibit 10.11.2 to Form 10-Q filed November 9, 2010).
*	10.9	—	Amended and Restated Note Purchase Agreement between Farmer Mac Mortgage Securities Corporation, National Rural Utilities Cooperative Finance Corporation, and the Registrant, dated as of March 24, 2011 (Previously filed as Exhibit 10.22 to Form 10-Q filed May 10, 2011).
*	10.9.1	—	Amended and Restated First Supplemental Note Purchase Agreement between Farmer Mac Mortgage Securities Corporation, National Rural Utilities Cooperative Finance Corporation, and the Registrant, dated as of January 8, 2015 (Previously filed as Exhibit 10.1 to Form 8-K filed January 13, 2015).
*	10.9.2	—	Second Amended and Restated First Supplemental Note Purchase Agreement between Farmer Mac Mortgage Securities Corporation, National Rural Utilities Cooperative Finance Corporation, and the Registrant, dated as of February 26, 2018 (Previously filed as Exhibit 10.1 to Form 10-Q filed May 10, 2018).
	10.9.3		Third Amended and Restated First Supplemental Note Purchase Agreement between Farmer Mac Mortgage Securities Corporation, National Rural Utilities Cooperative Finance Corporation, and the Registrant, dated as of May 20, 2021 (Previously filed as Exhibit 10.1 to Form 8-K filed May 20, 2021).
*	10.10	—	Amended and Restated Master Sale and Servicing Agreement between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of August 12, 2011 (Previously filed as Exhibit 10.26 to Form 10-Q filed November 9, 2011).
*	10.11	—	Amendment No. 1 to Amended and Restated Master Sale and Servicing Agreement between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of November 28, 2016 (Previously filed as Exhibit 10.17 to Form 10-K filed March 9, 2017)
*	10.12	—	Second Amended, Restated and Consolidated Pledge Agreement between Farmer Mac Mortgage Securities Corporation, National Rural Utilities Cooperative Finance Corporation, U.S. Bank National Association, and the Registrant, dated as of July 31, 2015 (Previously filed as Exhibit 10.3 to Form 10-Q filed November 9, 2015).
*	10.13	—	Long Term Standby Commitment to Purchase between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of August 31, 2015 (Previously filed as Exhibit 10.4 to Form 10-Q filed November 9, 2015).
*	10.14	—	Amendment No. 1 to Long Term Standby Commitment to Purchase between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of May 31, 2016 (Previously filed as Exhibit 10.1 to Form 10-Q filed August 9, 2016).
*	10.15	—	Loan Participation Servicing Agreement between National Rural Utilities Cooperative Finance Corporation, National Cooperative Services Corporation, and the Registrant, dated as of September 26, 2019 (Previously filed as Exhibit 10 to Form 8-K filed October 9, 2019).
*	10.16	—	Master Non-Recourse Loan Participation Agreement between CoBank, ACB, CoBank, FCB, and the Registrant, dated as of February 13, 2019 (Previously filed as Exhibit 10.1 to Form 8-K filed February 20, 2019).
*	10.17	—	Loan Participation and Servicing Agreement between CoBank, ACB and the Registrant, dated as of February 13, 2019 (Previously filed as Exhibit 10.2 to Form 8-K filed February 20, 2019).
*	10.18	—	Master Non-Recourse Loan Participation Agreement between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of February 3, 2020 (Previously filed as Exhibit 10.1 to Form 8-K filed February 7, 2020).
*	10.19	—	Loan Participation and Servicing Agreement between National Rural Utilities Cooperative Finance Corporation and the Registrant, dated as of February 3, 2020 (Previously filed as Exhibit 10.2 to Form 8-K filed February 7, 2020).

*	21	—	List of the Registrant's subsidiaries (Previously filed as Exhibit 21 to Form 10-K filed March 8, 2018).
**	31.1	—	Certification of Registrant's principal executive officer relating to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2021, 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 Annual Report on Form 10-K for the year ended December 31, 2021, 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 Annual Report on Form 10-K for the year ended December 31, 2021, 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.

Item 16. Form 10-K Summary

None.

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	February 28, 2022
By: Bradford T. Nordholm President and Chief Executive Officer (Principal Executive Officer)	Date

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Name	Title	Date
/s/ LaJuana S. Wilcher LaJuana S. Wilcher	Chair of the Board and Director	February 28, 2022
/s/ Bradford T. Nordholm Bradford T. Nordholm	President and Chief Executive Officer (Principal Executive Officer)	February 28, 2022
/s/ Aparna Ramesh Aparna Ramesh	Executive Vice President – Chief Financial Officer (Principal Financial Officer)	February 28, 2022
/s/ Gregory N. Ramsey Gregory N. Ramsey	Vice President – Controller (Principal Accounting Officer)	February 28, 2022

Name	Title	Date
/s/ Dennis L. Brack Dennis L. Brack	Director	February 28, 2022
/s/ Richard H. Davidson Richard H. Davidson	Director	February 28, 2022
/s/ Everett M. Dobrinski Everett M. Dobrinski	Director	February 28, 2022
/s/ James R. Engebretsen James R. Engebretsen	Director	February 28, 2022
/s/ Sara L. Faivre Sara L. Faivre	Director	February 28, 2022
/s/ Amy H. Gales Amy H. Gales	Director	February 28, 2022
/s/ Mitchell A. Johnson Mitchell A. Johnson	Director	February 28, 2022
/s/ Eric T. McKissack Eric T. McKissack	Director	February 28, 2022
/s/ Lowell L. Junkins Lowell L. Junkins	Director	February 28, 2022
/s/ Robert G. Sexton Robert G. Sexton	Director	February 28, 2022
/s/ Charles A. Stones Charles A. Stones	Director	February 28, 2022
/s/ Roy H. Tiarks Roy H. Tiarks	Director	February 28, 2022
/s/ Todd P. Ware Todd P. Ware	Director	February 28, 2022
/s/ Myles J. Watts Myles J. Watts	Director	February 28, 2022

AGM.A LISTED NYSE

AGM LISTED NYSE

FARMER MAC

FINANCING RURAL AMERICA®

1999 K Street, N.W., Fourth Floor
Washington, DC 20006
Phone: 202.872.7700
or 800.879.3276

www.farmermac.com