UNITED BY MISSION

CoBANK

2022 ANNUAL REPORT

FINANCIAL HIGHLIGHTS

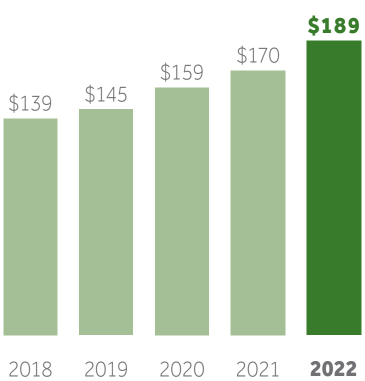
FOR THE YEAR ($ in millions)	**2022**	2021	2020	2019	2018
Net Interest Income	**$ 1,884**	$ 1,726	$ 1,567	$ 1,399	$ 1,431
Provision for Loan Losses	**$ 111**	$ 18	$ 21	$ 57	$ 66
Net Income	**$ 1,449**	$ 1,314	$ 1,263	$ 1,091	$ 1,191
Patronage Distributions	**$ 996**	$ 885	$ 728	$ 644	$ 700

AT YEAR-END ($ in millions)	**2022**	2021	2020	2019	2018
Agribusiness	**$ 40,098**	$ 38,094	$ 36,103	$ 33,168	$ 32,432
Farm Credit Banking	**$ 71,529**	$ 65,632	$ 60,516	$ 54,459	$ 50,695
Rural Infrastructure	**$ 28,461**	$ 24,803	$ 24,237	$ 21,227	$ 21,367
Total Loans	**$140,088**	$128,529	$120,856	$108,854	$104,494
Allowance for Credit Losses	**$ 825**	$ 757	$ 732	$ 747	$ 703
Total Assets	**$188,843**	$170,306	$158,586	$145,004	$139,016
Total Shareholders' Equity	**$ 10,225**	$ 12,234	$ 11,910	$ 10,567	$ 9,535

FINANCIAL RATIOS	**2022**	2021	2020	2019	2018
Return on Average Common Equity	**14.59 %**	11.78 %	11.86 %	11.63 %	14.60 %
Return on Average Assets	**0.80 %**	0.82 %	0.84 %	0.79 %	0.90 %
Return on Average Active Patron Investment	**26.07 %**	23.17 %	20.58 %	19.48 %	22.35 %
Net Interest Margin	**1.06 %**	1.10 %	1.07 %	1.02 %	1.09 %
Total Capital Ratio	**14.25 %**	15.63 %	15.22 %	15.86 %	15.58 %
Tier 1 Leverage Ratio	**6.80 %**	7.47 %	7.30 %	7.51 %	7.53 %

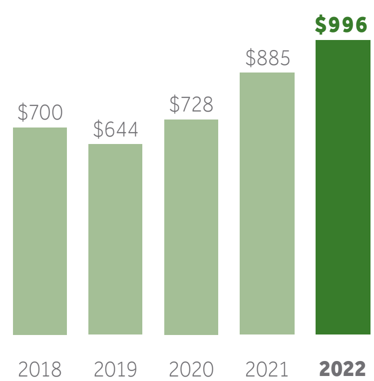
KEY METRICS

TOTAL ASSETS
($ in billions)



NET INCOME
($ in millions)

PATRONAGE DISTRIBUTIONS
($ in millions)



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> *AS AN INTEGRAL MEMBER OF THE FARM CREDIT SYSTEM, OUR MISSION IS TO SERVE AS A RELEVANT AND DEPENDABLE PROVIDER OF CREDIT AND OTHER VALUE-ADDED FINANCIAL SERVICES AND SUPPORT TO AGRICULTURE, RURAL INFRASTRUCTURE AND OTHER RELATED INDUSTRIES FOR THE BENEFIT OF RURAL AMERICA.*

LETTER TO SHAREHOLDERS

TO OUR CUSTOMERS AND OTHER STAKEHOLDERS

On behalf of our entire board of directors and executive team, we are pleased to present CoBank's annual report to stockholders for 2022.

Across almost every key financial measure, CoBank's performance for the year was the best in the history of the enterprise. Loan volume and net income achieved record levels, while patronage distributions reached almost $1 billion, also an all-time high. Credit quality in our loan portfolio remained exceptionally strong. Shareholder returns—as measured by the ratio of patronage to active borrower stock—increased to a record 26.1%.

Above and beyond these numbers, the bank supported customers and rural industries throughout the year in a wide variety of meaningful ways. We served as a vital source of liquidity to the U.S. grain industry, with our seasonal loan volume surging by almost $7 billion in the first quarter to help farmer-owned cooperatives deal with sharply rising commodity prices and meet margin calls. We continued to finance customer investments in our rural infrastructure business, underwriting the deployment of rural broadband, rural water systems and clean energy. We fulfilled a longstanding goal of lowering equity requirements for our members, enhancing their long-term capital efficiency and enabling the retirement of approximately $192 million in common stock. We established a new Sustainability function at CoBank to facilitate our enterprise-wide response to ESG investing and ensure ongoing alignment between the interests of investors and borrowers. Through Sharing Success and other programs, we once again made millions of dollars in contributions to charities, educational institutions and other nonprofit and civic organizations in rural communities across the country.

"ACROSS ALMOST EVERY KEY FINANCIAL MEASURE, COBANK'S PERFORMANCE FOR THE YEAR WAS THE BEST IN THE HISTORY OF THE ENTERPRISE."

KEVIN A. STILL
Board Chair

THOMAS HALVERSON
President & CEO

These results were attained despite market conditions that were enormously volatile and complex. The interest rate environment changed dramatically during the year as the Federal Reserve launched the most aggressive round of interest rate hikes since the early 1980s in order to combat inflation. The onset of a full-scale ground war in Europe between Russia and Ukraine caused massive dislocation in global markets for grain, fertilizer, oil and natural gas. Labor market conditions in the United States remained tight and competition for talent intense. CoBank demonstrated outstanding strength and resilience in the face of these challenges.

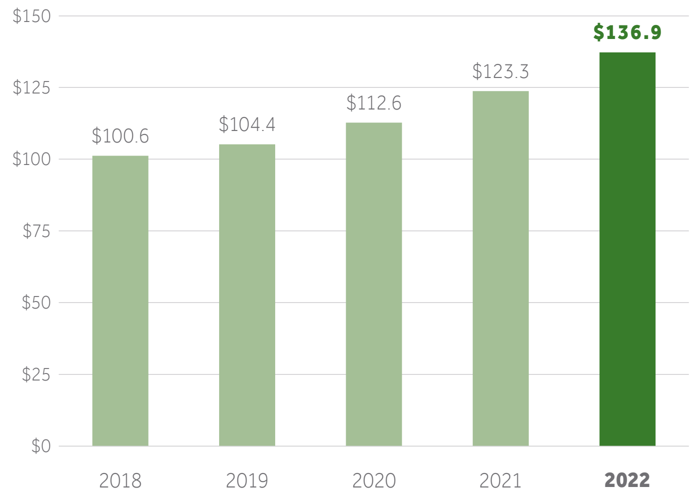
In short, CoBank fulfilled its broad mission of service to a wide range of key stakeholders—as a lender to America's rural industries, as a member of the Farm Credit System, as a caring employer of people and as a corporate citizen. These achievements are worth celebrating, and they are summarized in the pages that follow and in the Sustainability report that we publish as a companion document to this annual report. As usual, we urge all of our customers and other stakeholders to review both reports in detail. We are proud of our results for 2022 and the fact that CoBank remains exceptionally well positioned to continue serving our customers and fulfilling our mission of service to rural America in the years ahead.

FINANCIAL PERFORMANCE

For the full-year 2022, CoBank's average loan and lease volume increased by approximately 11%, to $136.9 billion. Loan growth was robust across all three of CoBank's operating segments, but was most pronounced in our Agribusiness segment due to the impact of elevated ag commodity prices stemming from the Russia-Ukraine war and other factors. As shown on the nearby chart, CoBank's average loan volume has grown by 36% since 2018. We believe that is a reflection of the strong reputation CoBank has built as a reliable source of debt capital that is committed to the long-term success of its customers.

"COBANK REMAINS EXCEPTIONALLY WELL POSITIONED TO CONTINUE SERVING OUR CUSTOMERS AND FULFILLING OUR MISSION OF SERVICE TO RURAL AMERICA."

AVERAGE LOAN VOLUME ($ in billions)



Net income for CoBank rose approximately 10% in 2022 to $1.449 billion, from $1.314 billion in 2021. The primary driver of the increase was higher net interest income, which resulted from the increase in average loan volume described above, as well as strong fee income and a number of other favorable factors.

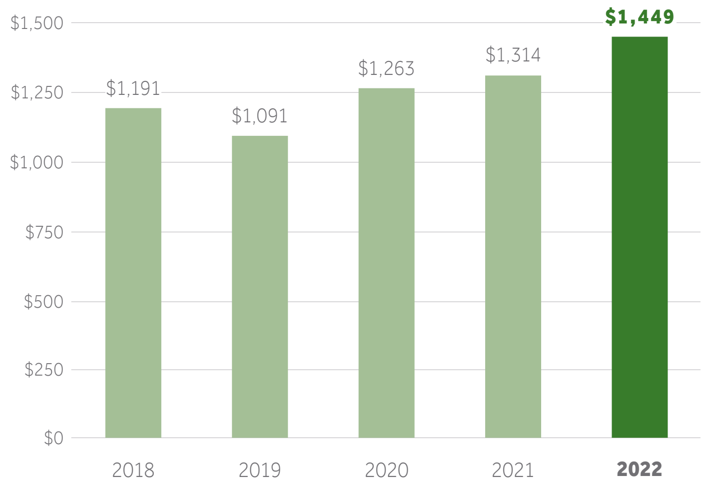
Credit quality in CoBank's loan portfolio remained strong throughout 2022. At year end, 96.7% of our commercial loans were classified as Acceptable (the highest category of loan quality), compared with a 10-year trailing average of 96.0%. Nonaccrual loans at December 31, 2022 were 0.1% of total loans, identical to year-end 2021. The bank's provision for loan losses was $111 million for 2022 compared to $18 million in 2021 and increased primarily due to higher provisioning resulting from the higher loan volume experienced during the year. CoBank's allowance for credit losses, which protects the bank's capital base against losses inherent in our loan portfolio, totaled $825 million as of December 31, 2022, or 1.24% of nonguaranteed loans when loans to Farm Credit associations are excluded.

PATRONAGE DISTRIBUTIONS

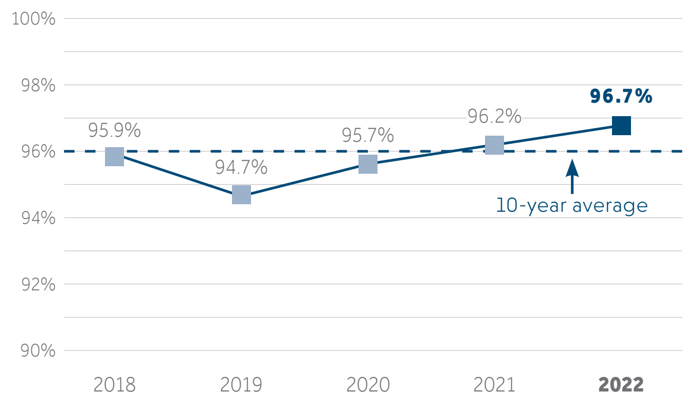
For 2022, patronage distributions will total $996 million—$857 million in cash plus an additional $139 million in equity. This year's patronage payout is the highest in the history of the bank and includes $149 million in all-cash special patronage approved by our board in December 2022.

The adjacent table details 2022 patronage distributions by customer or loan type under our various capital plans and patronage programs. Agribusiness, communications and project finance borrowers earned 119 basis points of patronage for the year, while rural electric and water customers earned 96 basis points.

NET INCOME ($ in millions)



CREDIT QUALITY* (% Acceptable at Period End)



* Commercial loan portfolio.

2022 PATRONAGE DISTRIBUTIONS BY POOL ($ in millions)

	Program Patronage	Special Patronage	Total Patronage	BPS*
Agribusiness, Communications and Project Finance	$ 308	$ 51	$ 359	119.0
Electric and Water	$ 108	$ 20	$ 128	96.0
Farm Credit Affiliated Associations	$ 282	$ 56	$ 338	54.0
Loans Purchased from Farm Credit Institutions	$ 133	$ 20	$ 153	114.0
Nonaffiliated Farm Credit and Other Financing Institutions	$ 16	$ 2	$ 18	34.5

* Basis points of qualifying loan volume.

Affiliated Farm Credit associations earned 54 basis points of all-cash patronage under their capital plan.

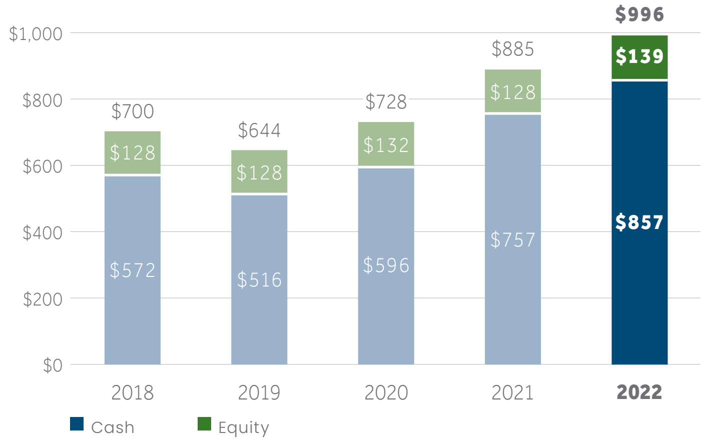
Our board and executive team are committed to delivering tangible economic value to our customer-owners through patronage and to growing that value over time. Over the past five years, the bank has distributed approximately $3.3 billion in cash patronage, along with an additional $655 million in bank equity. This is one of the most powerful ways the bank delivers value to its shareholders as a customer-owned financial cooperative.

CAPITAL POSITION

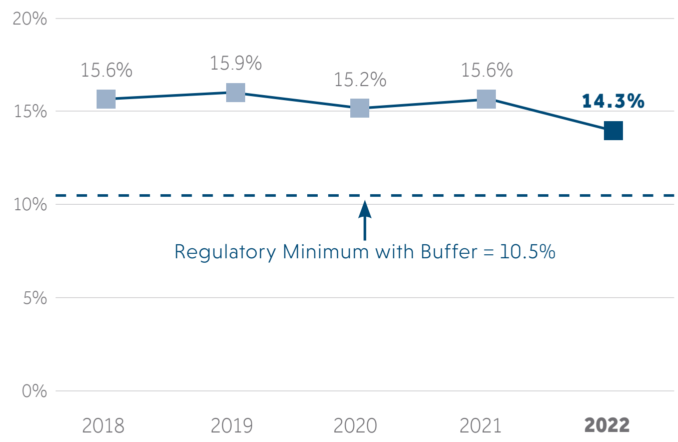
Throughout 2022, CoBank's capital levels remained well in excess of regulatory minimums. At year-end, the bank's total capital ratio was approximately 14.3%, compared with the 8.0% minimum (10.5% inclusive of the capital conservation buffer) established by the Farm Credit Administration, the bank's independent regulator.

A key accomplishment for our board and management team in 2022 was reducing equity requirements for customer-owners. After conducting a thorough review of our capital strategy, we determined that the bank could prudently migrate to moderately lower capital ratios over time while still maintaining a sufficient capital base to support appropriate levels of business risk and ensure our ability to meet the future borrowing needs of our customers. That led to a stockholder vote in June 2022 through which our capitalization bylaws were amended to lower target equity ranges for customer-owners, followed by a unanimous decision by our board in August 2022 to reduce equity targets.

PATRONAGE DISTRIBUTIONS ($ in millions)



TOTAL CAPITAL RATIO



SHAREHOLDERS' EQUITY ($ in millions)	2018	2019	2020	2021	**2022**
Preferred Stock	$ 1,500	$ 1,500	$ 1,500	$ 1,902	**$ 1,633**
Common Stock	$ 3,416	$ 3,622	$ 3,918	$ 4,013	**$ 4,000**
Retained Earnings	$ 4,982	$ 5,351	$ 5,804	$ 6,164	**$ 6,519**
Accumulated Other Comprehensive (Loss) Income	$ (363)	$ 94	$ 688	$ 155	**$ (1,927)**
Total Shareholders' Equity	$ 9,535	$ 10,567	$ 11,910	$ 12,234	**$ 10,225**

Cooperatives and other patronage-eligible commercial borrowers had their equity targets reduced from 8% to 7%, while affiliated Farm Credit associations had their targets reduced from 4% to 3%. We are grateful for the support of our customer-owners in successfully completing this important initiative.

As a result of these decisions, the bank will be retiring approximately $192 million in stock to customer-owners in March 2023, in addition to patronage distributions. (Our typical annual level of stock retirements is approximately $45 million.) More importantly, it will cost our customers meaningfully less to fully capitalize their loan positions with CoBank over the long term. We expect our capital ratios to decline moderately in coming periods as a result of these changes.

In addition to the above, CoBank successfully executed a number of transactions in late 2021 and 2022 in the area of third-party capital. We issued a total of $825 million in new preferred stock and redeemed $669 million in previously issued preferred stock. Taken together, these actions meaningfully reduced our overall cost of capital.

Customer-owners will notice that total shareholders' equity for CoBank declined to $10.2 billion as of year-end 2022, from $12.2 billion at the end of 2021. The decrease was primarily the result of changes in the valuation of the fixed-rate liquidity investments we hold on our balance sheet that were driven by interest rate fluctuations during the year. While the unrealized losses on investment securities resulted in a reduction of shareholders' equity, they did not impact earnings or regulatory capital. Our current intention is not to sell these assets; therefore, we do not expect to realize actual losses in connection with these securities.

OPERATING EXPENSES & PLATFORM INVESTMENTS

As a relationship lender focused on a small number of specialized industries, CoBank has always relied heavily on experienced bankers and other high-quality professionals to serve customers with excellence and deliver on its value proposition. However—like all financial services providers—we are undergoing a transition in our business through which technology platforms are increasingly central to product delivery and the customer experience. We need great people and great platforms to remain competitive.

REDUCED EQUITY TARGETS

Customer Type	Prior Equity Target	New Equity Target
Cooperatives & Other Patronage-Eligible Commercial Borrowers	8.00%	7.00%
Affiliated Farm Credit Associations	4.00%	3.00%
Nonaffiliated Farm Credit Institutions	4.00%	3.25%

"WE ARE UNDERGOING A TRANSITION IN OUR BUSINESS THROUGH WHICH TECHNOLOGY PLATFORMS ARE INCREASINGLY CENTRAL TO PRODUCT DELIVERY AND THE CUSTOMER EXPERIENCE."

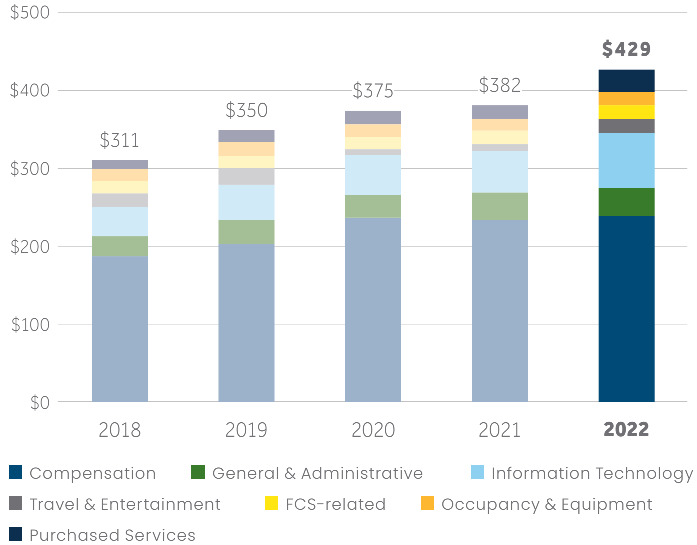
In 2022, we increased investments in both people and systems in support of this long-term objective. Operating expenses for the bank rose by 12% to $429 million. (This number excludes non-discretionary spend on insurance premiums to the Farm Credit System Insurance Corporation (Insurance Fund), which totaled $151 million for 2022.) As shown in the nearby bar chart, the largest year-over-year increase occurred in the area of information technology, which increased 26% to $69 million. This increase reflected an intentional effort by management to accelerate technology spend in light of the bank's strong overall financial performance during the year. In addition, we made a series of enhancements to our compensation structure to address the heightened level of competition for talent in an extremely tight labor market, including market-based pay adjustments, increased merit ranges and increased short-term incentive targets for many of our associates. We also augmented the bank's authorized complement in order to increase our capacity and reduce burnout levels across our work force. We strongly believe these measures have supported our ongoing ability to serve customers with excellence and, as importantly, helped to preserve CoBank's reputation in the marketplace as a high-quality employer.

Despite the increase in operating expenses, our operating expense ratio remained in-line with historical averages at 21.0% and well below the 25% baseline established by our board. We continue to benefit from the innate efficiency of CoBank's business model, including our membership in the Farm Credit System and the System's favorable access to funding as a Government Sponsored Enterprise.

OPERATING ENVIRONMENT

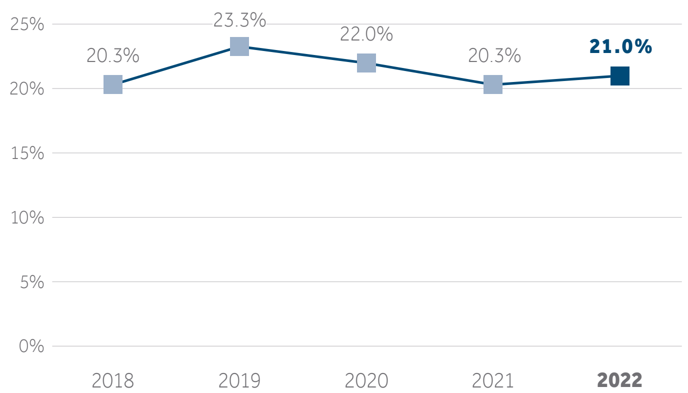
As usual, by the time this annual report is published we will be well into 2023, and our board and management team will be intently focused on the year ahead and the opportunities and challenges facing CoBank and its customers. The operating environment for business enterprises promises to be as complex as ever in 2023, requiring thoughtful attention from boards and management teams and a combination of sound strategic planning and precise execution of business plans. From CoBank's vantage point, we believe there are a number of salient marketplace trends that will continue to impact our business in the year ahead, including the following:

OPERATING EXPENSES* ($ in millions)



* Excludes Insurance Fund premiums.

OPERATING EXPENSE RATIO (%)*



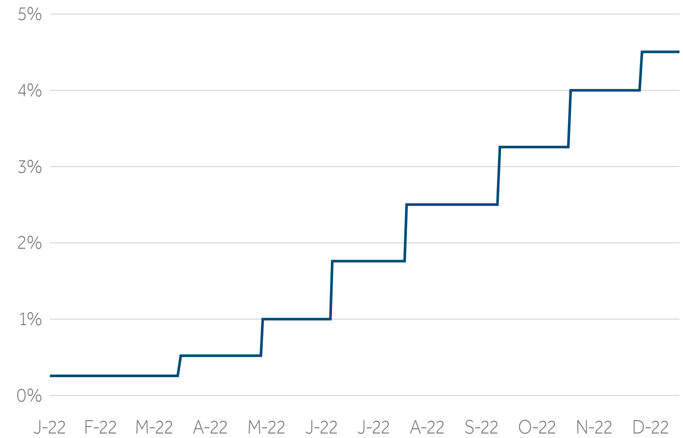
* Operating expenses, excluding Insurance Fund premiums / (net interest income + net fee income).

- Inflation, interest rates and the cost of borrowing: It is fair to say that 2022 marked the end of an era for commercial borrowers here in the United States. After the Great Recession of 2008-2009, major central banks around the world adopted a new, highly interventionist posture that radically changed the marketplace for capital. Thanks to near-zero interest rates and quantitative easing programs, debt became extremely low cost for all types of borrowers, including governments, consumers and businesses alike. That environment persisted, more or less unchanged, for the ensuing 14 years. However, the onset of high levels of inflation in early 2022 forced the U.S. Federal Reserve onto an aggressive tightening path, as evidenced by seven rate hikes totaling 425 basis points over the course of the year.

  It has been the steepest series of rate increases since the early 1980s, and it signals a paradigm shift in the marketplace for debt capital. Businesses may choose to borrow more prudently, and to be more selective about investments they finance with debt. This change also has implications for the financial services industry, given the impacts it may have on demand for debt, interest rate risk management and other key business considerations.

- ESG: In last year's annual report, we devoted substantial space in this letter to Enivronmental, Social and Governance (ESG) investing and its implications for CoBank. As we noted then, investors around the world are increasingly prioritizing climate change as a criterion for decisions around which assets to buy and sell, in hopes of driving the transition of the global economy into a lower-carbon future. Banks and other financial services institutions providing capital to industry are in the middle of this trend.

FEDERAL RESERVE POLICY RATE—2022



"IT HAS BEEN THE STEEPEST SERIES OF RATE INCREASES SINCE THE EARLY 1980S, AND IT SIGNALS A PARADIGM SHIFT IN THE MARKETPLACE FOR DEBT CAPITAL."

In early 2022, CoBank established an in-house Sustainability function, including the appointment of a Chief Sustainability Officer and other support staff. This position reports directly to the President & Chief Executive Officer and is charged with coordinating the development of ESG-related plans across multiple aspects of our business, including products and services, enterprise-risk management, and reporting. In 2023, we are issuing our first-ever Sustainability report as a companion document to our annual report. It represents an evolution of the Corporate Social Responsibility report we have published for many years and includes data about CoBank's carbon footprint, employee demographics and other information that is becoming standard in the emerging area of ESG reporting.

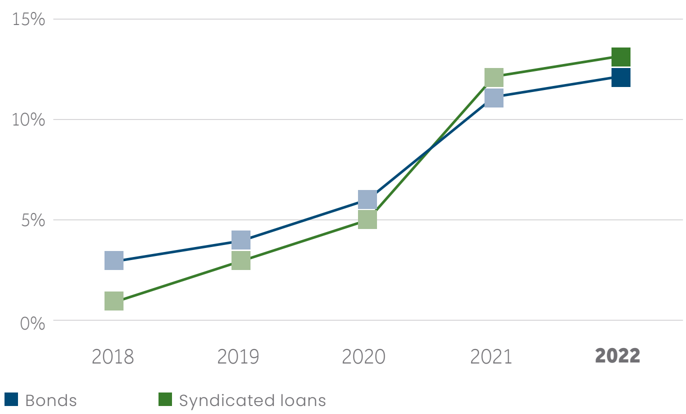
Many financial institutions around the world have established formal targets and timelines through which they intend to intentionally reduce the carbon emissions in their loan portfolios. Under the guidance of our board and executive team, CoBank is deliberately choosing a different path. Many of the industries we finance, including agriculture and energy, are carbon-intensive in nature. We have an explicit mandate to reliably fulfill their need for debt capital. Instead, our objective will be to partner with our customers as they chart their own journeys toward a sustainable future. We think this approach is the best way for CoBank to fulfill our mission of service as a customer-owned financial cooperative and as a member of the Farm Credit System.

At the same time, we do expect investor interest in ESG assets to continue to grow over time. As illustrated in the nearby chart, sustainable debt instruments have grown to represent 13% of all syndicated loans from basically zero only a few years ago. However this trend evolves, we strongly believe CoBank will benefit from having our Sustainability office in place to guide our future actions and decisions in this area.

"OUR OBJECTIVE WILL BE TO PARTNER WITH OUR CUSTOMERS AS THEY CHART THEIR OWN JOURNEYS TOWARD A SUSTAINABLE FUTURE."

SUSTAINABLE DEBT INSTRUMENTS*

(share of global issuances)



* YTD 3Q22
Source: McKinsey & Company

One thing that will remain constant is our strong commitment to corporate philanthropy and support for charitable organizations in communities where our customers, employees and other key stakeholders live and work. During 2022, the bank contributed approximately $14.5 million to nonprofit, civic and educational institutions around the country, most of them serving rural areas. This is a critical aspect of mission fulfillment for CoBank beyond the support we provide to rural America through our lending and other core business activities.

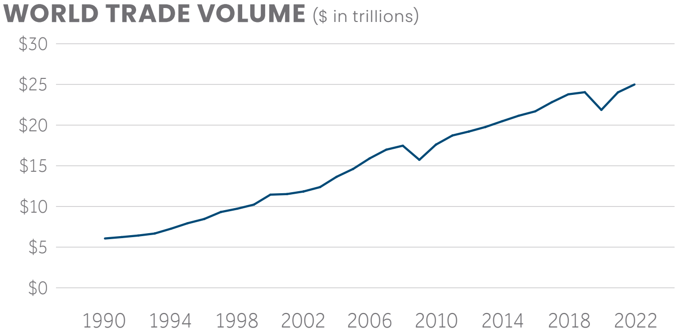
- Divided government & rural policy: Effective January 2023, the United States has returned to divided government and will remain in that state for at least the next two years. We can expect political gridlock to be a dominant feature of federal policymaking as a result.

  It is reasonable to worry that rural policy, including the all-important passage of a new Farm Bill, may end up being a casualty of the current political environment. CoBank and its fellow institutions across the Farm Credit System will be actively engaged in advocating for sound rural policy. We will also actively partner with our customers and trade organizations in the industries we finance to ensure that rural interests are kept in mind as legislation and regulation are developed in the coming period.

- "Deglobalization" and the U.S. rural economy: From the standpoint of the global economy, the last three decades have proven to be an era of remarkable liberalization and economic integration. The fall of the Berlin Wall in 1989 and China's decision to open its economy to western investment in the 1990s helped pave the way for this era of globalization, which drove huge increases in the volume of global trade and much higher overall levels of prosperity. Here in the United States, we experienced both positive impacts (e.g. low inflation) and negative impacts (e.g. the loss of manufacturing jobs) as a result of globalization. On balance, however, it seems clear that our country was a net beneficiary of this trend. Certainly American agriculture was, experiencing substantial growth in foreign demand for a wide variety of agricultural and food products generated by U.S. farmers, ranchers and farmer-owned cooperatives.

"COBANK AND ITS FELLOW INSTITUTIONS ACROSS THE FARM CREDIT SYSTEM WILL BE ACTIVELY ENGAGED IN ADVOCATING FOR SOUND RURAL POLICY."

WORLD TRADE VOLUME ($ in trillions)



Source: World Bank

Today, many are wondering if globalization is set to go into reverse. The global economy has suffered multiple systemic shocks, including the pandemic, the war in Ukraine and increased tensions between the U.S. and China. The fallout from these events has cast doubt on the security of international supply chains and the reliability and wisdom of trade dependency, especially of critical goods, on real or potentially hostile foreign powers.

From today's standpoint, it is not clear what direction the world will take—what new construct will replace the integrated, liberalized global economic system that developed over the past 30 years. This is one of the great questions before us, and its answer has significant impacts on industries like agriculture that are deeply intertwined with global markets.

OUR COMMITMENT

Our board and executive team remain fully committed to the mission of the bank and the Farm Credit System, as do the more than 1,100 team members at CoBank who are fully invested in the success of our customers and of America's rural communities.

As always, we remain grateful for the enormous trust our customers place in CoBank as their financial partner. We thank you for your support and look forward to reporting back about our progress against these mission service and commercial goals.

KEVIN A. STILL
Board Chair

THOMAS HALVERSON
President & CEO

"OUR BOARD AND EXECUTIVE TEAM REMAIN FULLY COMMITTED TO THE MISSION OF THE BANK AND THE FARM CREDIT SYSTEM."

2023 BOARD OF DIRECTORS

KEVIN A. STILL
Chair

Occupation: Agribusiness Cooperative Management
Hometown: Carmel, IN

JON E. MARTHEDAL
1st Vice Chair

Occupation: Farming
Hometown: Fresno, CA

BRANDON J. WITTMAN
2nd Vice Chair

Occupation: Electric Cooperative Management
Hometown: Billings, MT

DUANE R. ANDERSON
Director

Occupation: Agribusiness Management
Hometown: Seneca, KS

MATTHEW W. BEATON
Director

Occupation: Farming
Hometown: East Sandwich, MA

ROBERT M. BEHR
Director

Occupation: Retired, Agribusiness Cooperative Management
Hometown: New Smyrna Beach, FL

MICHAEL S. BROWN
Director

Occupation: Retired, Commercial Banking
Hometown: San Diego, CA

RUSSELL G. BROWN
Director

Occupation: Retired, Community Banking
Hometown: Warsaw, VA

WILLIAM M. FARROW, III
Director

Occupation: Retired, Commercial Banking
Hometown: Evanston, IL

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DAVID J. KRAGNES
Director

Occupation: Retired, Farming
Hometown: Felton, MN

MICHAEL W. MARLEY
Director

Occupation: Farming
Hometown: Roswell, NM

ROBERT (MAC) N. McLENNAN
Director

Occupation: Electric Cooperative Management
Hometown: Grand Forks, ND

GARY A. MILLER
Director

Occupation: Electric Cooperative Management
Hometown: Douglasville, GA

CATHERINE MOYER
Director

Occupation: Rural Communications Management
Hometown: Ulysses, KS

SCHEHERAZADE S. REHMAN
Director

Occupation: Professor, International Business & Finance
Hometown: Washington, D.C.

EDGAR A. TERRY
Director

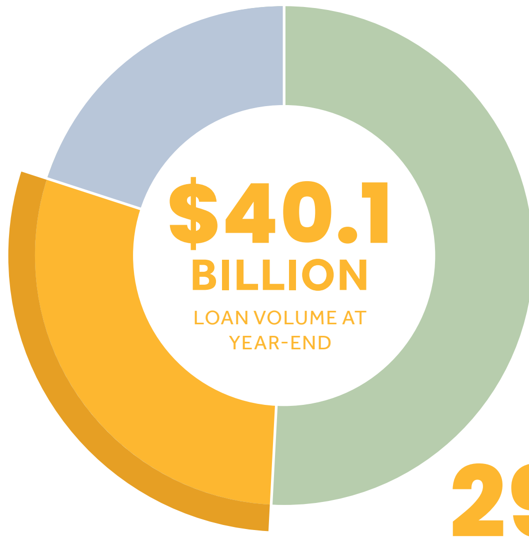
Occupation: Farming
Hometown: Ventura, CA

SUREENA S. BAINS THIARA
Director

Occupation: Farming, Crop Insurance Service
Hometown: Yuba City, CA

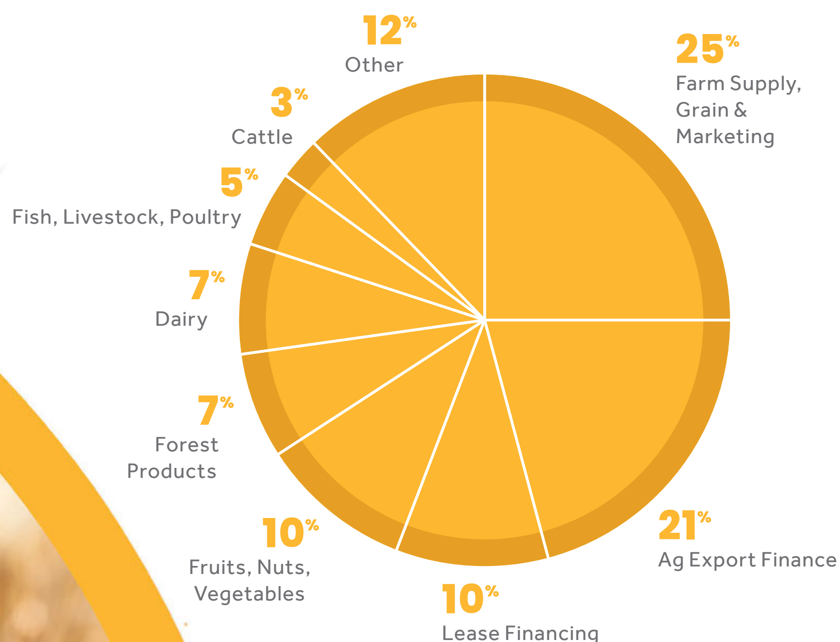
AGRIBUSINESS PORTFOLIO

CoBank's Agribusiness operating segment includes lending to regional and corporate agribusiness customers, export finance customers and leasing customers. It serves cooperatives and other customers involved in a wide variety of industries, including grain handling and marketing, farm supply, food processing, dairy, livestock, fruits, nuts, vegetables, cotton, biofuels and forest products.

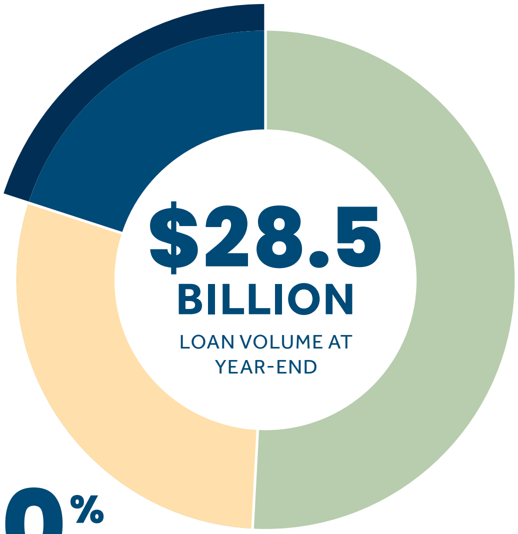


29%
OF TOTAL LOAN PORTFOLIO

FOR THE YEAR ($ in millions)	**2022**	2021	2020	2019	2018
Period-end Loans	**$ 40,098**	$ 38,094	$ 36,103	$ 33,168	$ 32,432
Average Loans	**$ 43,323**	$ 37,656	$ 33,292	$ 32,119	$ 31,604
Net Income	**$ 774**	$ 677	$ 608	$ 537	$ 575



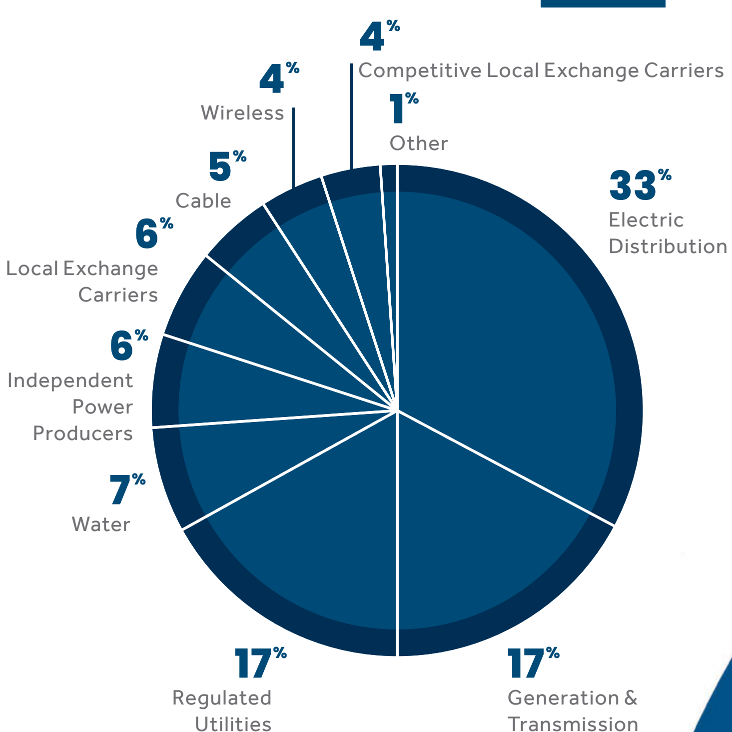
RURAL INFRASTRUCTURE PORTFOLIO



20%
OF TOTAL LOAN PORTFOLIO

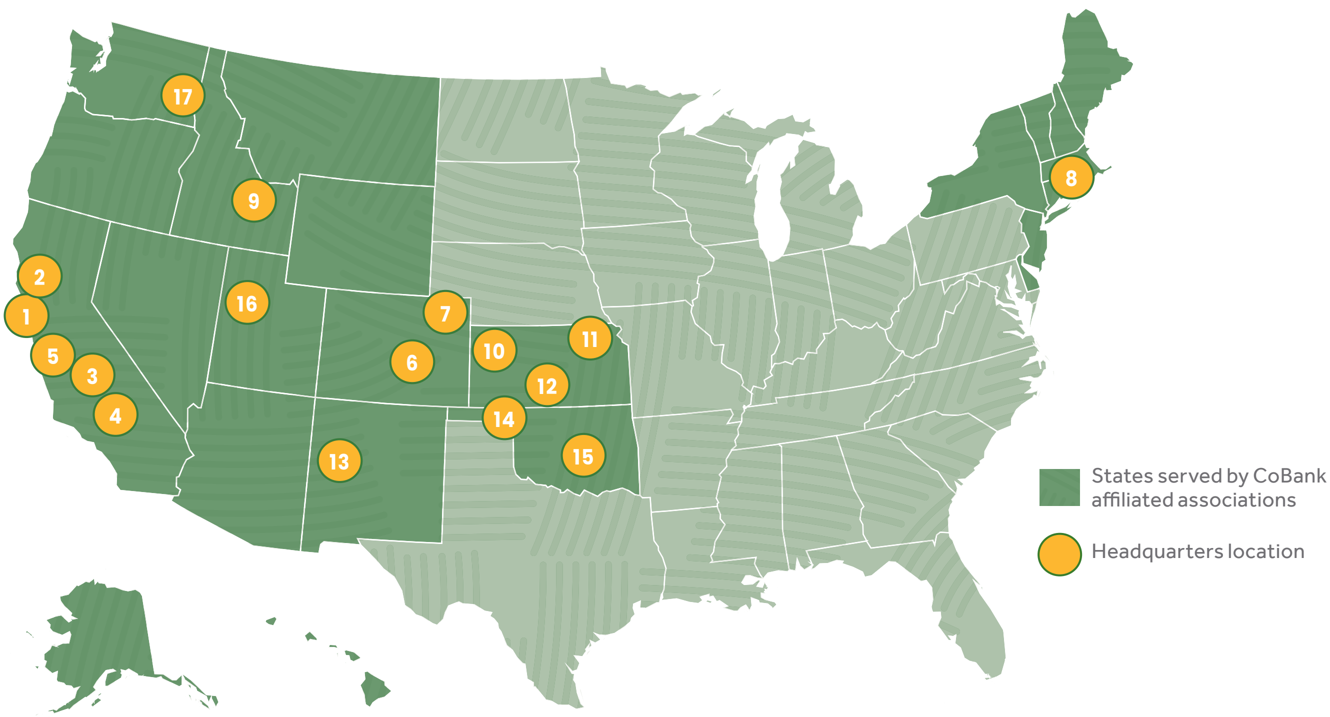
CoBank's Rural Infrastructure operating segment includes lending to rural infrastructure borrowers across the United States. It serves rural utilities and other customers across a wide variety of industries, including electric generation, transmission and distribution cooperatives; midstream energy and gas pipeline providers; water and waste companies; broadband, data centers, wireline, cable and wireless communications service providers; and rural health care and other community facilities.

FOR THE YEAR ($ in millions)	**2022**	2021	2020	2019	2018
Period-end Loans	**$ 28,461**	$ 24,803	$ 24,237	$ 21,227	$ 21,367
Average Loans	**$ 25,734**	$ 24,379	$ 22,919	$ 20,919	$ 20,919
Net Income	**$ 423**	$ 392	$ 398	$ 331	$ 347



FARM CREDIT BANKING GROUP

AFFILIATED FARM CREDIT ASSOCIATIONS



CALIFORNIA

1 American AgCredit
SANTA ROSA

2 Farm Credit Services of Colusa-Glenn
COLUSA

3 Fresno Madera Farm Credit
FRESNO

4 Golden State Farm Credit
KINGSBURG

5 Yosemite Farm Credit
TURLOCK

COLORADO

6 Farm Credit of Southern Colorado
COLORADO SPRINGS

7 Premier Farm Credit
STERLING

CONNECTICUT

8 Farm Credit East
ENFIELD

IDAHO

9 Idaho AgCredit
BLACKFOOT

KANSAS

10 Farm Credit of Western Kansas
COLBY

11 Frontier Farm Credit
MANHATTAN

12 High Plains Farm Credit
LARNED

NEW MEXICO

13 Farm Credit of New Mexico
ALBUQUERQUE

OKLAHOMA

14 Farm Credit of Western Oklahoma
WOODWARD

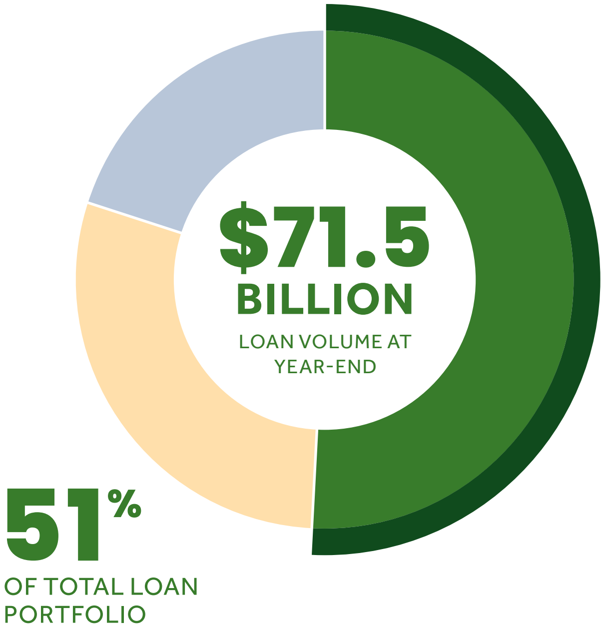
15 Oklahoma AgCredit
EDMUND

UTAH

16 Western AgCredit
SOUTH JORDAN

WASHINGTON

17 AgWest Farm Credit
SPOKANE

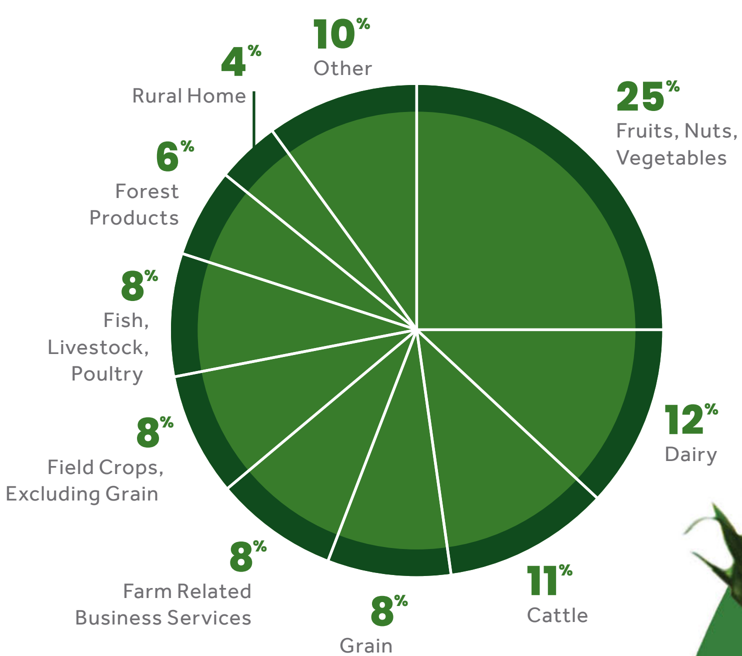


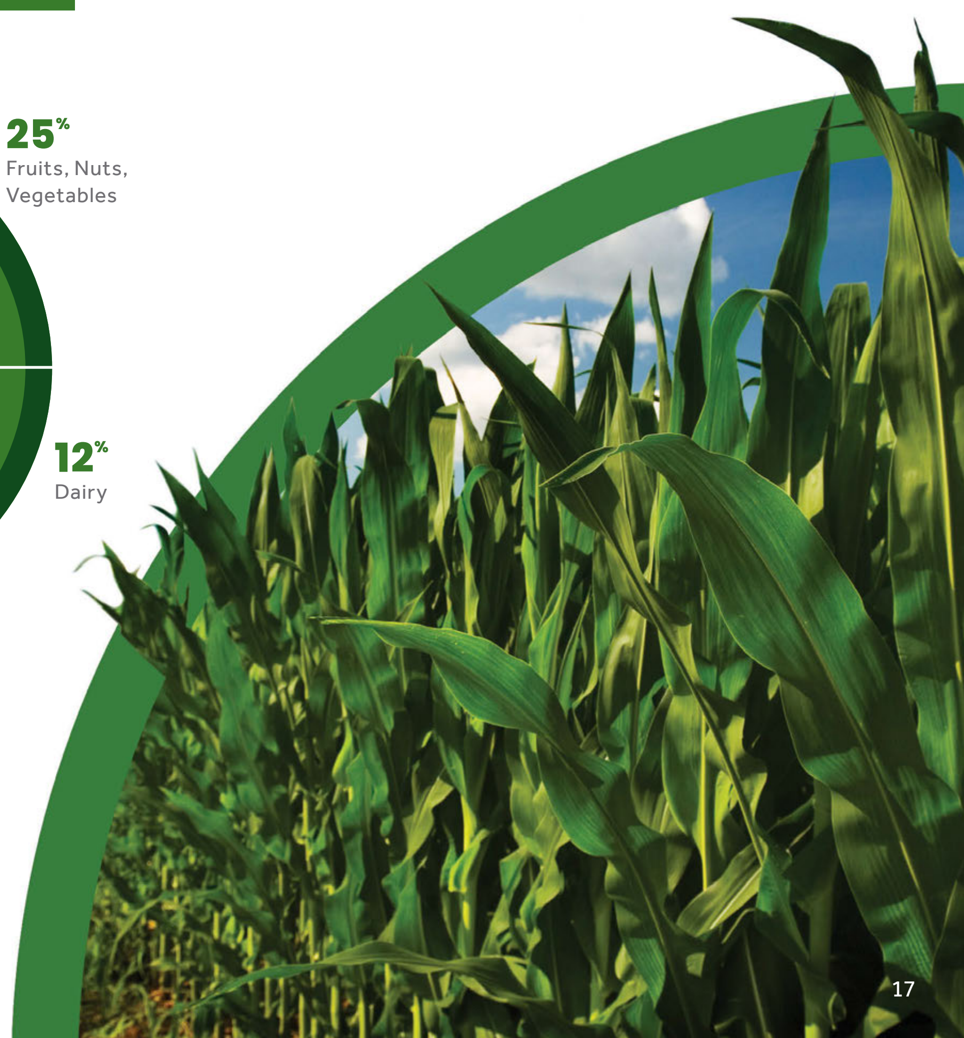
FARM CREDIT BANKING PORTFOLIO

In addition to providing loans to cooperatives and other commercial customers in all 50 states, CoBank serves as a funding bank for 17 affiliated Farm Credit associations across the country. Those associations provide loans and financial services to more than 76,000 farmers, ranchers and other rural borrowers in 23 states. They serve a diverse array of industries, from fruits, nuts and vegetables to grains and other row crops to dairy, beef, poultry and forest products.

CoBank provides these association customers with wholesale financing as well as other value-added products and services. Our relationships with these associations provide the bank with added lending capacity by serving as participation partners on large credit transactions. CoBank also derives additional value from purchasing participations in their loans.

FOR THE YEAR ($ in millions)	**2022**	2021	2020	2019	2018
Period-end Loans	**$ 71,529**	$ 65,632	$ 60,516	$ 54,459	$ 50,695
Average Loans	**$ 67,855**	$ 61,304	$ 56,423	$ 51,313	$ 48,121
Net Income	**$ 252**	$ 245	$ 257	$ 223	$ 269





GOLDEN STATE FARM CREDIT

California

Community is at the center of Golden State Farm Credit's business model. The success of its customers is imperative to a strong, thriving community. As a cooperative lender, it is committed to its members, who are also its neighbors.

Golden State is a California-based Farm Credit Association providing financial services for ranchers and farmers. The cooperative was formed in 2014 through a merger of Northern California Farm Credit and the Federal Land Bank Association of Kingsburg. Today, it is a $2.1 billion organization serving seven different counties—primarily dairy and tree nut farmers.

More than just a lender, Golden State uses financing to grow and support ag communities that might otherwise not survive without these crucial loans. As a mission-based co-op, it focuses on investing back into the community.

With CoBank's support, Golden State provided funding for a startup FFA program at a local school and assisted with a program for special needs students, pairing them with ag students to help raise and show livestock for local fairs. Golden State has also gifted $35,000 to local food banks to help combat food insecurity.

"We are committed to serving our members and their families through a personalized lending experience. And the loans we provide don't just affect the farmers we finance. They provide jobs to the people living in the rural communities, which ensure that kids remain in local schools. It's important for us to support these small communities so they can be sustainable," said Rob Faris, Golden State's CEO.

Golden State is a trusted community lender, and through its partnership with CoBank, it is able to tackle larger deals and projects. It has experienced significant organic growth in recent years. Currently, they are financing two large nut processor expansion projects focused on automating operations. Supporting borrowers by financing projects of this nature is imperative as companies look to streamline processing, minimizing labor needs—and in a time where finding labor can be a challenge, the automation to replace manual work is crucial.

"CoBank is absolutely a partner we must have in our pocket every day to fund and deliver loans to our customers. Having a strong, healthy Farm Credit bank to deliver on the services we need in a timely manner has really contributed to our success," Faris said.

Just as CoBank is an integral part of Golden State's business model, Golden State offers an abundance of support to its members and local organizations. Youth-based programs, such as 4H and FFA, are especially importantto the association, and Golden State invests $75,000 into county fairs and youth livestock programs every year. "We are passionate about providing learning opportunities for the next generation of ag leaders, which is why we invest money and time to support them. The only way Golden State will continue its success is to invest in the future of agriculture," Faris said.

1 2 3 4 5 6 7

1 | Ali Enos
Chief Risk Officer
Golden State

2 | Brendan Ronayne
VP
CoBank

3 | Zach Clark
CFO
Golden State

4 | Rob Faris
CEO
Golden State

5 | Claire Trudo
Sr. Relationship Mgr.
CoBank

6 | Michael Rico
Chief Lending Officer
Golden State

7 | Justin Nunes
Chief Credit Officer
Golden State

RURAL BUSINESS INVESTMENT COMPANIES
Nationwide

CoBank has a broad mission to support agriculture and rural communities. Financing agribusinesses and rural infrastructure providers is the longstanding, primary pillar of our delivery on this mission, but the bank's financial commitment extends far beyond the loans, leases and financial services it provides.

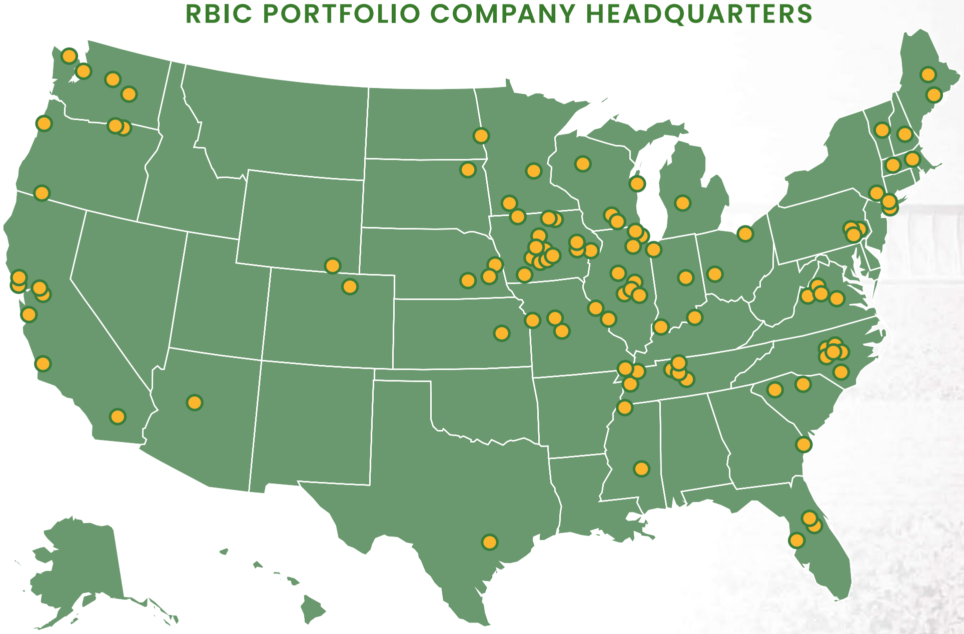
Since 2014, CoBank has committed a combined $220 million to 13 independently managed Rural Business Investment Companies (RBICs), investment funds that in turn provide growth capital to rural-based businesses, encouraging further economic development and additional employment opportunities in our country's often under-resourced rural communities. By 2022, after just eight years, RBICs had raised more than $1 billion, with CoBank and 22 partner Farm Credit organizations providing more than 70% of that capital.

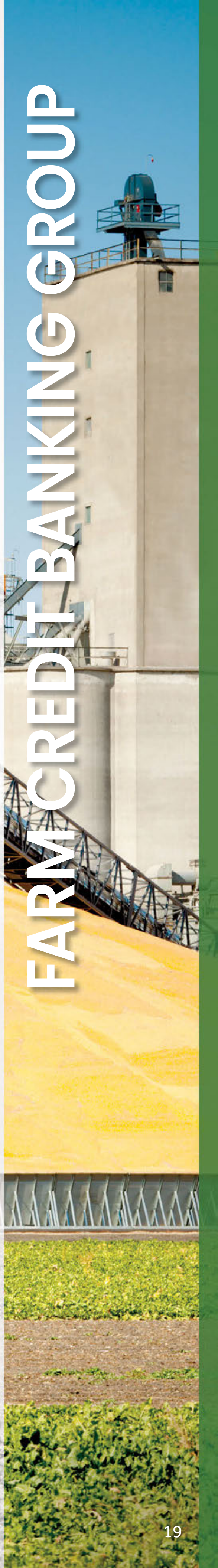
"Rural America is home to a plethora of businesses and entrepreneurs facing uncertain access to capital, making it difficult for them to grow their operations and achieve their business goals," said David Dornbirer, vice president of mission investments for CoBank. "Through the investment funds CoBank and Farm Credit help finance, these rural enterprises have greater opportunity to thrive and ultimately deliver economic benefits to their communities, including the farmers and ranchers who live there."

RBICs are licensed by the USDA as part of its Rural Business Investment Program, designed to promote economic development and job creation in rural areas. Each RBIC has an individualized investment thesis, strategy and focus. For example, the Innova Ag Innovation Fund targets technology-enabled products and services that provide solutions for farmers and ranchers. Specific businesses that have received funding from CoBank's portfolio of RBICs include ag processing, genome mapping, animal nutrition, and animal and alternative protein companies, as well as rural healthcare companies that aim to lower the cost for and/or improve access to care. In all, more than 100 businesses have received an influx of capital to fund their growth, as depicted below.

"We view our community investment strategy as an integral and complementary path to supporting America's rural economies, which is a key part of our mission," said Andrew Jacob, CoBank's COO and longstanding RBIC program advocate. "Our goal is to enrich and broaden CoBank's mission service to rural America, generate additional value for our customer-owners and support appropriate risk-adjusted earnings over the life of each fund. We are focused on supporting an increase in rural prosperity through access to capital and continuing partnerships through our cooperative business model with Farm Credit and other like-minded investors."

RBIC PORTFOLIO COMPANY HEADQUARTERS





REGIONAL AGRIBUSINESS

COOPERATIVE FARMERS ELEVATOR

Rock Valley, Iowa

The Cooperative Farmers Elevator is a shining example of resilience. CFE provides reliability for its customers and demonstrates continuous strength within its leadership, while showcasing its extreme durability—withstanding economic and social changes that naturally occur during a long tenure in business.

CFE was established in 2015 by merging the Cooperative Elevator Association, Farmers Elevator Cooperative and United Farmers Cooperative. However, each of those entities was created more than 100 years ago—with the earliest taking root in 1899—making CFE nearly 125 years old.

Today, CFE is a progressive, farmer-owned cooperative, serving local farmers and rural business owners in agronomy, feed, grain and lumber. CFE has locations in 25 communities throughout Iowa, Minnesota and South Dakota.

CFE is an important pillar for the communities it serves. The co-op provides service to approximately 3,300 members, and because it is member-owned, it is imperative that it continuously meets the needs of its customers. CFE also provides hundreds of jobs, making it the largest employer in many of its communities. This dynamic creates a crucial, symbiotic relationship for the members, employees and CFE to build and maintain strong economies.

"Everything is centered on the member, while also keeping our employees top-of-mind," said Rob Jacobs, CFE's CEO. "It's vital we reinvest back into the company to ensure we are around for the next 125 years. It's also important that we employ outstanding people—they are the heartbeat of what we do."

Supply chain issues leading to shortages, inflation and higher capital demands have made it difficult for almost every business, but CFE believes that each challenge also brings opportunities.

In December of 2021, CFE requested CoBank increase their operating debt due to increasing commodity prices and expected delays in sales deliveries. CoBank increased the line of credit by late December, allowing CFE to continue to provide its patrons uninterrupted ability to sell grain in a volatile market.

"If you execute well and are aware of what is happening, you can take these challenges and turn them into experiences to grow. It takes collaboration among trusted partners and staff, but it's possible you might come out stronger," Jacobs said.

CoBank and CFE have built a strong relationship, creating open communication and opportunities to share knowledge and execute business plans efficiently. Currently, CoBank finances an operating line of credit and term financing for CFE.

CFE recognizes the importance of partnering with a lender that understands the agricultural business, and appreciates that CoBank and Farm Credit Leasing can act quickly in the face of a potential problem. CoBank and CFE have created a longstanding relationship with mutual trust, which will continue to flourish for many years to come.

1 2 3 4 5

1 | Todd Netten
CFO
CFE

2 | Dave Muilenburg
COO
CFE

3 | Mark Bremer
VP of Board of Directors
CFE

4 | Rob Jacobs
CEO
CFE

5 | Matt Hellwig
Lead Relationship Mgr.
CoBank

THE COOPERATIVE FINANCE ASSOCIATION

COOPERATIVE FINANCE ASSOCIATION

Kansas City, Missouri

Technology is a vital tool for nearly every business to maintain an efficient workflow. The Cooperative Finance Association is embracing and utilizing technology to deliver its products and services completely electronically, streamlining the process for its members as it serves as a reliable lender for the agricultural industry.

CFA was established in 1943. Today, it has approximately 200 members, consisting of other agricultural cooperatives throughout the United States. CFA products include operating and term loans, single-purpose inventory financing and point-of-sale production agriculture financing.

Currently, CFA is undertaking a technology platform update, which will prioritize the security of its customers while making the application easier to navigate on all devices. The association also modernized its signature collection process—now allowing co-op customers to obtain customer signatures electronically—which was an imperative shift during COVID-19. Additionally, CFA has cut down tremendously on its use of paper, creating a more sustainable business model for future generations.

Despite utilizing an all-electronic delivery model, CFA recognizes and adapts to its unique and traditional membership.

"Most financial providers are abandoning in-person services, but we still support and encourage all types of contact with our customers," said Ross Johnson, CFA's CEO. "We provide the technology platform to service the loans, but our cooperative employees are still customer-facing. Most of the co-ops we service still appreciate phone calls and face-to-face interactions. And we value the relationships we have built with the local co-ops and their team members."

CFA strives to craft specific programs and lending solutions for its co-op members so they can be successful, making an impact within their own communities and strengthening rural America. CoBank is there every step of the way to assist CFA on its mission.

"CoBank's customers are some of our own customers. And as a fellow cooperative, CoBank understands our structure. They are so supportive, knowledgeable and most importantly, aligned with our mission. We are connected—CoBank supports us, and in turn, we are able to support our customers. A commercial lender would not be as invested or open-minded," Johnson said.

CoBank and CFA have worked together for nearly 50 years. Recently, CoBank provided a $450 million line of credit to CFA, which allowed the association to offer larger term financing packages to its members.

"We really pride ourselves on finding ways to say 'yes' before we have to say 'no'. We share communities with our members and their success is our success. And we can offer more loans with the help of CoBank. It's a symbiotic relationship that we are proud of," said Johnson.

1 | Michael Walton
Lead Relationship Mgr.
CoBank

2 | Christine Ritchie
SVP & COO
CFA

3 | Doug Richards
CIO
CFA

4 | Ross Johnson
President & CEO
CFA

5 | Tonia Denzer
SVP & Chief Lending Officer
CFA

6 | Keith Becker
VP & Chief Credit Officer
CFA

7 | Stephen Hoefer
CFO
CFA

1 2 3 4 5 6 7

CORPORATE FINANCE

RICELAND FOODS
Stuttgart, Arkansas

Rice is a versatile grain, providing nourishment at an affordable price for consumers worldwide. Riceland, the world's largest miller and marketer of rice and a major soybean processor, is on a mission to help farmers feed the world in a delicious and sustainable way.

Riceland is a farmer-owned cooperative, serving 5,500 members in Arkansas and Missouri. In fiscal year 2022, the cooperative's revenue topped $1.2 billion from selling rice and soy products nationwide and in global markets.

For more than 100 years, the co-op has helped multiple generations of farmers grow and sell its products while providing resources it would not be able to obtain individually. And as Riceland looks toward the future and a new generation of producers, sustainability is top-of-mind.

Recently, Riceland has increased its sustainability involvement within other supply chain organizations and trade associations to ensure its members are represented and become knowledgeable about sustainability in agriculture.

Through its involvement, Riceland has worked to create strategic partnerships. Paired with new advancements in technology, the co-op recently launched its farmer-driven sustainability program, Riceland Carbon Ready™.

The program will help participating members utilize technology to capture data, improving agronomic efficiency and environmental stewardship. The data, which will be collected on a field-by-field basis, will then be evaluated and leveraged to help members make more of a profit.

"Riceland's Carbon Ready program has the potential to improve crop yields, target specific applications, reduce costs and prepare farmers to engage in the evolving carbon and environmental asset markets, which will provide a huge benefit to our members," said Jason Brancel, president and CEO of Riceland.

In addition to its carbon ready program, new technology is on the horizon to help farmers grow more rice per acre in an environmentally friendly way. USDA has also created climate smart grants, partnering with customers and Riceland's members to help achieve their unique sustainability goals.

New programs and objectives are advanced through teamwork, and Riceland values its 80-year partnership with CoBank. The last few years have been challenging due to volatile commodity markets, and as a fellow co-op and ag lender, CoBank understands the business and potential hurdles.

In 2022, Riceland's revolving loan needs nearly doubled due to inflation and the war in Ukraine, increasing from $350 to $600 million in just nine months. CoBank was able to facilitate their needs quickly and efficiently.

"When we structure a deal, we are also able to bring in other Farm Credit associations, which is so beneficial and allows us to focus on our business. We value our relationship with CoBank and are excited for the future," Brancel said.

1 2 3 4 5

1 | Jason Brancel
President & CEO
Riceland Foods

2 | Sandra Morgan
VP & CFO
Riceland Foods

3 | Rob Prickett
Lead Relationship Mgr.
CoBank

4 | Roger Pohlner
Chairman of the Board of Directors
Riceland Foods

5 | James Trankle
Head of Corporate Agribusiness
CoBank

CORPORATE FINANCE

STAPLE COTTON COOPERATIVE ASSOCIATION

Greenwood, Mississippi

Before t-shirts and towels are purchased throughout America, the cotton they contain has made a global journey, helped along the way by Staple Cotton Cooperative Association (Staplcotn).

Staplcotn was formed in 1921 with a simple focus: to market its member-owners' ginned cotton. Those members—now 6,300 strong—raise cotton on more than one million acres. Over the decades, Staplcotn has increased its market share and expanded to 11 mid-south and southeastern states from its Mississippi home. On average, the cooperative sells and ships around 2.5 million bales of cotton each year in the U.S. and 24 other countries.

Getting the cotton from the field to the finished product is a complex value chain, each step of which hinges on the last. This multi-national effort of producing and processing cotton into finished goods has been dramatically complicated in recent years.

"The supply chain was showing weaknesses before the pandemic, which then made an already complex challenge exponentially more difficult," said Hank Reichle, president and CEO. "We've mobilized resources and improved our processes and technology, but much is out of our control."

From the farm, cotton is hauled to the gin where lint is separated from the seed and compressed in 500-pound bales. Bales are stored in one of Staplcotn's 15 warehouses or one of the 190+ country warehouses that are part of the cooperative's storage network. The cotton is sold to domestic and overseas mills, which spin the lint into yarn, which is woven or knitted into fabric and then sewn into apparel and home textile items.

An abnormally small Texas crop and growing global economic concerns combined with the ongoing supply chain issues have led to extreme cotton price volatility which further complicates the cooperative's risk management. Staplcotn manages this inventory risk with a hedging strategy of options and futures contracts that carry daily margin calls in today's volatile market. The cooperative pays its members the bulk of what they're due when their cotton is delivered. Additional progress payments are made during the following year while Staplcotn sells and ships the cotton, during which time prices rise and fall, recently very dramatically.

A long-time CoBank customer, Staplcotn funds its strategy with a $500 million line of credit that's typically renewed every five years. Instead, to minimize price volatility and to address seasonality, this year's renewal allows for an annual reassessment so financing levels can be right-sized to meet the then-current market conditions.

"CoBank understands that our business is full of price volatility and that we carry large inventory on an annual cycle," said Reichle. "Our hedge positions require access to significant credit, and I wouldn't want to finance our inventory and margin calls without CoBank's leadership."

1 | Natalya Rivkin
VP & Lead Relationship Mgr.
CoBank

2 | Hank Reichle
President & CEO
Staplcotn

3 | Thomas Parker
Chairman of the Board - Elect
Staplcotn

4 | Mike Sturdivant, III
Chairman of the Board
Staplcotn

5 | Mike Moffatt
VP & CFO
Staplcotn

6 | James Trankle
Head of Corporate Agribusiness
CoBank

1 2 3 4 5 6

VAN DER GEEST MAINE DAIRY

Merrill, Wisconsin

Van Der Geest Maine Dairy embodies tradition while recognizing the importance of innovation. What began more than 50 years ago on just 120 acres of land in Merrill, Wisconsin, has grown into an expansive dairy operation sprawling over 6,000 acres populated by 3,000 dairy cattle.

Van Der Geest is a fourth-generation, family-owned business that puts great emphasis on the importance of agriculture, sustainability and animal care.

The operation has gone through two major expansions since opening in 1969, with the most recent in 2020—adding a free-stall barn, advancing the comfort of their cattle. The new barn also features several fans that are designed to pull in fresh air and sense the temperature inside the barn to cool or heat the space accordingly. These new barn improvements are crucial in keeping the animals healthy and happy.

In addition to the new barn, Van Der Geest built a rotary parlor, a circular raised platform for the cows to stand on during the milking process. The rotary allows the herd to enter and exit the platform seamlessly as it slowly rotates in a circular motion. This form of milking puts less stress on the cattle, which aids in milk production—up to three pounds more milk per cow per day.

"Not only is the new rotary ideal and more comfortable for the cow, it is also a very efficient way to handle labor and production. Our previous milking facility was 24 years old. It's an improvement we had to execute, not only for our cattle, but to keep up with the latest industry standards," said dairy co-owner Lee Van Der Geest.

CoBank played an integral role in making the new barn and rotary a reality for Van Der Geest, financing the project through its wholly-owned subsidiary, Farm Credit Leasing. The lease helped Van Der Geest with various payment options and also allowed it to write off the payments, which was an important factor to consider for its tax plan.

Ultimately, Van Der Geest hopes to promote its product, while teaching consumers where milk really comes from. He also wants to continue growing their business for the next generation.

"We are a family farm striving to produce milk in the most profitable, economic and animal-friendly way possible. We want to teach people that milk doesn't just come from a shelf at the grocery store. We want the consumer to know how the milk is produced. During my dad's first farm expansion, he had the idea to build a viewing area to enable visitors to actually see the milking process. To honor this idea during the recent expansion, we also constructed a viewing room so that we could continue to educate visitors on the latest technology," Van Der Geest said.

"My great-grandfather was in the cattle business and my partner, Jason's family was in the dairy business. We hope to carry on these traditions and passions to our kids and future generations to come."

1 2 3 4 5 6 7

1 | Amy Weum
Regional VP
CoBank FCL

2 | Jason Mell
Partner
Van Der Geest

3 | Mary Van Der Geest
Advisor
Van Der Geest

4 | Josh Schmidt
Assistant VP
AgCountry FCS

5 | Brett Deibert
Sr. Relationship Mgr.
CoBank FCL

6 | Jay Nickel
Regional President
AgCountry FCS

7 | Lee Van Der Geest
Partner
Van Der Geest

CORE ELECTRIC COOPERATIVE

Sedalia, Colorado

Through community, connectivity and collaboration, CORE Electric Cooperative is redefining the electric distribution industry along Colorado's Front Range. CORE's diversified members—from the most rural parts of the state to urbanized neighborhoods—depend on reliable electricity 24/7. CORE not only provides reliable power but also ensures that every member has the energy to thrive.

CORE is the largest electric distribution cooperative in Colorado and one of the largest in the nation with nearly 180,000 services across 5,000 square miles. However, it had humble beginnings, forming in 1938 with just 23 members and 15 miles of service lines. This major expansion—due to a rapidly growing population in its territory—has created a unique opportunity for CORE to continually evolve its business strategy.

"Our diverse member base brings both blessings and challenges. CORE expects to be a premier energy provider, and we measure ourselves against investor-owned, public and co-op utility models. Providing choice and innovation to our members requires us to be not just an energy supplier but also a data manager. How we use data to best serve our members is key," said Jeff Baudier, CEO of CORE.

CORE is partnering with a new power supplier to create an expansive renewable energy portfolio. These new contracts will provide CORE's members with reliable, affordable and clean power for the next 20 years. And this electricity will be delivered using advanced distribution technology and state-of-the-art grid management tools. CORE will execute these new power supply projects over the next five years with deliveries beginning in 2026.

"We couldn't be positioned to execute on these types of innovative transactions without our partnership with CoBank," Baudier said. "Over the years, CoBank has been the most competitive in terms of financing our operating needs. CoBank's strength and stability provides reassurance to counterparties as we compete in this fast-paced marketplace."

CoBank recently financed a $150 million term facility for CORE to support capital expenditure needs for 2022-2023. And CoBank's line of credit allowed CORE to efficiently manage unexpected costs driven by winter storms. Through CoBank's relationship with the Farm Credit System, CORE can access services that other commercial lenders can't facilitate.

Beyond its financial relationship, CORE and CoBank have partnered at the community level. Every year, CORE donates to a local organization, and CoBank matches up to $10,000 through the Sharing Success Program. This year the contribution went to The Aspen Effect, which addresses the youth mental health crises in Colorado.

At the center of CORE's continued success is its dedicated staff and executive leadership. "CORE has an extraordinarily talented team, both close-knit and professional. They truly care about each other and our members, and they believe in the co-op mission. That makes all the difference," Baudier said.

1 | Pam Feuerstein
COO
CORE

2 | Dede Jones
CFO
CORE

3 | Michael Anthos
Sr. Relationship Mgr.
CoBank

4 | Jeff Baudier
CEO
CORE

5 | Kathleen Solano
Chief Administrative Officer
CORE

6 | Mandi Lesher
Chief Member Experience Officer
CORE

1 2 3 4 5 6

WEB WATER DEVELOPMENT ASSOCIATION

Aberdeen, South Dakota

Relationships and partners are critical to any company undertaking a large system upgrade while continuing to balance customer needs. WEB Water Development Association, Inc., has been carefully managing projects and serving its members successfully for years while also preparing for future growth.

"When our system was constructed in the '80s, no one was anticipating the extensive industrial growth we've seen in the past 20 years, including the addition of multiple ethanol plants," said Angie Hammrich, WEB Water's general manager. WEB Water knows that availability of water is essential for economic development.

Serving 112 bulk services throughout its northeastern South Dakota service territory, WEB Water provides safe, quality water to more than 8,000 customers across 9,300 square miles, including homes, farms and other businesses of all sizes.

Due to capacity constraints, WEB Water imposed a moratorium on adding new bulk members and had previously imposed moratoriums on six geographical regions. Now, it's breaking free of the logjam and adding six million gallons to its daily treatment capacity through a water treatment plant expansion.

As a first step, in 2021 WEB Water installed a new $1.2 million intake screen that more than doubled the amount of water that can flow into the treatment facility to 17 million gallons a day.

The new intake screen ensures consistent and sufficient water supply, which is essential for the entire system to function, while also screening for Zebra mussels, invasive mollusks infesting America's fresh water supply that can clog water pipes. The system also installed generators at the plant and intake point to support the expansion, a $4.5 million project to ensure reliability.

WEB Water has faced another set of challenges in building the expansion: supply chain constrictions and inflationary pressures have driven prices skyward, nearly doubling the original cost for the expansion project, though the increase was offset somewhat by under-budget costs on previous projects. Connecting the increased water flow to the distribution system also required a new mainline parallel pipe, a separate $40 million undertaking. Both projects are expected to break ground in 2023, with the water treatment plant expansion financed during construction by CoBank, as were the early, supporting projects.

"CoBank has been integral from our preliminary steps to the current projects, including being responsive in increasing our financing to meet the exploding costs," said Hammrich. "They've been a great partner for more than 20 years, in part because they have the funds and expertise to respond to needs like these, and much faster than other funding sources."

1 2 3 4 5 6

1 | Julia McCusker
Regional VP
CoBank

2 | Les Hinds
Board Treasurer
WEB Water

3 | Craig Oberle
Board Vice-Chair
WEB Water

4 | Tim Van Hatten
Board Chair
WEB Water

5 | Lori Goldade
Board Secretary
WEB Water

6 | Angie Hammrich
General Manager
WEB Water

DAIRYLAND POWER COOPERATIVE

La Crosse, Wisconsin

America's power generation and transmission providers face a tough balancing act as they shift away from carbon-based fuel while continuing to deliver sufficient electricity at affordable prices to their customers. Dairyland Power Cooperative is meeting the challenge while also preparing for an anticipated surge in demand as its member cooperatives grow.

Dairyland provides wholesale electricity to 24 distribution cooperatives and 27 municipal utilities across Wisconsin, Minnesota, Iowa and a small part of northwestern Illinois, which in turn serve more than half a million residents and businesses. Founded in 1941, the cooperative relies primarily on coal with a growing portfolio of natural gas, hydro, wind, solar and biogas.

"We're seeing increasing interest from our members and their customers to move away from carbon fuel, so we're responding as we also continue to deliver safe, reliable and cost-competitive power," said Dairyland CFO and EVP Phil Moilien. In response to member interest, Dairyland's board has adopted a 50% carbon reduction goal by 2030.

Last year, it retired one of its baseload coal plants, despite not facing carbon taxes or renewable energy requirements across the vast majority of its territory. Replacing the lost generation capacity will be an ongoing but necessary effort, especially as the cooperative is expecting a 20% jump in demand in 2025, when a large load will come onto its system as a result of four member distribution cooperatives acquiring a large Minnesota service territory. This effort has already been bolstered with the 2021 purchase of the RockGen Energy Center, a 503-megawatt natural gas facility in Wisconsin, financed by CoBank and two Farm Credit partners.

"We're looking at a significant increase in demand, but fortunately we have time to prepare and get resources in place," Moilien said. "We usually rely on the unbeatable interest rates through RUS for our generation facility purchases, but this owner was very motivated to sell so we needed to move quickly."

CoBank has been a long-time financial partner to Dairyland, previously delivering term loans, lines of credit and leasing to fund a variety of projects, from rail cars to fleet vehicles to a pension plan prepayment. The RockGen financing was two-part: an initial interim loan to meet the immediate need, replaced with a $205 million long-term loan.

"We've always valued CoBank's ethics and straightforward communication, and have developed a mutual respect and trust," said Moilien. "In this case, when time was of the essence, they moved quickly to get the deal done so we're in a better position to meet our members' expectations."

RockGen is only the most recent step in Dairyland's carbon transition—another Wisconsin natural gas project is planned for 2027, and the cooperative is examining carbon-free nuclear energy technologies, as well.

1 | Phil Moilien
Executive VP & CFO
Dairyland

2 | Brent Ridge
President & CEO
Dairyland

3 | Jennifer Scharmer
Board Chair
Dairyland

4 | Ryan Spearman
Lead Relationship Mgr.
CoBank

1 2 3 4

COMMUNICATIONS

HUNTER COMMUNICATIONS

Central Point, Oregon

Timing is often everything. For residents in southern Oregon, outside investment in a local telecommunications company came at a time when rural connectivity was paramount. The result is home access to high-speed broadband for thousands.

Hunter Communications started as a local provider of commercial telecommunications services to schools, hospitals and small businesses. In April 2020, Hunter was acquired by Grain Management, which recognized an opportunity to invest in the company's growth and better serve its population.

"Hunter Communications built a strong fiber network to serve commercial customers, but it passed by residential areas because of restrictions from our previous lender," said Michael Wynschenk, Hunter's CEO. "With the critical need for high-speed connection exacerbated by the pandemic, we shifted our business model to include delivering our business quality broadband to residential customers."

Diversifying into residential service was made possible, in part, with financing from CoBank, which financed the acquisition of Hunter as well as Hunter's December 2021 acquisition of another fixed wireless and fiber internet service provider, for a total commitment of $79 million. The latest acquisition expands Hunter's service territory from northern California to northern Oregon. Since entering the residential market in 2020, Hunter's revenues have tripled.

"Our plan is to continue growing, looking for new acquisitions and adjacent territory where we can offer our superior product at a superior price," said Sam Pauley, Hunter's CFO. "This is why having a financial partner like CoBank, who understands our industry and our strategy, is essential."

In connecting its existing network to residential customers, Hunter has invested extensively in installing fiber-to-the-home, which it cites as "future-proof" technology for its customers, with fixed wireless as a supplemental solution in very remote areas. The company's customer focus is evident in its offerings: in addition to the option of speeds up to 2.5 gig, which is rare anywhere in the country, the company offers no data caps, a free wi-fi router, and discounts for teachers and the military.

The company is equally focused on its employees, seeking exceptional individuals who align with Hunter's values and goals. In the current tight labor market, this often means extensive training of technicians as well as hiring skilled remote professionals.

"Our mission is to enhance and enable connections, and having the right staff on board and the right technology in place leads to high customer satisfaction, which is essential for our continued growth," said Wynschenk.

Hunter is certainly succeeding in its bid to deliver world-class connection and service: in 2022, just two years after it entered the residential space, PC Magazine named it the best network for gamers in the Pacific Northwest, rating it #1 for speed and reliability.

1 2 3

1 | Sam Pauley
CFO
Hunter Communications

2 | Lennie Blakeslee
Sector VP
CoBank

3 | Michael Wynschenk
CEO
Hunter Communications

TERRA-GEN
New York, New York

With an average of 284 sunny days a year, California is a prime location for solar energy generation, something renewable energy provider Terra-Gen has capitalized on for years. As Terra-Gen continues to expand to meet increasing demand, it must also comply with the state's stringent environmental requirements—which are among the toughest in the nation.

Terra-Gen's installation franchise is a 22-square-mile solar farm in southern California. Built in two phases, the first came on line in 2022 with 345 megawatts (MW) of capacity; the second phase will add another 410 MW in mid-2023, making the combined installation one of the largest in the country. CoBank participated in financing the first phase and, as coordinating lead arranger along with six Farm Credit partners, provided $227 million to fund this second project phase.

"Our previous work with CoBank demonstrated the team's knowledge, flexibility and commitment," said Jeff Cast, Terra-Gen's managing director of finance. "We've built a firm foundation of trust and respect, and we value the seamless delivery of the large financings we need."

The drivers behind renewable energy development in California are strong: in 2018, it was the second state to establish a 100% carbon-free or net-zero emissions goal, which carries a 2045 deadline. This will require an immense jump in renewable generation over the next two decades. At the same time, energy demand is increasing, in part due to the growth in electric vehicle adoption, driven by state regulation requiring that all passenger vehicles sold in-state be electric or hybrid by 2035. The solar energy provided by Terra-Gen's installation will be a key contributor to meet these ambitious goals, especially as the state's coal-fired plants will be retired over time.

However, simply generating electricity from the sun is only part of the challenge. Unlike coal-fired power plants, which operate and deliver power to the grid 24/7, solar energy is only produced when the sun shines. In places like southern California, when millions of air conditioners and evening entertainments are being turned on right as the sun is losing its power, this creates a critical gap. Terra-Gen's solution is an essential parallel project: a powerful battery installation to store 1,786 MWh hours of electricity generated by the photovoltaic panels.

"Battery storage allows us to shape the delivery of power, effectively saving it during the peak of mid-day and releasing it into the grid in the evening when demand is high but production is low," said Cast. "Batteries allow us to buffer the natural intermittency of using the sun as a fuel source, increasing the number of hours we're able to deliver solar-generated power and bringing us closer to a carbon-free energy grid."

1 | Justin Merkowitz
Managing Director, Project Finance
CoBank

2 | Chris Podbregar
Director, Project Execution
Terra-Gen

3 | Mitch Carpenter
Director, Project Construction
Terra-Gen

4 | Lauren Stevenson
Portfolio Manager, Project Finance
CoBank

1 2 3 4

VALUE PROPOSITION

*CoBank is a financially strong, **DEPENDABLE**, socially responsible, cooperative bank that provides relevant credit and financial solutions to rural America. We are **KNOWLEDGEABLE**, responsive and committed to enhancing our **CAPACITY** to deliver a superior customer experience and competitively priced products through efficient operating platforms, while maintaining the safety and soundness of the bank for future generations. We consistently demonstrate our **FOCUS** on rural America, repeatedly strive to be a trusted advisor for our customers and a trusted partner for those with whom we do business, while providing a meaningful return on shareholders' investment and **OWNERSHIP** in CoBank.*

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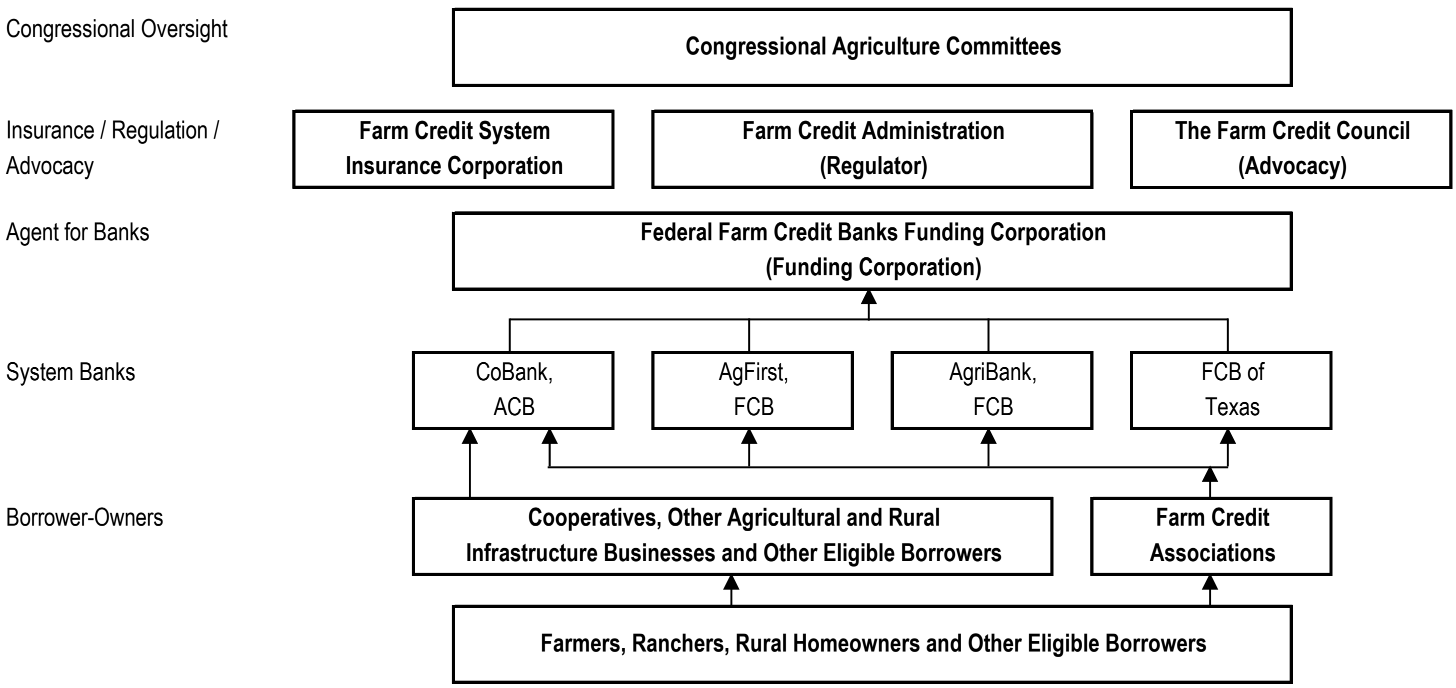
Company Introduction

CoBank, ACB (CoBank or the Bank) is one of the four banks in the Farm Credit System (System) and provides loans, leases and other financial services to vital industries across the rural communities of America. The System is a federally chartered network of borrower-owned cooperative lending institutions and related service organizations. Cooperatives are organizations that are owned and governed by the members who use the cooperative’s products or services.

The System was established in 1916 by the U.S. Congress, and is a Government Sponsored Enterprise (GSE). As a member of a GSE, we endeavor to fulfill our mission to a highly diverse customer base irrespective of market conditions. We also fulfill our broader mission as a member of a GSE by supporting rural communities and agriculture in their vital role of providing food security, energy security, economic growth, and a high quality of life to all Americans.

The following chart depicts the structure and ownership of the System.



CoBank is federally chartered under the Farm Credit Act of 1971, as amended (the Farm Credit Act), and is subject to supervision, examination, and safety and soundness regulation by an independent federal agency, the Farm Credit Administration (FCA). We are a mission-based lender with authority to make loans and provide related financial services to eligible borrowers in the agribusiness and rural infrastructure industries, and to certain related entities, as defined by the Farm Credit Act. We are not authorized to accept deposits to fund our operations. Instead, we raise funds primarily by issuing debt securities through the System’s agent, the Funding Corporation. Such securities are the joint and several obligations solely of the four System banks and are not obligations of Farm Credit Associations.

We are cooperatively owned by our eligible U.S. customers. Our customers consist of agricultural cooperatives; other food and agribusiness companies; rural power, communications and water cooperatives and companies; rural community facilities; Agricultural Credit Associations (Associations), which are regulated, farmer-owned financial institutions and members of the System; and other businesses that serve agriculture and rural communities. We are the primary funding source for certain Associations serving specified geographic regions in the United States. We collectively refer to these entities as our affiliated Associations. We provide a broad range of loans and other financial services through three operating segments: Agribusiness, Farm Credit Banking and Rural Infrastructure.

The accompanying consolidated financial statements exclude financial information of our affiliated Associations. CoBank and our affiliated Associations are collectively referred to as the "District," whereas other System banks and their affiliated Associations are referred to as a "district." Additional information about our affiliated Associations is contained in Note 18 to the accompanying consolidated financial statements.

System annual and quarterly information statements and press releases for the current fiscal year and the two preceding fiscal years, as well as offering circulars relating to Federal Farm Credit Banks Consolidated Systemwide bonds, medium term notes and discount notes (collectively referred to as Systemwide Debt Securities), are available for inspection at, or will be furnished without charge upon request to, the Federal Farm Credit Banks Funding Corporation, 101 Hudson Street, 35th Floor, Jersey City, New Jersey 07302; telephone (201) 200-8000. These documents are also available on the Funding Corporation's website at www.farmcreditfunding.com. This website also provides a link to each System bank's website where financial and other information of each bank can be found. References to documents, information or websites outside this Annual Report to Shareholders shall not be deemed to be incorporated by reference into this annual report.

The Federal Agricultural Mortgage Corporation (Farmer Mac) is a federally chartered corporation that was formed to provide a secondary market for a variety of loans made to borrowers in rural America. Although Farmer Mac is examined and regulated by the FCA, it is a separate enterprise, and any reference to "the System" herein does not include Farmer Mac. For more information on Farmer Mac and its relationship with System entities, please see "Relationship with the Federal Agricultural Mortgage Corporation" on page 65.

Financial Condition and Results of Operations

Overview

CoBank's loans outstanding grew 9 percent to $140.1 billion as of December 31, 2022, compared to $128.5 billion as of December 31, 2021. Our average loan volume was $136.9 billion during 2022, an increase of 11 percent compared to $123.3 billion during 2021. The increase in average loan volume reflected growth in lending across all three of our operating segments. Loan growth predominantly occurred in our Farm Credit Banking and Agribusiness operating segments and, to a lesser extent, in our Rural Infrastructure operating segment.

Our net income increased 10 percent to $1.449 billion for the year ended December 31, 2022 compared to $1.314 billion for the year ended December 31, 2021. The increase primarily resulted from increases in net interest income and noninterest income partially offset by an increased provision for loan losses and higher operating expenses.

Our investment securities, federal funds sold and other overnight funds increased 22 percent to $45.5 billion as of December 31, 2022, compared to $37.3 billion at December 31, 2021. Average investment securities, federal funds sold and other overnight funds increased 21 percent to $40.7 billion during 2022, compared to $33.5 billion during 2021. The increase in our investments was required to maintain our liquidity reserve associated with the higher loan volume we experienced and to take advantage of favorable investment spread opportunities in the marketplace.

Our overall loan quality measures remain strong at December 31, 2022. Special Mention loans and accrued interest improved to 2.03 percent of total loans and accrued interest at December 31, 2022 compared to 2.34 percent at December 31, 2021. Adversely classified loans and accrued interest slightly increased to 0.73 percent of total loans and accrued interest at December 31, 2022 compared to 0.72 percent at December 31, 2021. Nonaccrual loans increased to $145.4 million at December 31, 2022 from $122.6 million at December 31, 2021 due to a small number of agribusiness loans transferred to nonaccrual status partially offset by the charge-off of a power infrastructure loan. Nonaccrual loans were 0.10 percent of total loans at December 31, 2022 and 2021.

Our capital and liquidity positions remain strong and well in excess of regulatory minimums as of December 31, 2022. Shareholders' equity decreased to $10.2 billion as of December 31, 2022, compared to $12.2 billion at December 31, 2021 primarily due to unrealized losses on investment securities recorded in accumulated other comprehensive income (loss) resulting from higher market interest rates. While the unrealized losses on investment securities result in a reduction of shareholders' equity, they do not impact current period earnings or regulatory capital. The level of these unrealized losses is subject to future fluctuations in interest rates. Our total capital ratio was 14.25 percent as of December 31, 2022, compared to the regulatory minimum requirement of 8.00 percent (10.50 percent inclusive of the capital conservation buffer). As of December 31, 2022, we held a total of $46.4 billion in investments, federal funds sold and other overnight funds, and cash and cash equivalents primarily as a liquidity reserve, and our days liquidity was 183 days, more than double the regulatory days of liquidity requirement.

A five-year summary of selected consolidated financial data is shown on the following page.

Five-Year Summary of Selected CoBank Consolidated Financial Data ($ in Thousands)

As of and for the Year Ended December 31,	2022	2021	2020	2019	2018
Consolidated Statement of Income Data					
Net Interest Income	**$ 1,883,925**	$ 1,725,900	$ 1,566,532	$ 1,398,559	$ 1,431,296
Provision for Loan Losses	**111,000**	18,000	21,000	57,000	66,000
Noninterest Income	**366,011**	198,746	281,836	220,913	289,660
Operating Expenses	**579,866**	490,411	434,519	403,502	363,807
Provision for Income Taxes	**110,444**	102,076	129,848	67,742	100,374
Net Income	**$ 1,448,626**	$ 1,314,159	$ 1,263,001	$ 1,091,228	$ 1,190,775
Net Income Distributed					
Patronage Distributions:					
Common Stock	**$ 138,835**	$ 127,837	$ 131,912	$ 128,428	$ 127,910
Cash	**707,901**	631,420	489,913	475,341	475,571
Special Cash	**148,821**	125,360	106,603	39,839	96,187
Total Patronage Distributions	**995,557**	884,617	728,428	643,608	699,668
Preferred Stock Dividends	**92,663**	83,494	84,160	87,537	86,938
Total Net Income Distributed	**$ 1,088,220**	$ 968,111	$ 812,588	$ 731,145	$ 786,606
Consolidated Balance Sheet Data					
Total Loans and Leases	**$ 140,088,466**	$ 128,529,146	$ 120,855,800	$ 108,854,253	$ 104,493,855
Less: Allowance for Loan Losses	**681,862**	650,690	635,426	654,764	621,591
Net Loans	**139,406,604**	127,878,456	120,220,374	108,199,489	103,872,264
Investment Securities, Federal Funds Sold and Other Overnight Funds	**45,497,964**	37,341,596	33,660,003	34,235,944	32,591,720
Cash and Cash Equivalents	**895,700**	3,196,869	2,335,212	948,669	1,368,075
Other Assets	**3,042,585**	1,889,003	2,370,815	1,619,961	1,183,598
Total Assets	**$ 188,842,853**	$ 170,305,924	$ 158,586,404	$ 145,004,063	$ 139,015,657
Debt Obligations with Maturities ≤ 1Year	**$ 82,607,801**	$ 69,990,182	$ 63,618,396	$ 60,398,618	$ 58,797,868
Debt Obligations with Maturities > 1Year	**92,015,297**	84,959,797	79,765,287	71,831,548	68,834,315
Reserve for Unfunded Commitments	**143,170**	106,148	96,769	92,302	81,649
Other Liabilities	**3,851,897**	3,015,436	3,196,347	2,114,702	1,766,892
Total Liabilities	**178,618,165**	158,071,563	146,676,799	134,437,170	129,480,724
Preferred Stock	**1,632,645**	1,902,500	1,500,000	1,500,000	1,500,000
Common Stock	**3,999,731**	4,012,706	3,917,740	3,621,577	3,415,654
Unallocated Retained Earnings	**6,518,987**	6,163,747	5,803,923	5,350,891	4,982,383
Accumulated Other Comprehensive (Loss) Income	**(1,926,675)**	155,408	687,942	94,425	(363,104)
Total Shareholders' Equity	**10,224,688**	12,234,361	11,909,605	10,566,893	9,534,933
Total Liabilities and Shareholders' Equity	**$ 188,842,853**	$ 170,305,924	$ 158,586,404	$ 145,004,063	$ 139,015,657
Key Financial Ratios					
For the Respective Year Ended:					
Return on Average Common Shareholders' Equity	**14.59 %**	11.78 %	11.86 %	11.63 %	14.60 %
Return on Average Total Shareholders' Equity	**13.17**	10.98	11.04	10.77	13.14
Return on Average Assets	**0.80**	0.82	0.84	0.79	0.90
Net Interest Margin	**1.06**	1.10	1.07	1.02	1.09
Net Charge-offs (Recoveries) / Average Loans	**0.03**	(0.01)	0.03	0.01	0.03
Patronage Distributions / Total Average Common Stock Owned by Active Borrowers	**26.07**	23.17	20.58	19.48	22.35
As of the Respective Year-end:					
Debt / Total Shareholders' Equity (: 1)	**17.47**	12.92	12.32	12.72	13.58
Total Shareholders' Equity / Total Assets	**5.41 %**	7.18 %	7.51 %	7.29 %	6.86 %
Allowance for Credit Losses(1) / Total Loans	**0.59**	0.59	0.61	0.69	0.67
Common Equity Tier 1 Capital Ratio	**11.62**	12.74	12.33	12.70	12.38
Tier 1 Capital Ratio	**13.39**	14.70	14.25	14.83	14.57
Total Capital Ratio	**14.25**	15.63	15.22	15.86	15.58
Tier 1 Leverage Ratio	**6.80**	7.47	7.30	7.51	7.53
Permanent Capital Ratio	**13.51**	14.81	14.36	14.95	14.69
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio	**3.13**	3.36	3.23	3.24	3.19

(1) Includes the allowance for loan losses and the reserve for unfunded commitments.

Net Interest Income

Interest income and interest expense for the major categories of interest-earning assets and interest-bearing liabilities as well as net interest income and net interest margin are shown in the following table.

Net Interest Income and Net Interest Margin

Year Ended December 31,	2022			2021			2020		
($ in Millions)	Average Balance	Average Rate	Interest Income/ Expense	Average Balance	Average Rate	Interest Income/ Expense	Average Balance	Average Rate	Interest Income/ Expense
Interest-earning Assets									
Total Loans	$ 136,912	2.86 %	$ 3,909	$ 123,339	1.97 %	$ 2,431	$ 112,634	2.43 %	$ 2,736
Investment Securities	33,619	2.02	680	32,695	1.34	437	32,380	1.76	569
Federal Funds Sold and Other Overnight Funds	7,055	2.25	159	845	0.12	1	1,504	0.47	7
Total Interest-earning Assets	$ 177,586	2.67	$ 4,748	$ 156,879	1.83	$ 2,869	$ 146,518	2.26	$ 3,312
Interest-bearing Liabilities									
Bonds and Notes	$ 150,568	1.73 %	$ 2,603	$ 134,050	0.83 %	$ 1,107	$ 124,009	1.32 %	$ 1,635
Discount Notes	13,182	1.59	209	9,536	0.12	11	11,550	0.82	95
Other Liabilities	2,022	2.57	52	1,357	1.84	25	966	1.55	15
Total Interest-bearing Liabilities	$ 165,772	1.73	$ 2,864	$ 144,943	0.79	$ 1,143	$ 136,525	1.28	$ 1,745
Interest Rate Spread		0.94			1.04			0.98	
Impact of Equity Financing	$ 10,999	0.12		$ 11,970	0.06		$ 11,445	0.09	
Net Interest Margin and Net Interest Income		1.06 %	$ 1,884		1.10 %	$ 1,726		1.07 %	$ 1,567

Changes in our interest income, interest expense and net interest income due to volume and rate variances for interest-earning assets and interest-bearing liabilities are summarized in the table below.

Changes in Net Interest Income Due to Changes in Average Volume and Interest Rates[(1)]

	2022			2021		
($ in Millions)	Increase (Decrease) From Previous Year Due To			Increase (Decrease) From Previous Year Due To		
	Volume	Yield/Rate	Total	Volume	Yield/Rate	Total
Total Loans	$ 328	$ 1,150	$ 1,478	$ 236	$ (541)	$ (305)
Investment Securities	16	227	243	5	(146)	(132)
Federal Funds Sold and Other Overnight Funds	74	84	158	(2)	(4)	(6)
Total Interest Income	418	1,461	1,879	239	(691)	(443)
Total Interest Expense	262	1,459	1,721	87	(689)	(602)
Changes in Net Interest Income	$ 156	$ 2	$ 158	$ 152	$ (2)	$ 159

(1) The change in interest income or expense not solely due to changes in volume or rate has been allocated in proportion to the absolute dollar amount of the change in volume and rate.

Net interest income increased $158.0 million, or 9 percent, to $1.884 billion in 2022, compared to $1.726 billion in 2021. The increase in net interest income was primarily driven by higher average loan volume. Net interest income increased most significantly in our Agribusiness operating segment resulting from sharply higher commodity prices, particularly earlier in the year, which drove higher financing requirements at many of our grain and farm supply cooperative customers as well as increased lending to customers that use commodities as inputs to their businesses. Loan growth also included increased lending to food and agribusiness customers. Higher earnings on balance sheet positioning also contributed to increased net interest income in 2022. Average loan volume increased $13.6 billion, or 11 percent, to $136.9 billion in 2022 reflecting growth in lending across all three of our operating segments – Agribusiness, Farm Credit Banking and Rural Infrastructure. Average investment securities, federal funds sold and other overnight funds increased to $40.7 billion in 2022 from $33.5 billion in 2021.

Net interest margin decreased to 1.06 percent in 2022 from 1.10 percent in 2021, and interest rate spread decreased to 0.94 percent in 2022 from 1.04 percent in 2021. The decrease in net interest margin was primarily driven by lower spreads in certain lending portfolios within our Agribusiness and Rural Infrastructure operating segments and changes in asset mix including increased lending to affiliated Associations and agricultural export customers and higher levels of investment securities, all of which have lower spreads commensurate with lower risk.

Net interest income increased $159.4 million, or 10 percent, to $1.726 billion in 2021, compared to $1.567 billion in 2020. The increase in net interest income was primarily driven by higher average loan volume and an improvement in lending spreads in most lending portfolios. Average loan volume increased $10.7 billion, or 10 percent, to $123.3 billion in 2021 reflecting growth in lending across all three of our operating segments. Average investment securities, federal funds sold and other overnight funds decreased to $33.5 billion in 2021 from $33.9 billion in 2020.

Net interest margin improved to 1.10 percent in 2021 from 1.07 percent in 2020, and interest rate spread increased to 1.04 percent in 2021 from 0.98 percent in 2020. The increase in our net interest margin was driven by higher lending spreads in our loan portfolio which was due in part to changes in asset mix, including increased lending to Agribusiness customers which carry higher spreads than many of our other lending portfolios.

Provision for Loan Losses and Allowance for Credit Losses

The provision for loan losses reflects our estimate of credit losses inherent in our loan and finance lease portfolios, including unfunded commitments. The allowance for loan losses covers the funded portion of our loans outstanding, while the reserve for unfunded commitments covers losses on unfunded lending commitments. The sum of the allowance for loan losses and the reserve for unfunded commitments is referred to as the allowance for credit losses. We base our allowance for probable and estimable losses on the factors discussed in “Critical Accounting Estimates – Allowance for Credit Losses” on page 72. The table on page 42 summarizes the activity in our allowance for credit losses, by operating segment, for the past five years.

We recorded a $111.0 million provision for loan losses in 2022, which included a $71.5 million provision in our Agribusiness operating segment and a $39.5 million provision in our Rural Infrastructure operating segment. The 2022 provision for loan losses in our Agribusiness operating segment primarily related to increased lending activity and to a lesser extent higher specific reserves for a small number of customers. The 2022 provision for loan losses in our Rural Infrastructure operating segment primarily related to a reserve for a power infrastructure customer that was subsequently charged off and to a lesser extent deterioration in credit quality in certain portfolios.

We recorded an $18.0 million provision for loan losses in 2021, which included a $16.0 million provision in our Agribusiness operating segment and a $2.0 million provision in our Rural Infrastructure operating segment. The 2021 provision for loan losses in our Agribusiness operating segment was largely driven by increased lending volume and to a lesser extent deterioration in credit quality, partially offset by a decrease in COVID-19 related reserves. The 2021 provision for loan losses in our Rural Infrastructure operating segment primarily resulted from an increase in specific reserves for a small number of customers impacted by the winter storm Uri that occurred in Texas in early 2021 somewhat offset by an improvement in credit quality in certain portfolio sectors.

Adversely classified loans and accrued interest were 0.73 percent of total loans and accrued interest at December 31, 2022, compared to 0.72 percent at December 31, 2021 and 0.54 percent at December 31, 2020. Adversely classified loans and accrued interest increased in our Agribusiness operating segment in 2022 due to deterioration in credit quality for a small number of customers. This was mostly offset by lower adverse assets in our Rural Infrastructure operating segment due to charge-offs and sales of a limited number of loans. The increase in adversely classified loans and accrued interest in 2021 was due to slight deterioration in credit quality for a small number of customers in our Agribusiness and Rural Infrastructure operating segments.

Total nonaccrual loans increased by $22.8 million to $145.4 million, or 0.10 percent of total loans, at December 31, 2022 from $122.6 million, or 0.10 percent of total loans, at December 31, 2021 due to a small number of loans in our Agribusiness operating segment, which were transferred to nonaccrual status, partially offset by the charge-offs and sales of a limited number of loans in our Rural Infrastructure operating segment. Total nonaccrual loans increased by $5.2 million to $122.6 million at December 31, 2021 from $117.4 million, or 0.10 percent of total loans, at December 31, 2020 due to downgrades of a small number of customers in our Rural Infrastructure operating segment partially offset by lower nonaccrual loans in our Agribusiness operating segment. We recorded gross charge-offs of $44.9 million in 2022 compared to $6.2 million and $38.7 million in 2021 and 2020, respectively. The charge-offs in 2022 related primarily to a power infrastructure customer and an agribusiness customer, both of which experienced financial difficulty, and to lesser extent a small number of other customers in our Agribusiness and Rural Infrastructure operating segments. The charge-offs in 2021 primarily related to a small number of customers in our Agribusiness and Rural Infrastructure operating segments. The charge-offs in 2020 primarily related to a limited number of communications and rural energy customers in our Rural Infrastructure operating segment who experienced financial distress. Gross recoveries were $2.1 million in 2022 compared to $12.8 million and $2.8 million in 2021 and 2020, respectively.

Our allowance for credit losses was $825.0 million at December 31, 2022, compared to $756.8 million and $732.2 million as of December 31, 2021 and 2020, respectively. The allowance for credit losses represented 0.59 percent of total loans as of the end of 2022 and 2021, compared to 0.61 percent of total loans at December 31, 2020. At December 31, 2022, our allowance for credit losses represented 1.24 percent of non-guaranteed loans excluding wholesale loans to Associations, compared to 1.22 percent and 1.24 percent at December 31, 2021 and 2020, respectively.

As discussed in Note 2 to the accompanying consolidated financial statements, CoBank adopted the Current Expected

Credit Losses (CECL) accounting standard on January 1, 2023.

Refer to "Enterprise Risk Profile – Credit Risk Management" beginning on page 46 for further information on nonperforming loans, charge-offs, loan quality trends and the factors considered in determining the levels of our provision for loan losses and allowance for credit losses.

Noninterest Income

The following table details our noninterest income for each of the last three years.

Noninterest Income ($ in Thousands)

Year Ended December 31,	2022	2021	2020
Net Fee Income	**$ 158,093**	$ 152,913	$ 141,190
Patronage Income	**151,263**	129,176	109,098
Prepayment Income	**9,010**	78,928	75,786
Gains (Losses) on Early Extinguishments of Debt	**1,058**	(126,078)	(78,653)
Gains (Losses) on Sales of Investment Securities	**1,449**	(36,531)	20
Gains on Interest Rate Swaps and Other Derivatives	**21,172**	16,068	19,358
Other, Net	**23,966**	(15,730)	15,037
Total Noninterest Income	**$ 366,011**	$ 198,746	$ 281,836

Noninterest income is primarily composed of fee income, patronage income, loan prepayment income, gains and losses on early extinguishments of debt and miscellaneous gains and losses.

Total noninterest income increased in 2022 to $366.0 million, or by 84 percent, from $198.7 million in 2021. The increase in noninterest income resulted primarily from lower losses on early extinguishments of debt, net of prepayment income, higher patronage income, and lower losses on sales of investment securities. Noninterest income in the 2021 period also included an expense relating to litigation that was settled in January 2022. See Note 15 to the accompanying consolidated financial statements.

Our net fee income, which includes arrangement fees and unused commitment fees, among others, increased to $158.1 million in 2022 compared to $152.9 million in 2021 primarily due to a higher level of transaction-related lending fees in our Rural Infrastructure operating segment.

Patronage income, which represents patronage received from other System institutions for loans we sold to them, increased to $151.3 million in 2022 compared to $129.2 million in 2021. This increase reflects greater levels of loans sold to affiliated Associations and other System institutions as well as higher levels of patronage received from certain of these System institutions.

Prepayment income decreased to $9.0 million in 2022 from $78.9 million in 2021 due to a lower level of customer refinancing activity and prepayment fees driven by the rising interest rate environment. Gains on early extinguishments of Systemwide Debt Securities and Rural Utilities Service (RUS) bonds were $1.1 million in 2022 compared to losses of $126.1 million in 2021. During 2022, we extinguished $3.989 billion of Systemwide Debt Securities compared to $1.001 billion in 2021. We did not extinguish any RUS bonds during 2022 compared to $259.7 million in 2021. It is our general practice to extinguish debt to offset the current and prospective impact of prepayments in our loan and investment portfolios. In 2021, we took advantage of market opportunities to buy back higher-cost debt at losses which exceeded prepayment income.

During 2022, we sold investment securities for total proceeds of $513.5 million resulting in gains totaling $1.4 million. The investment sales in 2022 were primarily to take advantage of favorable market conditions and for administrative reasons. During 2021, we sold investment securities for total proceeds of $4.0 billion resulting in losses totaling $36.5 million. The investment sales in 2021 were primarily to rebalance the investment portfolio to take advantage of market opportunities to sell lower yielding investments and replace them with higher yielding investments to increase our interest income in future periods and efficiently manage our tax obligations. The sale of investment securities is discussed in "Liquidity and Capital Resources" beginning on page 66.

Gains on interest rate swaps and other derivatives increased to $21.2 million in 2022 compared to $16.1 million in 2021 due to higher customer derivative transaction activity and related income.

Other, net noninterest income increased to a gain of $24.0 million in 2022 compared to loss of $15.7 million in 2021 primarily due to the 2021 expense relating to litigation that was settled in January 2022.

Total noninterest income decreased in 2021 to $198.7 million, or by 29 percent, from $281.8 million in 2020. The decrease in noninterest income resulted primarily from higher losses on early extinguishments of debt and losses on sales of investment securities. Noninterest income for 2021 also included an expense relating to litigation that was settled in January 2022. See Note 15 to the accompanying consolidated financial statements. These decreases in noninterest income during 2021 were partially offset by increases in patronage income and net fee income.

Operating Expenses

The following table details our operating expenses for each of the last three years.

Analysis of Operating Expenses ($ in Thousands)

Year Ended December 31,	2022	2021	2020
Employee Compensation	$ **238,134**	$ 232,798	$ 236,646
General and Administrative	**37,463**	35,056	28,093
Information Services	**68,609**	54,276	52,448
Insurance Fund Premium	**151,037**	108,416	59,484
Travel and Entertainment	**18,610**	9,251	7,062
Farm Credit System Related	**18,096**	15,902	15,659
Occupancy and Equipment	**17,447**	15,950	16,295
Purchased Services	**30,470**	18,762	18,832
Total Operating Expenses	$ **579,866**	$ 490,411	$ 434,519
Total Operating Expenses/ (Net Interest Income + Net Fee Income)	**28.4** %	26.1 %	25.4 %
Operating Expenses, Excluding Insurance Fund Premium/ (Net Interest Income + Net Fee Income)	**21.0**	20.3	22.0

Total operating expenses increased 18 percent in 2022 to $579.9 million, compared to $490.4 million for 2021. The higher level of operating expenses was primarily driven by an increase in Insurance Fund premium expense and to a lesser extent increased expenses related to information services, purchased services, employee compensation and travel and entertainment.

Employee compensation expenses, which include salaries, incentive compensation and employee benefits, increased to $238.1 million in 2022 from $232.8 million in 2021. The increase was due to an increase in the number of employees, as well as, merit and other pay increases resulting from inflation and tight labor markets, partially offset by lower pension expense. As of December 31, 2022, we had 1,140 employees, compared to 1,077 and 1,136 at December 31, 2021 and 2020, respectively.

General and administrative expenses increased to $37.5 million in 2022, compared to $35.1 million in 2021. General and administrative expenses primarily include charitable contributions, directors' expenses, associate training and temporary labor expenses and other miscellaneous expenses. We believe making charitable contributions and providing other support to civic and other organizations that benefit the residents, communities and industries we serve in rural America is consistent with our overall corporate social responsibility program and fulfillment of our mission. The increase in general and administrative expenses in 2022 was driven by higher temporary labor expense and other administrative costs, partially offset by slightly lower charitable contribution expense as compared to 2021.

Information services expense, which includes the cost of hardware, software, network infrastructure and related support services, increased to $68.6 million in 2022 from $54.3 million in 2021 due to greater expenses related to software subscriptions, support, maintenance and amortization as well as strategic spend to enhance and maintain our service offerings and technology platforms.

Insurance Fund premium expenses increased to $151.0 million in 2022, compared to $108.4 million in 2021. The increase was due to higher Insurance Fund premium rates and an increase in insured debt obligations. Insurance Fund premium rates are set by the Insurance Corporation and were 20 basis points of average outstanding adjusted insured debt obligations in 2022 compared to 16 basis points in 2021. Premium rates also include 10 basis points assessed to nonaccrual loans and other-than-temporarily impaired investments in both periods. In February 2023, the Insurance Corporation announced a premium rate of 18 basis points of average outstanding adjusted insured debt obligations for 2023. The Insurance Corporation will review premium rates again in July 2023. Changes in the premium rate generally result from increases or decreases in the overall level of System assets and related debt obligations, the amount of assets in the Insurance Fund and the Insurance Corporation's projections of these balances.

Travel and entertainment expenses increased to $18.6 million in 2022 compared to $9.3 million in 2021. The increase was primarily due to higher travel and customer meeting expenses resulting from reductions in COVID-19 restrictions.

Farm Credit System related expenses were $18.1 million in 2022 compared to $15.9 million in 2021. These expenses primarily represent our share of costs to fund the operations of the FCA and the Farm Credit Council (FCC), a national trade organization that represents System entities. Each System institution is assessed a pro rata share of the FCA's total expenses based primarily on each institution's average risk-adjusted assets. FCC costs are generally allocated based on the number of directors that represent each district and the level of bank assets.

Occupancy and equipment expenses were $17.4 million in 2022 compared to $16.0 million in 2021. Occupancy and equipment expenses include rent, maintenance and repairs related to our corporate headquarters and other banking center offices.

Purchased services expenses increased to $30.5 million in 2022 compared to $18.8 million in 2021. Purchased services expenses primarily include professional and consulting fees, which increased due to process automation and strategic spend to improve our operating platforms, as well as the enhancement of our data strategy and enterprise information management capabilities.

Total operating expenses as a percent of net interest income plus net fee income were 28.4 percent in 2022 compared to 26.1 percent in 2021 and 25.4 percent in 2020. Excluding the impact of Insurance Fund premium expense, operating expenses as a percent of net interest income plus net fee income were 21.0 percent in 2022, compared to 20.3 percent in 2021 and 22.0 percent in 2020. The higher operating expense ratio excluding Insurance Fund premium expense in 2022 was the result of growth in operating expenses exceeding the growth in net interest income and fee income primarily due to strategic spend in 2022 to enhance technology and operating platforms described above.

Total operating expenses increased 13 percent in 2021 to $490.4 million, compared to $434.5 million for 2020. The higher level of operating expenses was driven by an increase in Insurance Fund premium expenses and to a lesser extent higher general and administrative expenses.

Provision for Income Taxes

Our provision for income taxes increased to $110.4 million in 2022 from $102.1 million in 2021, and the effective tax rate was 7.1 percent for 2022 compared to 7.2 percent in 2021. The increase in income tax expense was primarily due to an increase in earnings attributable to taxable business activities in 2022.

Our provision for income taxes decreased to $102.1 million in 2021 from $129.8 million in 2020, and the effective tax rate decreased to 7.2 percent for 2021 compared to 9.3 percent in 2020. The decreases in our income tax expense and the effective tax rate were primarily due to an increase in earnings attributable to non-taxable business activities in 2021.

Our effective tax rates are less than the applicable federal and state statutory income tax rates primarily due to tax-deductible patronage distributions. In addition, as more fully discussed in Note 1 to the accompanying consolidated financial statements, a portion of CoBank's activities are statutorily exempt from income taxes. These tax-exempt activities include wholesale lending to Farm Credit Associations and loan participation purchases from other System entities.

In August 2022, the Inflation Reduction Act (IRA) was signed into law. The provisions of the IRA are intended to, among other things, lower fuel and electricity prices, incentivize domestic clean energy investment, manufacturing, and production, and promote reductions in carbon emissions. The IRA also implements a 15 percent corporate alternative minimum tax and a 1 percent excise tax on stock repurchases. Although further regulatory guidance is expected on the tax provisions in the IRA, we currently believe the provisions on alternative minimum tax and stock repurchases will not have a material impact on our consolidated financial position, results of operations or cash flows.

Operating Segment Financial Review

We conduct lending operations through three operating segments: Agribusiness, Farm Credit Banking and Rural Infrastructure. All customer activity, including loans and leases and related income, is specifically assigned to the business units that comprise the operating segments. Investment securities and federal funds sold and other overnight funds, which are primarily held as a liquidity reserve to support our banking operations, are not specifically assigned to operating segments; however, the income from investment securities and federal funds sold and other overnight funds is attributed to the operating segments.

In addition to the operating segments described below, our capital markets division supports our lending divisions and manages syndications and loan sales with 77 financial institutions, including System institutions. As of December 31, 2022, the total amount of syndicated or sold loan commitments was approximately $100.3 billion to System entities and other financial institutions to help meet customers' credit needs and to effectively diversify risk and manage capital.

We also offer non-credit products and services including cash management, online banking, mobile banking and commercial credit card solutions. Revenues generated from non-credit products and services and by capital markets, as well as all related operating expenses, are attributed to the operating segments.

Net income by operating segment is summarized in the table below and is more fully disclosed in Note 14 to the accompanying consolidated financial statements. The following tables also provide period-end and average loan amounts by operating segment.

Net Income by Operating Segment ($ in Thousands)

Year Ended December 31,	2022	2021	2020
Operating Segment:			
Agribusiness	**$ 774,142**	$ 676,850	$ 608,537
Farm Credit Banking	**251,155**	245,587	256,615
Rural Infrastructure	**423,329**	391,722	397,849
Total	**$1,448,626**	$1,314,159	$1,263,001

Period-end Loan Portfolio by Operating Segment ($ in Millions)

December 31,	2022	2021	2020	2019	2018
Agribusiness	**$ 40,098**	$ 38,094	$ 36,103	$ 33,168	$ 32,432
Farm Credit Banking	**71,529**	65,632	60,516	54,459	50,695
Rural Infrastructure	**28,461**	24,803	24,237	21,227	21,367
Total Loans	**$ 140,088**	$ 128,529	$ 120,856	$ 108,854	$ 104,494

Average Loan Portfolio by Operating Segment ($ in Millions)

Year Ended December 31,	2022	2021	2020	2019	2018
Agribusiness	**$ 43,323**	$ 37,656	$ 33,292	$ 32,119	$ 31,604
Farm Credit Banking	**67,855**	61,304	56,423	51,313	48,121
Rural Infrastructure	**25,734**	24,379	22,919	20,919	20,919
Total Average Loans	**$ 136,912**	$ 123,339	$ 112,634	$ 104,351	$ 100,644

The following table presents activity in the allowance for credit losses by operating segment.

Analysis of the Allowance for Credit Losses ($ in Thousands)

	2022	2021	2020	2019	2018
Beginning of Year	**$ 756,838**	$ 732,195	$ 747,066	$ 703,240	$ 670,792
Charge-offs:					
Agribusiness	**(21,162)**	(3,628)	(6,472)	(8,782)	(33,575)
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**(23,737)**	(2,560)	(32,230)	(7,500)	(2,135)
Total Charge-offs	**(44,899)**	(6,188)	(38,702)	(16,282)	(35,710)
Recoveries:					
Agribusiness	**1,285**	4,283	2,248	2,492	1,927
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**808**	8,548	583	616	231
Total Recoveries	**2,093**	12,831	2,831	3,108	2,158
Net (Charge-offs) Recoveries	**(42,806)**	6,643	(35,871)	(13,174)	(33,552)
Provision (Reversal) Charged (Credited) to Earnings:					
Agribusiness	**71,500**	16,000	25,600	53,000	54,000
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**39,500**	2,000	(4,600)	4,000	12,000
Total Provision (Reversal) Charged (Credited) to Earnings	**111,000**	18,000	21,000	57,000	66,000
End of Year	**$ 825,032**	$ 756,838	$ 732,195	$ 747,066	$ 703,240
Components:					
Allowance for Loan Losses	**$ 681,862**	$ 650,690	$ 635,426	$ 654,764	$ 621,591
Reserve for Unfunded Commitments	**143,170**	106,148	96,769	92,302	81,649
Total Allowance for Credit Losses (ACL)	**$ 825,032**	$ 756,838	$ 732,195	$ 747,066	$ 703,240
ACL/Total Loans	**0.59** %	0.59 %	0.61 %	0.69 %	0.67 %
ACL/Non-guaranteed Loans (Excluding Loans to Associations)	**1.24**	1.22	1.24	1.40	1.33
ACL/Impaired Loans	**497**	604	620	296	214
ACL/Nonaccrual Loans	**568**	617	624	310	216
Net Charge-offs (Recoveries) / Average Loans	**0.03**	(0.01)	0.03	0.01	0.03

Allowance for Credit Losses by Operating Segment ($ in Thousands)

December 31,	2022	2021	2020	2019	2018
Agribusiness	**$ 638,619**	$ 586,996	$ 570,342	$ 548,966	$ 502,256
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**186,413**	169,842	161,853	198,100	200,984
Total Allowance for Credit Losses	**$ 825,032**	$ 756,838	$ 732,195	$ 747,066	$ 703,240

Agribusiness

Overview

The Agribusiness operating segment includes loans and other financial services provided to a diverse market of cooperatives and other businesses in various agricultural sectors including grain handling and marketing, farm supply, fruits, nuts, vegetables, forest products, dairy, livestock, biofuels and food processing. Primary products and services include term loans, revolving lines of credit, trade finance, capital markets services, as well as risk management, cash management, leasing and investment products. To enhance portfolio diversification, and to assist System partners in meeting the needs of their increasingly diverse customer base, we purchase participations in agribusiness loans from other System entities and participate in syndicated agribusiness loans with other financial institutions.

A large portion of Agribusiness loan volume financing grain and farm supply cooperatives is seasonal. This seasonal loan volume is affected by a number of factors, including grain volume, commodity prices, producer selling patterns, transportation availability, and the relationship between cash and futures prices in the grain commodities markets. Agribusiness loan volume generally reaches a seasonal low in late summer or early fall. Harvest financing demands result in loan volume increases beginning in the late fall of each year. Peak loan volume typically occurs early in the year when our cooperative customers pay producers' deferred grain payables.

While market conditions are generally favorable in many sectors of the agricultural industry we serve, our Agribusiness customers face challenges resulting from ongoing volatile commodity prices for most major commodities, supply chain disruptions, labor shortages, inflation, higher interest rates, weather-related events, evolving domestic and global market demand, increasing regulation and currency fluctuations. These challenges, along with the need to attract high-quality leadership, manage risk, and remain competitive, have led many of our cooperative customers to consolidate and merge, enter into joint ventures, or form alliances to develop new markets. This consolidation trend has, in some cases, resulted in larger individual and attributed credit commitments. We meet our customers' financing needs by maintaining appropriate credit exposure to individual customers and partnering with System entities and commercial banks in loan syndications and participations. We also focus on serving mission-related entities, including small and start-up cooperatives, and supporting our Farm Credit partners in their lending to young, beginning and small (YBS) farmers and ranchers.

The Agribusiness segment includes our Agricultural Export Finance Division (AEFD), which provides trade finance to support U.S. exporters of agricultural products. Obligors consist primarily of financial institutions in foreign countries (primarily emerging markets) who support our exporting customers in selling and shipping agricultural products to international markets. Expanding the export of U.S. agricultural products is an important component of supporting the U.S. economy and the balance of trade with foreign trading partners. The AEFD utilizes the U.S. government-sponsored export loan guarantee General Sales Manager (GSM) program for a portion of its export financing. As of December 31, 2022, the AEFD had $8.6 billion in loans outstanding, 27 percent of which were guaranteed by the U.S. government under the GSM program, compared to $6.1 billion in loans outstanding as of December 31, 2021, 19 percent of which were guaranteed under the GSM program. The increase in AEFD loan volume was primarily driven by higher demand for export financing of U.S. agricultural products during 2022. Over the last several years, the mix of volume in AEFD has shifted toward a higher level of non-guaranteed volume reflecting a decline in the competitiveness of the GSM program coupled with our ability to support an increasing level of non-guaranteed export finance transactions. We further mitigate our exposure for certain AEFD lending transactions by purchasing credit enhancement from non-government third parties.

The Agribusiness segment also includes Farm Credit Leasing Services Corporation (FCL), a wholly-owned subsidiary which provides leases and lease-related products and financial services to agribusinesses, agricultural producers, Association partners, and rural infrastructure companies. As of December 31, 2022 and 2021, FCL had $3.8 billion and $3.9 billion, respectively, in leases outstanding.

2022 Performance

Agribusiness loans outstanding increased to $40.1 billion at December 31, 2022, compared to $38.1 billion at December 31, 2021. Average loan volume increased 15 percent to $43.3 billion in 2022 from $37.7 billion in 2021. The increase in outstanding loan volume primarily reflected higher lending to agricultural export finance customers. Growth in average loan volume reflected higher levels of financing due to higher commodity prices during 2022, particularly earlier in the year, as well as increases in lending to food and agribusiness customers and agricultural export finance customers.

As previously mentioned, the level of seasonal lending within our Agribusiness operating segment can fluctuate significantly from period to period and is impacted by numerous factors, including commodity prices and inventory levels. The following table shows five-year price trends for certain grain commodities. Prices represent the yearly high and low "nearby" futures price per bushel for corn, soybeans and wheat. Nearby futures contracts represent those contracts with the nearest settlement date.

Year Ended December 31,	2022	2021	2020	2019	2018
Commodity					
Corn:					
High	**$ 8.13**	$ 7.70	$ 4.84	$ 4.55	$ 4.12
Low	**5.64**	4.92	3.12	3.40	3.30
Soybeans:					
High	**17.69**	16.70	13.11	9.40	10.71
Low	**13.01**	11.57	8.22	7.91	8.11
Wheat:					
High	**12.94**	8.29	6.41	5.58	5.93
Low	**7.29**	5.92	4.76	4.18	4.13

Our Agribusiness segment generated $774.1 million in net income for 2022, a $97.2 million increase from $676.9 million in net income for 2021. This increase was due to increases in net interest income and noninterest income somewhat offset by a higher provision for loan losses and an increase in operating expenses.

Net interest income in our Agribusiness segment increased $122.4 million to $1.054 billion in 2022 as compared to $931.2 million in 2021 primarily due to higher average loan volume driven by higher commodity prices. To a lesser extent, higher earnings on balance sheet positioning also contributed to the increase in net interest income, partially offset by lower spreads in certain lending portfolios.

We recorded a $71.5 million provision for loan losses in our Agribusiness operating segment in 2022, compared to a $16.0 million provision for loan losses in 2021. The 2022 provision for loan losses primarily related to increased lending activity and to a lesser extent higher specific reserves for a small number of customers. The 2021 provision for loan losses reflected increased lending volume and to a lesser extent deterioration in credit quality, partially offset by a decrease in COVID-19 related reserves.

Overall Agribusiness credit quality remains strong. However, we believe deterioration could result from market factors impacting our customers, including an ongoing volatile agricultural commodity price environment, supply chain disruptions, labor shortages, inflation, higher interest rates, downward pressure on farm income, weather-related events and uncertainties associated with changing government policies. In addition, concentrations within our loan portfolio can cause the level of our loan quality, nonaccrual loans, charge-offs and provisions for loan losses or loan loss reversals to vary significantly from period to period. Agribusiness nonaccrual loans increased to $136.7 million at December 31, 2022 as compared to $73.9 million at December 31, 2021 due to a limited number of loans which were transferred to nonaccrual status during 2022 including loans made to certain customers in grain supply and food and agribusiness. Agribusiness recorded gross charge-offs of $21.2 million in 2022 compared to $3.6 million for 2021. Charge-offs in 2022 were primarily driven by loans to a limited number of agribusiness customers that experienced financial difficulty and the remainder of the charge-offs were due to a limited number of customers. The 2021 charge-offs largely related to a small number of agribusiness and leasing customers who experienced financial distress. Gross recoveries were $1.3 million in 2022 compared to $4.3 million in 2021.

Noninterest income in our Agribusiness segment increased by $93.2 million to $213.4 million in 2022 from $120.2 million in 2021 largely due to higher patronage income, lower losses on early extinguishments of debt, net of prepayment income, and lower losses on sales of investment securities. The 2021 period also included an expense for litigation that was settled in January 2022.

Operating expenses in our Agribusiness segment increased by $58.5 million to $361.5 million in 2022 from $303.0 million in 2021, primarily due to an increase in Insurance Fund premium expense and to a lesser extent higher information services, purchased services and travel and entertainment expenses as described on page 39.

Agribusiness income tax expense increased to $59.8 million in 2022, as compared to $55.6 million in 2021. The increase was primarily due to an increase in earnings attributable to taxable business activities in 2022 resulting from higher net interest income.

Farm Credit Banking

Overview

The Farm Credit Banking operating segment includes wholesale loans from the direct funding relationships we have with our affiliated Association customer-owners and our wholesale funding relationships with other System institutions. As of January 1, 2023, we had 17 affiliated Associations operating in 23 states serving the Northwest, West, Southwest, Rocky Mountains, Mid-Plains, and Northeast regions of the United States. We have seen a number of mergers among affiliated Associations in recent years as Associations look for ways to continue to fulfill their mission in a safe and sound manner, while more efficiently providing value-added products and services to their member owners.

Developing and maintaining strong relationships with Farm Credit Associations and other System institutions is an important strategic focus for the Bank. By working together, the Bank and Associations collectively provide credit and non-credit services to a more diverse set of customers. We maximize the value of these strategic relationships by combining the Associations' strong market presence and local relationship management with our complementary product suite and lending capacity. Our relationships with Associations provide an important competitive advantage in attracting and retaining customers and in fulfilling our collective mission to support agriculture, rural infrastructure and rural communities.

2022 Performance

As of December 31, 2022, loans in the Farm Credit Banking operating segment increased to $71.5 billion, compared to $65.6 billion at December 31, 2021. Average loan volume increased 11 percent to $67.9 billion in 2022 compared to $61.3 billion in 2021. The increase in outstanding and average loan volume primarily resulted from greater overall lending to agricultural producers and processers by our affiliated Associations and the impact of affiliated Associations funding a higher level of syndicated loans and purchased participations. At year-end 2022 and 2021, these loans included $65.8 billion and $60.5 billion, respectively, in wholesale loans to our affiliated Associations and $5.7 billion and $5.1 billion, respectively, of participations in wholesale loans made by other System banks to certain of their affiliated Associations. Such participations included $4.4 billion and $3.9 billion as of December 31, 2022 and 2021, respectively, in wholesale loans made by the Farm Credit Bank of Texas (FCBT). The balance of participations of $1.3 billion and $1.2 billion as of December 31, 2022 and 2021, respectively, represent wholesale loans made by AgFirst Farm Credit Bank.

Farm Credit Banking operating segment net income increased to $251.2 million in 2022, compared to $245.6 million for 2021. The increase primarily resulted from higher net interest income.

Net interest income in our Farm Credit Banking operating segment increased to $291.1 million in 2022 as compared to $284.7 million in 2021 primarily due to growth in average loan volume.

As a wholesale lender to Associations, we benefit from the diversification of the Association loan portfolios and a strong collateral position. In addition, the earnings, capital and loan loss reserves of the Associations provide an additional layer of protection against losses in their respective loan portfolios. Lower spreads in the Farm Credit Banking operating segment are commensurate with the lower risk profile and lower regulatory capital requirements. Notwithstanding the Special Mention credit quality classification of one affiliated Association wholesale loan, loan quality in Farm Credit Banking remains strong. No provisions for loan losses or allowance for credit losses have been recorded related to any of our wholesale loans to Associations.

Farm Credit Banking noninterest income increased to $8.9 million in 2022 from $7.2 million in 2021 resulting from prepayment income, net of losses on extinguishments of debt, in 2022. Losses on early extinguishments of debt are generally incurred to offset the current and future impact of prepayments of loans and investments, which is dependent upon market availability of similarly-tenored debt.

Operating expenses in 2022 increased to $48.9 million from $46.3 million in 2021 primarily due to an increase in Insurance Fund premium expense.

Farm Credit Banking has no income tax expense as the earnings on its business activities are statutorily tax-exempt.

Rural Infrastructure

Overview

The Rural Infrastructure operating segment includes loans and other financial services provided to cooperatives and other companies in the power and energy, communications, water and waste industries as well as to community facilities in rural America. Primary products and services provided include term loans, bonds, revolving lines of credit, letters of credit, project finance, capital markets services, as well as risk management, cash management and investment products.

There are significant needs for investment in infrastructure to support businesses and residents in rural communities. Traditional sources of investment capital, including public sector financing, may not be available or sufficient to meet those needs. As a part of our congressionally-mandated mission, CoBank provides credit and financial services to meet rural infrastructure needs, including in partnership with other System entities, commercial banks and government entities. In particular, CoBank regularly partners with the U.S. Department of Agriculture (USDA) through co-lending, participates in USDA loan guarantees and refinances USDA loans. These activities target rural water and waste systems, irrigation districts, community facilities, rural energy projects and rural broadband. CoBank will continue to pursue additional opportunities to invest in rural infrastructure to allow rural businesses to compete in a global marketplace and to improve the quality of life in rural communities. In 2022, the U.S. Congress passed the Inflation Reduction Act, which is designed to provide funding to climate-positive infrastructure projects across the industries we serve. In 2021, the U.S. Congress passed the Infrastructure Investment and Jobs Act, which over the long-term will inject trillions of dollars of infrastructure spending. The Inflation Reduction Act and Infrastructure Investment and Jobs Act could increase loan demand across a broad range of infrastructure industries we serve.

Power and energy industry customers include rural electric generation and transmission cooperatives, midstream energy and gas pipeline providers, electric distribution cooperatives, renewable energy providers, independent power producers, regulated utilities and investor-owned utilities. While demand for electricity has been relatively stagnant over the past decade and has declined more recently in the commercial and industrial sectors since the onset of COVID-19, loan demand continues to grow as our customers make infrastructure enhancements and technology driven investments to meet long-term system requirements, improve system reliability, develop renewable energy and maintain compliance with environmental and regulatory mandates. Growth in renewable energy projects and environmental mandates also contribute to loan demand from project finance customers. In addition, many electric distribution cooperatives are investing in broadband infrastructure to enable smart grid technologies and to provide their local communities with reliable high-speed internet.

Communications industry customers include companies providing local wireline and wireless broadband services, long-haul and middle-mile fiber transport, and data center and cloud-based products to rural communities. Our customers also include regional and national communications providers with networks that are globally interconnected, who are essential to bringing services to rural America through their partnerships and contractual relationships with our rural customers. Loan demand is driven by capital spending by wireline and wireless broadband infrastructure providers to meet the growing demand for high-speed data. Loan demand also results from merger and acquisition activity, including strategic acquisitions seeking scale, and from private equity and infrastructure funds establishing a greater presence in this competitive but growing industry. Broadband providers have experienced higher demand and a significant increase in internet usage as a result of the COVID-19 pandemic.

Water industry customers include rural water and waste companies. Capital expenditure growth in this industry continues primarily as a result of the need to replace aging infrastructure and to meet higher standards for water quality. While government programs have traditionally provided grants and financing, private lending opportunities for construction or interim financing have also emerged, often as a bridge to government grants or loans. Demand for water has also shifted from commercial to residential use, altering needs for many water authorities. With the continuing need for plant upgrades and expected limitations on the availability of government funds, we expect private lending to this industry to continue to grow.

In partnership with other System entities and community banks, we provide funding to rural community facilities including rural health care facilities. We also make equity investments in certain Rural Business Investment Companies (RBICs). Our investments in RBICs focus on small and middle market companies that create jobs and promote commerce in rural America.

2022 Performance

Rural Infrastructure loans outstanding increased to $28.5 billion at December 31, 2022 compared to $24.8 billion at December 31, 2021. Average loan volume increased 6 percent to $25.7 billion in 2022 compared to $24.4 billion in 2021. The increase in loan volume primarily related to electric distribution, communication and rural power customers.

Rural Infrastructure net income increased to $423.3 million for 2022 from $391.7 million for 2021. The increase was primarily driven by higher net interest income and noninterest income somewhat offset by a higher provision for loan losses and an increase in operating expenses.

Net interest income increased to $539.2 million in 2022 from $510.0 million as compared to 2021, primarily due to growth in average loan volume and higher earnings on balance sheet positioning partially offset by lower spreads in certain lending portfolios.

Rural Infrastructure recorded a provision for loan losses of $39.5 million in 2022 compared to a provision of $2.0 million in 2021. The 2022 provision for loan losses primarily related to a reserve for a limited number of power infrastructure loans that were subsequently charged off and to a lesser extent deterioration in credit quality in certain portfolios. The 2021 provision for loan losses primarily reflected higher specific reserves for a small number of our electric power customers resulting from severe winter storms that occurred in Texas in 2021 somewhat offset by an improvement in credit quality in our rural energy and communications portfolio sectors.

Nonaccrual loans in Rural Infrastructure decreased to $8.7 million at December 31, 2022 compared to $48.7 million at December 31, 2021 primarily due to a charge-off of a limited number of power infrastructure loans described above, communications loans which returned to accruing status and the sale of several rural energy loans. Our nonaccrual loans are typically composed of a relatively small number of customers, and thus the balances can fluctuate significantly based on a small number of transactions. Rural Infrastructure recorded gross charge-offs of $23.7 million in 2022 as compared to $2.6 million in 2021. Charge-offs largely related to a power infrastructure customer that experienced financial difficulty in 2022 and a limited number of rural energy customers in 2021. Gross recoveries were $0.8 million in 2022 and $8.5 million in 2021.

Noninterest income increased to $143.8 million in 2022 from $71.4 million in 2021 driven by higher patronage income, fee income, prepayment income, net of losses on early extinguishments of debt, and lower losses on sales of investment securities. Noninterest income in 2021 also included an expense relating to litigation that was settled in January 2022.

Rural Infrastructure operating expenses increased to $169.5 million in 2022 from $141.1 million in 2021 primarily due to an increase in Insurance Fund premium expense and to a lesser extent higher information services, purchased services and travel and entertainment expenses, as described on page 39.

Rural Infrastructure income tax expense increased to $50.7 million in 2022 as compared to $46.5 million in 2021. The increase was primarily due to an increase in earnings in 2022 resulting from higher net interest income.

Enterprise Risk Profile

Managing and optimizing risk to our earnings, capital and enterprise value are essential components of successfully operating the Bank. Our primary risk exposures are credit, market, liquidity, operational, strategic, reputation, and regulatory and compliance. Credit risk is the risk arising from changes in a customer's or a counterparty's ability or willingness to repay funds borrowed, or otherwise meet agreed-upon obligations. Market risk is potential for losses arising from changes in the value of CoBank's assets and liabilities resulting from movements in interest rates, basis risk, equity positioning, differences between the timing of contractual maturities, re-pricing characteristics, credit spreads, and prepayments on assets and their related liabilities. Liquidity risk is the risk arising from the Bank's inability to repay its obligations, or issue new obligations to fund borrowers. Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems, human factors or from external events. It can include risk of human errors or misconduct, fraud, inadequate data, systems and technology or process failures including external cyber risks impacting our technology platforms, business data and operational processes or those affecting critical vendors and customers. Strategic risk is the risk arising from adverse business decisions or lack of responsiveness to changes in the banking/operating environment. Reputation risk is the risk arising from negative external perception and loss of public confidence. Regulatory and compliance risk is the risk arising from failure to comply with laws or regulations.

Business segments and support units have the responsibility of identifying, monitoring and managing these risks. The Risk Management Group provides independent oversight and support in the establishment of a risk management framework across the organization. The Risk Management Group is led by the Chief Risk Officer (CRO) and includes the Credit Management, Enterprise Risk Management, Compliance & Financial Crimes, Business Continuity, and Enterprise Security Divisions. The Risk Management Group works to identify, measure, monitor, control and report the Bank's primary risk exposures against limits and tolerance levels to senior management and the Board of Directors.

The following is a discussion of these primary risks, and our approach to managing them.

Credit Risk Management

Credit risk exists in our lending, leasing, treasury and investing, cash management, custody, settlement, and derivatives activities. Credit risk in these activities arises from changes in a customer's or counterparty's ability or willingness to repay funds borrowed or to meet agreed-upon financial or contractual obligations. Credit risk may be further impacted by changes in collateral values, changes in the prevailing economic environment, fraud, changes in the value of investment securities, changes in the creditworthiness of investment obligors and decreases in the value of underlying collateral securing investment securities.

We actively manage credit risk through a Board-approved loan portfolio strategy, a structured and centralized credit approval process, a disciplined risk management process, and a sound credit administration program, while considering our responsibility to fulfill our mission of service to rural America. We have established comprehensive credit guidelines and procedures to ensure consistency and integrity of information related to the credit risk in our loan, lease, investment and derivatives portfolios.

Various groups and committees within CoBank have a role in managing credit risk, as described below. Our Board of Directors establishes overall lending and leasing, investment, derivatives and allowance for credit losses policies. It also approves the portfolio strategy and capital adequacy plan and reviews loan volume, loan quality trends, significant high-risk or stressed loans, and the credit quality of our investment and derivatives portfolios.

The CoBank Loan Committee (CLC), which is appointed by the President and Chief Executive Officer (CEO), and includes the Chief Credit Officer (CCO) and senior management of the Credit Management Division and the lending groups, holds ultimate credit authority as authorized by Board policy and provides oversight of all credit activities. The CLC delegates lending authorities to specific committees or groups of individuals based on size of exposure and risk rating. The CLC also approves certain limits for investment obligors and derivative counterparties. It acts on individual credit approvals or administrative matters and approves exceptions if conditions warrant.

The Credit Management Division is led by the CCO, who reports to the CRO. The Credit Management Division oversees the establishment of concentration and portfolio limits and manages the credit approval process within those limits pursuant to Board policies. The Credit Management Division reviews and approves transactions in accordance with certain delegated approval authorities to ensure conformity with the Bank's established lending policies and guidelines. It also recommends and approves limits with respect to investment obligors and derivative counterparties and manages significant high-risk or stressed loans.

The Risk Management Group oversees the development of the portfolio strategy, the analysis of the allowance for credit losses and other risk-based modeling and metrics. In addition, the Risk Management Group provides quarterly reporting on the Bank's risk appetite and exposures and an annual risk assessment. Both reports include monitoring and assessment of credit risk.

Although they do not report to the CRO, the heads of Internal Audit and Asset Review have a direct reporting responsibility to the Audit Committee of the Board of Directors. They provide independent reporting to the Board of Directors on the quality of the Bank's assets, the Bank's system of internal controls, and material audit and review findings.

The Asset and Liability Committee (ALCO), which includes the CEO, Chief Financial Officer (CFO), CRO, Chief Banking Officer (CBO), CCO, Treasurer, Executive Vice President of Farm Credit Banking, Executive Vice President of Corporate Agribusiness Banking, and Senior Vice President of Capital Markets, monitors credit risk within the investment portfolio and reviews counterparty credit risk arising from derivative transactions.

The Country Risk Committee (CRC) is appointed by the CEO, and includes the CRO, CBO and the CCO. It oversees the methodologies for setting country risk grade and establishing maximum country limits, as well as the approval of individual country risk ratings and limits.

Credit Risk Related to Loans

The key elements of our credit risk management related to lending include our portfolio strategy, the credit approval process, and the use of exposure and concentration limits, each of which is explained below.

Portfolio Strategy

The portfolio strategy provides overall guidance on lending activities and strategies over the next three years, consistent with our strategic business objectives and the Bank's risk appetite. It articulates how we will fulfill our congressionally-mandated mission in a safe and sound manner by managing to the Board-established financial baselines, optimizing the allocation of our risk appetite and resources, and providing an appropriate return on our shareholders' equity by effectively balancing loan growth with profitability and credit risk. Our mission includes supporting our Associations' YBS farmers, small rural infrastructure entities, start-up cooperatives, local food programs, rural community development, and renewable energy projects. The portfolio strategy helps ensure that CoBank is inclusive in its outreach to all marketplace segments whether it be through lending or investment activities or our corporate social responsibility program.

As part of the annual business and financial planning process, the Board of Directors reviews and approves the Bank's portfolio strategy. Management analyzes performance with respect to the portfolio strategy quarterly and reports the results to the Board of Directors.

Credit Approval

The most critical element in managing and controlling credit risk is the initial decision to make a loan and the resulting structure and terms of the relationship with the borrower.

We place significant emphasis on the evaluation and understanding of a borrower's business and management in the initial credit analysis and the approval process. We emphasize cash flow and repayment capacity as primary sources for repayment of loans, including cash generated from the sale of agricultural commodities as it relates to seasonal lending. Collateral is normally considered a secondary source of repayment. In circumstances where the credit decision places substantial reliance on collateral to repay the loans, independent appraisals may be used to assist in the collateral valuation. Such appraisals are conducted in accordance with FCA regulations and professional appraisal standards.

For wholesale lending within our Farm Credit Banking operating segment, the earnings, capital and loan loss reserves of Associations provide an additional layer of protection against losses in their respective loan portfolios. Loans to our affiliated Associations are governed by a General Financing Agreement, as described in Note 18.

Management assigns a risk rating to each borrower based on two primary measurements: the probability of default (PD) rating and loss given default (LGD) rating. The PD rating system uses a 14-point scale of 1 (highest quality) to 14 (lowest quality). The PD rating is determined by the financial characteristics of the borrower and reflects the probability of default driven by several considerations, including business risk, industry risk, management capability and financial condition. The LGD rating is intended to approximate the degree of potential loss in the event the borrower defaults.

Exposure and Concentration Limits

We use exposure and concentration limits to manage risk and volatility in the loan portfolio. Exposure to individual borrowers and related entities is managed through a risk matrix that considers the dollar exposure, PD, LGD, and type of exposure of the borrower. Individual borrower exposures are typically established at the time of loan origination or renewal, with risk ratings formally reviewed at least annually. The dollar exposure, PD, LGD and type of credit extended further determine the delegated level of authority required to approve the credit. These individual borrower exposures are then further subject to total portfolio limits on exposure to different industries and/or countries. Exposure limits for different industries are reviewed quarterly while exposure limits for different countries are reviewed annually. We allow for more frequent evaluation when appropriate. Exceptions to these exposure limits may be granted by the CLC or the CRC if conditions warrant.

We also manage credit exposures and concentrations in our loan portfolio by syndicating loans and by selling and purchasing loan participations. Our capabilities in syndicating loans and in selling and purchasing loan participations are critical to dynamically managing the loan portfolio, maintaining market discipline, meeting our customers' needs and fulfilling our mission.

While we believe these standards, processes and tools are appropriate to manage our credit risk, there is no assurance that significant deterioration in loan quality will not occur, which could reduce our future earnings.

We are limited to making loans and leases, and providing related financial services to eligible borrowers in certain specified industries, as mandated by the Farm Credit Act. As a result, we have a concentration of loans to the agricultural and rural infrastructure industries.

The significant risk factors affecting credit conditions in these industries within each of our operating segments are described below.

Agribusiness

The relationship of demand for and supply of U.S. agricultural products in the global marketplace can significantly impact the volume, earnings and loan quality of our Agribusiness operating segment. Global trade flows and government policies on trade can impact the pricing of commodities, costs of input products and supply chains of Agribusiness customers.

Volatility in the prices and supplies of agricultural commodities and associated inputs required to produce the commodities can affect the profitability and loan quality of our Agribusiness customers. Such volatility results from, among other factors, seasonal and cyclical weather conditions, domestic and global economic growth expectations, the availability of transportation, labor shortages, inflation, global production and supply levels, financial investment in the commodity futures markets by non-agricultural interests, changing export markets and the effect of trade policies, government support programs, and currency exchange rates. Market prices for food products and changing consumer demands also have a significant effect on a number of customers within our Agribusiness operating segment.

Extreme weather conditions can substantially impact harvest volume and prices of agricultural products and, ultimately, impact the credit quality of some of our agribusiness borrowers and our Associations' borrowers as their earnings are affected. Although certain crop losses resulting from weather conditions are mitigated for producers by multi-peril crop insurance, not all crops are covered by insurance. To the extent weather adversely impacts the agricultural sector, the risk of loss in our loan portfolio may increase, which could reduce our earnings. In addition, biological or disease risk in human, livestock or crop populations can impact the supply of and demand for agricultural products as evidenced by the COVID-19 pandemic. Certain customers also have exposure to counterparties in the commodities exchange markets. The increasing focus on climate change by investors, regulators and legislators may also impact borrowers in the Agribusiness operating segment in a manner that may require changes to their existing business models and operations.

Major international events, including military conflicts, terrorism, political, geopolitical, currency and global economic disruptions, and trade policies and agreements can affect, among other things, the price and demand for commodities or products used or sold by our borrowers or their access to markets. While the Russia/Ukraine war has created agricultural commodity price volatility in the marketplace and has had implications for grain and farm supply cooperatives, we have not experienced any significant unfavorable credit quality impacts at this time. Such events may also impact country risk, cross border risk or repayment ability of foreign counterparties in our agricultural export finance lending portfolio. Country risk is the risk that economic, social, and political conditions and events in a foreign country will affect the current or projected financial condition or resilience of a correspondent customer bank. Cross border risk encompasses convertibility and transfer risks. Convertibility risk exists when the ultimate source of repayment is unable to convert its local currency into the currency of payment due to government restrictions or actions. Similarly, transfer risk is the possibility that an asset cannot be serviced in the currency of payment because of a government action limiting the transferability of foreign currency.

U.S. agriculture has historically received financial support from the U.S. government through direct payments, crop insurance and other benefits. The Agricultural Improvement Act of 2018 (the Farm Bill) was signed into law in December 2018 and amends and extends major programs for crop insurance, food and nutrition, land conservation, trade promotion, rural development, research, forestry, horticulture, and other miscellaneous programs administered by the USDA for five years through 2023. Although most of our direct customers do not generally receive support payments from federal programs, a significant reduction or elimination of support in the future could have a negative impact on the loan quality of certain borrowers, including Associations, who derive a significant share of their earnings from farmers and other producers who could be affected by such a reduction. Other political, legislative and regulatory activities may also impact the level or existence of certain government programs that support agriculture. In addition, government policies, regulatory focus and investor advocacy related to climate change, may have an impact on agribusiness producers and processors.

Farm Credit Banking

The risk factors previously discussed in the "Agribusiness" section can also affect loan quality at Associations; however, the impact of such factors on farmers and other producers served by Associations may not be the same as the impact on cooperatives and other customers served by our Agribusiness operating segment. The loan quality within our Farm Credit Banking operating segment is enhanced by our strong collateral position and the earnings, capital and loan loss reserves of the Associations, which provide an additional layer of protection against losses they may have in their loan portfolios.

Rural Infrastructure

Downturns in the general economy, and the rural economy in particular, can reduce commercial, industrial and residential demand for services and negatively affect customers in our Rural Infrastructure operating segment.

Fluctuating weather conditions, energy efficiency initiatives, changing regulatory constructs, the relative cost and price volatility of various fuel sources, the advent of distributed generation sources and other technological disruptors, the growth and integration of renewable power sources and protracted low growth of electricity demand can adversely affect our customers in the power industry. The pace and degree of the restructuring and optimization of the electric power industry in the United States may also impact future loan quality. Climate change focus of investors, regulators and legislators may also impact borrowers in the Rural Infrastructure operating segment in a manner that may require changes to their existing business models and operations. For example, it may place constraints on generation technologies that produce carbon and favor renewable clean energy technologies.

The communications industry is impacted by intense competition, evolving technology, and changing customer demands. Regulatory and legislative changes may also impact the competitive position of our communications borrowers. These factors may place downward pressure on cash flows, asset valuations and access to capital, which could adversely impact the quality of our loan portfolio. In addition, decreased cash flows and the resultant impact on asset valuations, the inability to successfully integrate acquired companies, or the lack of availability of debt and equity capital could adversely affect certain communications customers.

The water industry faces high capital expenditure requirements due to environmental regulation, aging infrastructure and reduced levels of government support. Top-line revenue growth is also a concern for the water industry given the decline in per capita residential water usage resulting from conservation measures and increased use of water efficient appliances. The inability to adjust rate structures and address the misalignment of rising fixed costs and flat to declining variable revenues, without sacrificing affordability, could adversely affect certain water customers.

Credit Quality Conditions and Measurements in Our Loan Portfolio

The following table presents loans and accrued interest receivable classified by management pursuant to our regulator's Uniform Loan Classification System, as a percent of total loans and accrued interest.

Loan Quality Ratios

	December 31, 2022			December 31, 2021		
	Wholesale Loans[1]	Commercial Loans[2]	Total Bank	Wholesale Loans[1]	Commercial Loans[2]	Total Bank
Acceptable	**97.76 %**	**96.70 %**	**97.24 %**	97.67 %	96.19 %	96.94 %
Special Mention	**2.24**	**1.81**	**2.03**	2.33	2.35	2.34
Substandard	**-**	**1.49**	**0.73**	-	1.46	0.72
Doubtful	**-**	**-** [3]	**-** [3]	-	- [3]	- [3]
Loss	**-**	**-**	**-**	-	-	-
Total	**100.00 %**	**100.00 %**	**100.00 %**	100.00 %	100.00 %	100.00 %

(1) Represents loans in our Farm Credit Banking operating segment

(2) Represents loans in our Agribusiness and Rural Infrastructure operating segments

(3) Represents less than 0.01 percent of commercial loans and total Bank loans and accrued interest

Our overall loan quality measures remain strong at December 31, 2022. Special Mention loans and accrued interest improved to 2.03 percent of total loans and accrued interest at December 31, 2022 compared to 2.34 percent at December 31, 2021. The level of adversely classified loans ("Substandard", "Doubtful" and "Loss") and related accrued interest as a percent of total loans and accrued interest were 0.73 percent at December 31, 2022, compared to 0.72 percent at December 31, 2021. Adversely classified loans and accrued interest increased in our Agribusiness operating segment in 2022 due to deterioration in credit quality for a small number of customers. This was mostly offset by lower adverse assets in our Rural Infrastructure operating segment due to charge-offs and sales of a limited number of loans.

Summary of High-Risk Assets ($ in Thousands)

December 31,	2022	2021	2020	2019	2018
Nonaccrual Loans	**$ 145,378**	$ 122,631	$ 117,401	$ 240,683	$ 326,288
Accruing Loans 90 Days or More Past Due	**14,924**	2,738	736	5,691	1,685
Accruing Restructured Loans	**5,538**	-	-	6,192	-
Total Impaired Loans	**165,840**	125,369	118,137	252,566	327,973
Other Property Owned	**3**	3	3	3	3
Total High-Risk Assets	**$ 165,843**	$ 125,372	$ 118,140	$ 252,569	$ 327,976

Total nonaccrual loans increased to $145.4 million at December 31, 2022 compared to $122.6 million at December 31, 2021. The increase was due to a small number of agribusiness loans transferred to nonaccrual status partially offset by the charge-off and sales of a limited number of rural infrastructure loans. Our nonaccrual loans are typically composed of a relatively small number of customers, and as such, the balances can fluctuate period to period based on a small number of loans and leases. Nonaccrual loans as a percent of our total loan portfolio were 0.10 percent as of December 31, 2022 and 2021. Over the past 10 years, nonaccrual loans have averaged 0.18 percent of the total loan portfolio.

Accruing restructured loans increased to $5.5 million at December 31, 2022 compared to none at December 31, 2021 and represent a limited number of agribusiness loans at the end of the 2022 period. Accruing loans 90 days or more past due increased to $14.9 million at December 31, 2022 from $2.7 million driven by certain leasing customers.

At December 31, 2022, Special Mention loans included a $1.6 billion wholesale loan to one of our affiliated Associations. Pursuant to our regulatory requirements, we classify our wholesale loans using the same Uniform Loan Classification System used for our commercial loans. Our loans to Associations are collateralized by substantially all of the Association assets. In addition, the earnings, capital and loan loss reserves of the Associations provide additional layers of protection against losses in their retail loan portfolios. While the Special Mention classification primarily reflects internal control and other operational weaknesses at this Association, as a result of the collateralization and other mitigants described on page 44, we do not anticipate any losses related to this wholesale loan. As of December 31, 2022, CoBank has not made any provision for loan loss or recorded any allowance for credit loss related to any of our wholesale loans to Associations.

Gross charge-offs were $44.9 million in 2022 compared to $6.2 million in 2021. The 2022 charge-offs related to loans made to a limited number of power infrastructure and agribusiness customers that experienced financial difficulty, and to lesser extent a small number of other agribusiness, leasing and rural infrastructure loans. The charge-offs in 2021 primarily related to a small number of customers in our Agribusiness and Rural Infrastructure operating segments. Charge-offs have historically resulted from a relatively small number of customers, and as a result, can fluctuate significantly period to period based on a small number of loans and leases.

Our allowance for credit losses totaled $825.0 million and represented 0.59 percent of total outstanding loans at December 31, 2022 and 2021. Our allowance for credit losses represented 1.24 percent and 1.22 percent of non-guaranteed loans outstanding, excluding wholesale loans to Associations at December 31, 2022 and 2021, respectively.

As part of our overall assessment of risk in the loan portfolio and the allowance for credit losses as of December 31, 2022, we have considered a wide variety of factors, including the macroeconomic environment and disruptions related to global unrest; volatile commodity prices and supplies; labor shortages; supply chain disruptions; weather-related events; trade uncertainty; global economic uncertainty; the impact of changes in tariffs; a significant level of industry, borrower and attributed concentration risk resulting from our defined mission of service to rural communities and agriculture; and the imprecision inherent in estimating losses within our loan portfolio.

See "Critical Accounting Estimates – Allowance for Credit Losses" on page 72 for a more complete description of our process to determine the adequacy of our allowance for credit losses.

Credit Risk Related to Investments and Derivatives

We minimize credit risk in our investment portfolio by investing primarily in securities issued or guaranteed by the U.S. government or a government-sponsored enterprise (U.S. Agency). At year-end 2022, 49 percent of our $33.1 billion investment portfolio consisted of securities that carry a full faith and credit guarantee of the U.S. government. Such securities include mortgage-backed securities (MBS) issued by the Government National Mortgage Association (Ginnie Mae), the Export-Import Bank of the United States securities and the U.S. Treasury and other debt securities, including securities backed by guaranteed portions of Small Business Administration loans. Approximately 46 percent of our investment portfolio consisted of securities issued by a U.S. Agency, including MBS and/or U.S. Agency debt issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks (FHLB).

Included within our U.S. Agency MBS portfolio are FHA/VA wrapped "reperformer" MBS where residential mortgage loans serving as collateral were cured after a default. The underlying loans supporting the FHA/VA wrapped reperformer MBS are approximately 90 percent government guaranteed or insured, and are further supported by guarantees from either Fannie Mae or Freddie Mac. These FHA/VA wrapped reperformer MBS totaled $67.6 million at December 31, 2022.

Credit risk in our investment portfolio primarily exists in the remaining 5 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which currently include certificates of deposit, asset-backed securities (ABS) backed by pools of prime auto loans and corporate bonds of midstream energy and communication companies. The midstream energy and communication corporate bonds are purchased under lending authorities and not held for liquidity purposes. Our ABS and midstream energy and communication corporate bonds collectively total $825.3 million of our total investment portfolio as of December 31, 2022. Credit risk in our investment portfolio also arises in a portion of our short-term investments, which include our overnight bank deposits and federal funds sold which are transacted with highly-rated commercial bank counterparties.

We recorded no other-than-temporary impairment losses on our investment securities in 2022, 2021 and 2020. The credit quality of our investment portfolio as of December 31, 2022 is more fully discussed in "Liquidity and Capital Resources" beginning on page 66.

The use of derivative instruments exposes us to counterparty credit risk. Generally, when the fair value of a derivative contract is positive, we are exposed to credit risk. Our counterparty credit risk arising from derivative transactions is managed within credit methodologies and limits approved by the CLC. Credit risk limits are established based on potential future exposure.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") requires certain derivative transactions to be cleared through a central clearinghouse and traded on regulated derivative execution facilities. The U.S. Commodity Futures Trading Commission (CFTC) has exempted certain qualifying derivatives entered into by end-users and financial cooperatives from these requirements. The exemptions do not cover all derivatives executed by CoBank and are generally limited to derivatives entered into in connection with loans and derivatives for customer-owners. CoBank has also voluntarily chosen to clear some derivative transactions for economic and risk management purposes. As a result, certain of our derivative transactions are cleared through a futures commission merchant (FCM) with a clearinghouse or central counterparty (CCP). CCPs have several layers of protection against default including initial and variation margin that is required to be posted by participants. FCMs prequalify counterparties to all cleared derivatives, set exposure limits for each counterparty and collect initial and variation margin or settlement payments daily for changes in the value of cleared derivatives. The margin and settlement payments collected from both parties to the derivative mitigates credit risk in the event of a counterparty default. Initial and variation margin or settlement payment requirements are set by and held for the benefit of the CCP. Additional initial margin may be required and held by the FCM in some instances. At December 31, 2022 and 2021, the notional amount of our cleared derivatives was $58.7 billion and $36.8 billion, respectively.

For derivatives with counterparties, other than customers, not cleared through a central clearinghouse, we minimize this risk by diversifying our derivative positions among various financial institution counterparties, using master netting agreements, and requiring collateral with zero thresholds and daily posting to minimize credit exposures. We evaluate the creditworthiness of each counterparty, establishing individual credit exposure limits, and deal exclusively with derivative counterparties that have an investment grade credit rating from a major credit rating agency. In addition, we monitor counterparty credit default swap spreads and other market-related information which may indicate reduced creditworthiness of a counterparty. Credit default swap spreads are considered when counterparty limits are established.

The net fair value of our derivatives with our dealer counterparties was a net asset at December 31, 2022, and was offset by the collateral we received from our dealer counterparties. At December 31, 2021 and 2020, the net fair value of our derivatives with our dealer counterparties was a net liability and was offset by collateral we posted to our dealer counterparties. The amount of losses related to derivatives we are exposed to in the event of nonperformance by dealer counterparties to our derivative positions is mitigated by collateral posted or held by us.

The forward interest rate curves used to project the future expected cash flows for the derivative positions are modeled under potential scenarios which increase and decrease interest rates within a 99 percent confidence interval. These rate scenarios are then used to further evaluate potential counterparty credit risk and to establish counterparty limits as well as ongoing measurement of overall counterparty or customer exposure (including loans). Employees who are independent of the derivative portfolio management team monitor the derivative exposures against approved limits. Exceptions to approved limits are reported to management. Changes to the counterparty limits must be approved by the appropriate delegated approval authority.

Notwithstanding our credit evaluation process and the maintenance of collateral agreements with our derivative counterparties, the failure of a counterparty to perform on its obligations could negatively impact our earnings. Furthermore, although our credit evaluations consider the possibility of default by a counterparty, our ultimate exposure to default by a counterparty could be greater than expected due to changes in market factors, including interest rates.

Customer derivative transactions are typically secured through our loan agreements. The notional amount of our derivatives, excluding related dealer offsets, and related exposure to customer counterparties were $13.5 billion and $68.8 million, respectively, at December 31, 2022 compared to $13.1 billion and $305.2 million, respectively, at December 31, 2021.

Market Risk Management

We are subject to market risk, defined as the risk to current or anticipated earnings or capital arising primarily from movements in interest rates. This risk primarily arises from our equity positioning strategy and differences in the timing between the contractual maturities, repricing characteristics, and prepayments of our interest-earning assets and the liabilities funding these assets. Market risk can also arise from embedded caps or floors in floating-rate investments and loans as well as differences between the interest rate indices used to price and fund our assets. Further, these existing market risks may be accentuated during the transition from the London Inter-Bank Offered Rate (LIBOR) to the Secured Overnight Financing Rate (SOFR) or other benchmark/reference rates. See further discussion regarding the LIBOR transition beginning on page 63.

We provide wholesale loans to our affiliated Associations to fund their lending and general corporate activities. The funding received by most of our affiliated Associations matches the terms and embedded options of those Associations' retail loans. This funding approach shifts the majority of the interest rate risk associated with retail loans from these Associations to the Bank where interest rate risk is managed centrally. Certain of our affiliated Associations, totaling 21 percent of our interest-earning assets, make use of a different funding approach with us and manage their own interest rate risk for their retail loans and investments as part of the Association's asset/liability management processes.

Our asset/liability management objective is to manage the mix of the Banks' interest-earning assets and interest-bearing liabilities consistent with strategies set by ALCO. A key objective is to stabilize our net interest income while optimizing profitability and insulating shareholders' equity from significant adverse fluctuations in market interest rates. While we actively manage our interest rate risk position within policy limits approved by the Board of Directors using strategies established by our ALCO, and within our risk appetite, there can be no assurance that changes in interest rates will not adversely impact our earnings and capital.

Underwriting risk is another type of market risk that may result from underwritten and committed lending transitions when the distribution and sale of loan inventory is executed at prices below par or expected levels due to changes in interest rates or credit spreads. This underwriting risk is mitigated primarily through the Bank's expertise in the core industry sectors we serve, sound market-based transaction structure and pricing with experienced and dedicated investors, and a defined governance framework including limits.

There is market risk related to our equity investments in RBICs and mission related investments held within our Rural Infrastructure operating segment described on page 45. This risk is mitigated by an investment committee approval process, exposure and concentration limits, diversification and other monitoring activities.

The following is a more detailed description of our primary interest rate risks and strategies used to mitigate those risks.

Equity Positioning Risk

Shareholders' equity serves as an interest-free source of funding for the balance sheet and thus requires that we make decisions about the maturity mix of the assets funded by it. Using equity to fund short-term assets results in increased volatility of net interest income, whereas using equity to fund long-term assets results in increased volatility in the market value of our equity.

Repricing Risk

Mismatches in interest rate repricing and maturities of assets and liabilities arise from the interaction of customer business needs, our investment portfolio composition and the mix of liabilities funding these assets. In addition, we may also undertake funding strategies designed to maximize earnings on our asset/liability position in certain interest rate environments, including using short-term liabilities to fund longer-term assets. However, funding longer-term assets with shorter-term liabilities exposes the Bank to changes in interest rates and spreads to market indices for debt issuances. If interest rates increase or spreads widen, income would be negatively impacted as higher cost funding is required to continue to fund the longer-term assets.

Exposure to changes in the level and direction of interest rates is managed by adjusting the Bank's mix of interest-sensitive assets and liabilities through various strategies and through the utilization of interest rate risk management products, including interest rate swaps and other derivatives. We do not use derivatives for speculative or trading purposes and regulatory requirements prohibit us from taking speculative derivative positions. Refer to page 57 for additional information related to derivatives.

Prepayment/Extension Risk

Prepayment risk in our loan portfolio exists in loans and investment securities (e.g., securitizations) that are considered fully prepayable. Approximately 27 percent of fixed-rate loans are fully prepayable. Prepayment risk in this portfolio results when intermediate and longer-term interest rates fall and prepayments increase as borrowers refinance to a lower rate. Prepayments can adversely impact loan portfolio income to the extent prepayments exceed the level of fixed-rate callable debt in the portfolio. Fixed-rate callable debt can be called in lower-rate environments, thus allowing liabilities to reprice at a lower rate. Approximately 80 percent of our fully prepayable loan portfolio is funded with callable debt, which lowers prepayment risk.

The remaining 73 percent of fixed-rate loans contain, at a minimum, make-whole prepayment penalties. These provisions require a borrower to compensate us for the cost we incur in retiring debt funding associated with loan prepayments. This allows us generally to fund our loan assets with debt of similar maturities.

Prepayment risk in the investment portfolio results when long-term interest rates fall and prepayments increase as underlying borrowers refinance their mortgages to a lower rate. Prepayments can adversely affect investment portfolio income in a falling interest rate environment because investments can be funded with non-callable debt and any proceeds from prepaid investments will be reinvested at a lower interest rate. Prepayment risk in our investment portfolio is measured on the type and average life of securities. Purchases of MBS are subject to a price risk eligibility test based on a stressed interest rate environment. The test is designed to manage our exposure to extension risk at the time of investment purchase. Any purchases of MBS that fail this test must be approved by ALCO. In addition, approximately half of our fixed-rate MBS (other than hybrid adjustable-rate mortgage securities), contain some embedded prepayment protection in the form of planned amortization class (PAC) bands. These PAC securities are structured so that principal payments are expected to follow a predetermined schedule as long as the prepayments of the underlying collateral fall within a prescribed band. Over time, these bands may erode resulting in an incremental increase in prepayment risk within the investment portfolio. In order to mitigate prepayment risk in our investment portfolio, we have weighted our investment portfolio more towards commercial mortgage-backed securities (CMBS) which have prepayment protections embedded within the securities.

We also fund a portion of our fixed-rate prepayable investment portfolio with term fixed-rate callable debt that provides a partial hedge against prepayment risk in certain falling interest rate environments. The rate we pay on these liabilities effectively reprices downward with a drop in short-term and intermediate-term interest rates. We also use options to hedge our prepayment risk.

Extension risk in the loan portfolio occurs when long-term interest rates rise and prepayments decrease more than expected causing the underlying loans to pay down slower than expected. Loan portfolio income will be negatively impacted as additional higher-rate term funding is required to continue to fund extended loans.

Extension risk in the investment portfolio occurs when long-term interest rates rise and prepayments decrease more than expected causing the underlying investment securities to pay down at a slower rate than initially expected. In this scenario, investment portfolio income will be negatively impacted as additional higher-rate term funding is required to continue to fund extended securities. Extension risk in the investment portfolio is based on the type and average life of securities purchased. In the same way PAC bands provide some protection against prepayment risk, they also serve to limit extension risk as the amortization of these securities is defined as long as prepayments of the underlying collateral fall within a prescribed band.

Cap and Floor Risk

Cap risk is embedded in the floating-rate MBS in our investment portfolio and to a lesser extent floating-rate loans. When short-term interest rates rise, the interest rate paid by the floating-rate MBS or floating-rate loan may become capped and limit the amount of income earned on the asset while underlying funding costs are not capped. Exposure to cap risk is managed by monitoring the concentration of strike levels in our floating-rate MBS and floating-rate loans and related interest rate shock sensitivities. We also purchase interest rate caps and other derivatives to manage cap risk. Further, we have the ability to reduce cap risk by selling our floating-rate investment securities.

Floor risk exists within our floating-rate loans and investments. During periods of declining interest rates or sustained low interest rates, the interest we receive on floating-rate loans and investments declines or remains low thereby reducing our net interest income. This effect is particularly pronounced during extended periods of very low or negative interest rates, and adversely impacts our financial condition, cash flows and results of operations. We purchase interest rate floors to mitigate this risk.

Basis Risk

Basis risk arises due to the differences between the interest rate indices used to price our assets and the indices used to fund those assets. We manage our basis risk through match funding, when possible, and using derivatives (primarily interest rate swaps) and other funding strategies. However, basis risk will always exist as unanticipated loan volume changes cause an excess or shortage of some forms of funding. Furthermore, the transition from LIBOR to SOFR or other benchmark interest rates has introduced additional basis risks. See further discussion regarding the transition away from LIBOR beginning on page 63 and a description of our management of the corresponding basis risk on page 54.

Measurement and Monitoring of Market Risk

The Enterprise Risk Management Division is responsible for the independent measurement, monitoring and reporting of market risk. We utilize several risk measurement and monitoring tools to assist in the management of market risk. These include interest rate gap analysis, duration gap analysis, sensitivity analysis of net interest income and market value of equity, and net interest income forecasting, each of which is described in further detail in the following pages.

Interest Rate Gap Analysis

The interest rate gap analysis shown in the following table presents a comparison of interest-earning assets and interest-bearing liabilities in defined repricing timeframes as of December 31, 2022. The interest rate gap analysis is a static indicator that does not reflect future changes in repricing characteristics and may not necessarily indicate the sensitivity of net interest income in a changing interest rate environment.

Interest Rate Sensitivity Analysis at December 31, 2022 ($ in Millions)

	One Month or Less	Over One Month Through Six Months	Over Six Months Through One Year	Over One Year Through Five Years	Over Five Years and Not Rate Sensitive	Total
Interest-earning Assets:						
Floating-rate Loans:						
Adjustable-rate/Indexed-rate Loans	$ 53,458	$ 4,632	$ 12	$ 4	$ -	$ 58,106
Administered-rate Loans	13,540	-	-	-	-	13,540
Fixed-rate Loans:						
Fixed-rate Loans[1]	2,630	9,235	6,830	14,419	16,108	49,222
Fixed-rate Loans, Prepayable[2]	223	703	848	8,092	9,209	19,075
Nonaccrual Loans	-	-	-	-	145	145
Total Loans	69,851	14,570	7,690	22,515	25,462	140,088
Investment Securities	10,292	1,356	2,003	12,314	7,132	33,097
Federal Funds Sold and Other Overnight Funds	12,401	-	-	-	-	12,401
Total Interest-earning Assets[3]	$ 92,544	$ 15,926	$ 9,693	$ 34,829	$ 32,594	$ 185,586
Interest-bearing Liabilities:						
Callable Bonds and Notes	$ 9,680	$ 989	$ 4,095	$ 8,801	$ 7,963	$ 31,528
Noncallable Bonds and Notes	59,711	18,366	14,910	29,577	16,738	139,302
Bonds, Medium Term Notes and Discount Notes	69,391	19,355	19,005	38,378	24,701	170,830
Effect of Interest Rate Swaps and Other Derivatives	26,313	(7,682)	(9,315)	(9,176)	(140)	-
Cash Investment Services Payable and Other Interest-bearing Liabilities	2,966	2	-	-	825	3,793
Total Interest-bearing Liabilities	$ 98,670	$ 11,675	$ 9,690	$ 29,202	$ 25,386	$ 174,623
Interest Rate Sensitivity Gap (Total Interest-earning Assets less Total Interest-bearing Liabilities)	$ (6,126)	$ 4,251	$ 3	$ 5,627	$ 7,208	$ 10,963
Cumulative Gap	$ (6,126)	$ (1,875)	$ (1,872)	$ 3,755	$ 10,963	
Cumulative Gap/Total Interest-earning Assets	(3.30) %	(1.01) %	(1.01) %	2.02 %	5.91 %	

(1) Prepayment penalties apply that compensate CoBank for economic losses.
(2) Freely prepayable or only minimal prepayment penalties apply.
(3) Does not include $0.9 billion in cash and cash equivalents as of December 31, 2022.

Our cumulative one-year gap position between interest-earning assets and interest-bearing liabilities was slightly negative at December 31, 2022. In general, we are neutrally positioned when viewing the gap table above with the net interest income at risk sensitivity table on page 56, which indicates parallel changes in interest rates are not projected to have a material impact on net interest income over the next 12 months as measured at December 31, 2022.

We continually monitor interest rates and have the ability to reposition our balance sheet as a result of anticipated interest rate changes. If we expected a meaningful change to interest rates, we could shift our position in short order.

Duration Gap Analysis

The duration gap is the difference between the estimated durations of assets and liabilities, which is calculated using an asset/liability model. The duration gap summarizes the extent to which estimated cash flows for assets and liabilities are matched, on average, over time. A positive duration gap means there is increased market value exposure to rising interest rates over the long-term because it indicates that the duration of our assets exceeds the duration of our liabilities. A negative duration gap indicates increased exposure to declining interest rates over the long-term because the duration of our assets is less than the duration of our liabilities. We apply the same interest rate methods, prepayment models, and volatility assumptions to generate the portfolio duration gap that we use in our sensitivity analysis, which is discussed below. The duration gap provides a relatively concise and simple measure of the interest rate risk inherent in our balance sheet, but it is not directly linked to expected future earnings performance. Our aggregate positive duration gap was 2.9 months at December 31, 2022 and 3.1 months at December 31, 2021.

Sensitivity Analysis

We use asset/liability models to evaluate the dynamics of our balance sheet and to estimate earnings volatility under different interest rate scenarios. Our analysis includes calculating the impact of significant increases or decreases in interest rates on net interest income, over a 12-month period, and the estimated market value of equity.

Our analysis typically estimates the effect of immediate and sustained parallel positive (up) and negative (down) shifts in the yield curve (called "shocks") of 100, 200 and 300 basis points, where possible. Pursuant to regulation and our Board policy, when the three-month Treasury rate is below 4 percent, as it was for the years ended December 31, 2021 and 2020, we perform a shock equal to one-half the three-month Treasury rate, which resulted in downward shocks of 3 basis points and 4 basis points at December 31, 2021 and 2020, respectively. When analyzing net interest income at risk, we also estimate the effect of gradual upward and downward changes in market rates (called "ramps") over a one-year period of 100, 200 and 300 basis points, where possible.

The following tables summarize the impact of interest rate changes on net interest income and the market value of equity. Market value of equity is the net present value of all future cash flows discounted to a valuation date, using discounting factors derived from observed market rates on the same valuation date. In all cases, the underlying assumptions and hedging strategies are held constant so that results are comparable from scenario to scenario. However, actual results would differ to the extent changes in strategy were undertaken to mitigate the unfavorable impact of interest rate changes.

Net Interest Income at Risk

Year-ended December 31,	2022	2021	2020
Scenario:			
- 300 bp shock	**n/a**	n/a	n/a
- 200 bp shock	**1.5 %**	n/a	n/a
- 100 bp shock	**0.6**	n/a	n/a
- 4 bp shock	**n/a**	n/a	(0.1) %
- 3 bp shock	**n/a**	- %	n/a
+ 100 bp shock	**-**	(0.4)	1.8
+ 200 bp shock	**0.2**	(0.3)	4.3
+ 300 bp shock	**0.4**	0.9	6.7
- 300 bp ramp	**n/a**	n/a	n/a
- 200 bp ramp	**1.1**	n/a	n/a
- 100 bp ramp	**0.6**	n/a	n/a
+ 100 bp ramp	**(0.3)**	(1.3)	(0.5)
+ 200 bp ramp	**(0.4)**	(2.3)	(0.6)
+ 300 bp ramp	**(0.5)**	(3.1)	(0.4)

Market Value of Equity at Risk

December 31,	2022	2021	2020
Scenario:			
- 300 bp shock	**n/a**	n/a	n/a
- 200 bp shock	**12.6 %**	n/a	n/a
- 100 bp shock	**6.0**	n/a	n/a
- 4 bp shock	**n/a**	n/a	0.2 %
- 3 bp shock	**n/a**	0.2 %	n/a
+ 100 bp shock	**(5.6)**	(5.0)	(4.4)
+ 200 bp shock	**(10.8)**	(9.5)	(8.8)
+ 300 bp shock	**(15.7)**	(13.5)	(13.1)

Our net interest income over the next 12 months is not materially impacted by parallel changes in interest rates as measured at December 31, 2022. Our equity positioning strategy is designed to reduce volatility of net interest income.

Our market value of equity as measured at December 31, 2022 is negatively impacted in increasing interest rate scenarios. Our use of equity to fund intermediate term assets results in a decline in our market value of equity when interest rates increase. Our Board limits the amount of adverse change to net interest income and market value of equity under a down regulatory shock and an up 200 basis point rate shock. The limit for market value of equity was 15 percent and the limit for net interest income was 10 percent for all three years presented. At December 31, 2022, 2021 and 2020, we were within our policy limits as detailed in the preceding tables.

Forecasting

We update our asset/liability model monthly with information on loans, investment securities, bonds and notes, and derivatives. This "current position" is the starting point for all analysis. The current position data is then combined with assumptions and market implied forward rates, to derive our estimates of future net interest income. Generally, we set assumptions on pricing, maturity characteristics and funding mix using trend analysis of actual asset and liability data.

Net interest income projections are derived utilizing different interest rate scenarios to assess the sensitivity of net interest income to changing interest rates. We utilize market implied forward interest rates and also review the impact on net interest income of parallel and nonparallel shifts in the yield curve over different time horizons.

Use of Derivatives

We use derivatives as an integral part of our market risk management activities. To achieve risk management objectives and satisfy the financing needs of our borrowers, we execute derivative transactions with other financial institutions. Derivatives (primarily interest rate swaps) are used to manage liquidity and the market risk arising from maturity and repricing mismatches between assets and liabilities. We also hedge cap and floor risk embedded within our floating-rate investments and loans by entering into derivative transactions. In addition, we execute foreign exchange spot and forward contracts to manage currency risk on our relatively nominal amount of loans denominated in foreign currencies. We also enter into derivatives for our customers as a service to enable them to transfer, modify or reduce their interest rate risk and foreign exchange risk. The notional amounts of derivatives, weighted average interest rates to be received and paid, and fair values at December 31, 2022, are shown in the following table. We also discuss derivatives in Note 10 to the accompanying consolidated financial statements.

Derivatives at December 31, 2022 ($ in Millions)

Derivative Product	Notional Amount	Weighted Average Receive Rate	Weighted Average Pay Rate	Fair Value
Receive Fixed Swaps	$ 33,431	2.36 %	3.05 %	$ (191)
Receive Fixed Amortizing Swaps	6,812	2.09	4.44	(452)
Pay Fixed Swaps	26,020	3.79	3.32	175
Pay Fixed Amortizing Swaps	6,812	4.21	1.91	277
Pay Float Receive Float Swaps	5,000	0.91	4.07	-
Interest Rate Options	3,825	-	-	113
Foreign Currency Spots and Forwards	145	-	-	(2)
Total	$ 82,045	2.88 %	3.23 %	$ (80)

The following section includes a summary of our derivatives portfolio by strategy and further explanation of each strategy.

Notional Amounts of Derivatives by Strategy ($ in Millions)

December 31,	2022	2021	2020
Liquidity Management	**$ 25,942**	$ 12,777	$ 9,724
Equity Positioning	**1,286**	2,675	1,846
Options Risk Management(1)	**2,866**	3,466	5,669
Basis Risk Management	**24,800**	14,400	10,750
Customer Transactions(2)	**27,013**	26,166	25,113
Foreign Currency Risk Management(3)	**138**	164	156
Total	**$ 82,045**	$ 59,648	$ 53,258

(1) Excludes $959 million, $1,064 million and $766 million of interest rate options at December 31, 2022, 2021 and 2020, respectively, which are classified as customer transactions.

(2) Includes the notional values of the customer transactions and related dealer offsets.

(3) Excludes $7 million, $14 million and $1 million of foreign currency spot and forward contracts at December 31, 2022, 2021 and 2020, respectively, which are classified as customer transactions.

Liquidity Management

Interest rate swaps are executed to improve liquidity, primarily by effectively converting specific longer-term fixed-rate bonds and notes into floating-rate debt indexed to SOFR, similar short-term rates or formerly LIBOR. The fixed rate received on the swap largely offsets the fixed rate paid on the associated debt leaving a net floating-rate payment on the swap. This allows us to issue longer-term fixed-rate debt and still match fund the predominantly short-term repricing nature of our interest-sensitive asset portfolio. The increase in interest rate swaps under our liquidity management strategy was driven by market conditions in 2022, which presented opportunities to execute a higher volume of swapped debt at lower funding costs. Liquidity risk management is discussed further on the following page.

Equity Positioning

We also use interest rate swaps to manage market risk as it relates to investment of our equity. If the cash flows of loans and investments on the balance sheet do not create the targeted maturity for the investment of our equity, we enter into receive-fixed interest rate swaps to produce the desired equity investment maturity profile.

Options Risk Management

In the course of managing risk in our investment and loan portfolios, we periodically hedge cap and floor risk embedded within our floating-rate investments and loans by entering into derivative transactions.

Basis Risk Management

We use short-term interest rate swaps indexed to SOFR to manage basis risk exposure in certain of our floating-rate administered loans. Beginning in 2021, we began to transition a significant portion of our floating-rate administered loans from a LIBOR based index to a SOFR based index.

Simultaneously, we began funding these floating-rate administered loans with debt indexed to SOFR and executing SOFR swaps. The SOFR pay rate on our debt is fully offset by a SOFR receive rate in the interest rate swap leaving a net fixed rate payment on the swap. While the amount of interest rate swaps under our basis risk management swap strategy increased significantly during 2021 and 2022 as part of the LIBOR to SOFR transition, we expect all of these LIBOR basis swap transactions to fully mature in early 2023 and not be replaced.

Customer Transactions

Derivatives are offered to customers as a service to enable them to modify or reduce their interest rate and foreign exchange risk by transferring such risk to us. We offset this risk transference by concurrently entering into offsetting transactions with counterparties.

Foreign Currency Risk Management

We enter into foreign exchange spot and forward contracts to manage currency risk on our relatively nominal amount of loans denominated in foreign currencies. Typically, foreign currency contracts are purchased to fund the principal cash flows of the loan and simultaneously sold to lock in the principal and interest cash flows upon the repricing or maturity date of the loan.

Liquidity Risk Management

Liquidity risk is the risk arising from an inability to repay maturing debt obligations or issue obligations to fund borrowers and operations on a timely basis. We must continually raise funds to provide credit and related services to customers, repay maturing debt obligations and meet other obligations. Our primary sources of liquidity are the ability to issue Systemwide Debt Securities and the use of available cash. As a result of the System's credit quality and standing in the capital markets as a GSE, we have traditionally maintained ready access to debt-funding, notwithstanding volatility in the credit markets. Additionally, if necessary, we could convert high credit quality liquid investments to cash.

One of the ways in which we measure and monitor our liquidity position is by assuming no ability to issue debt and calculating the number of days into the future we could meet maturing debt obligations by using available cash and eligible investments. System banks are required by regulation to maintain a minimum of 90 days of liquidity (cash and readily marketable investments generally discounted by 5 to 10 percent of market value) on a continuous basis and to establish an incremental liquidity reserve. At December 31, 2022, our days of liquidity was 183 days, compared to 180 days at December 31, 2021. During 2022, we averaged 178 days of liquidity compared to an average of 181 days in 2021.

FCA regulations require each System bank to maintain a three-tiered liquidity reserve. The first tier consists of a sufficient amount of cash and cash-like instruments to cover each bank's maturing debt for 15 days. The second and third tiers contain highly liquid instruments sufficient to cover each bank's maturing debt for the next 15 and subsequent 60 days, respectively. In addition, the banks are required to establish an incremental liquidity reserve composed of eligible investments, which can be drawn upon during an emergency and which is sufficient to cover each bank's liquidity needs beyond 90 days. CoBank has established a minimum liquidity standard of 150 days, which is 60 days greater than the 90 days regulatory standards.

Our liquidity management objectives are to provide a reliable source of funding to borrowers, meet maturing debt obligations, provide additional liquidity if market conditions deteriorate and to fund operations on a cost-effective basis. Approximately 64 percent of our interest-earning assets mature or reprice in one year or less with 50 percent maturing or repricing in one month or less. Match-funding these assets from a maturity perspective would create an unacceptable concentration of short-term liabilities. Instead, we manage this risk by issuing longer-term fixed-rate debt and swapping this debt from a fixed to floating rate using derivative transactions, as previously described, or by issuing term floating-rate debt. By so doing, we reduce the need to fund maturing liabilities on any given business day to a more manageable level. While we believe that sufficient resources are available to meet liquidity management objectives through our debt maturity structure, holdings of liquid assets and access to the capital markets via the Funding Corporation, the volatility of our loan volume and the cash flow requirements from our cash management program causes our liquidity needs to vary significantly from day to day.

The amounts and maturities of our debt obligations are set forth in the table below.

Debt Maturities as of December 31, 2022 ($ in Millions)

	Book Value	Par Value
1 Day	$ 2,823	$ 2,823
2-7 Days	607	607
8-30 Days	9,955	9,965
31-90 Days	13,309	13,341
91-180 Days	17,389	17,498
181-365 Days	38,525	38,795
1-5 Years	65,923	66,306
Over 5 Years	26,092	26,127
Total	$ 174,623	$ 175,462

See Notes 5 and 15 to the accompanying consolidated financial statements for information regarding interest rates and maturities of Systemwide Debt Securities, and contingencies.

As more fully discussed in Note 5 to the accompanying consolidated financial statements, at December 31, 2022 and 2021, respectively, we held $825.0 million and $350.0 million of funding pursuant to a bond guarantee program offered by the Rural Utilities Service (RUS) agency of the United States Department of Agriculture. The funding is provided by the Federal Financing Bank and guaranteed by the RUS. In April 2022, we closed on an additional $200.0 million of Series F funding with the RUS. As of December 31, 2022, we had $250.0 million, $375.0 million and $200.0 million outstanding on our Series D, Series E and Series F funding from RUS, respectively. The Series D, Series E and Series F facilities were fully drawn at December 31, 2022.

Due to the often volatile funding needs of certain customers, in particular Agribusiness customers impacted by seasonal borrowing requirements and changing commodity prices and supplies, we provide a significant amount of revolving loan commitments. At December 31, 2022, commitments to extend credit and commercial letters of credit were $47.5 billion and $51.1 million, respectively. In addition, we provide standby letters of credit, which guarantee payment or performance of an obligation. As of December 31, 2022, the maximum amount of future payments that could potentially be required under standby letters of credit was $2.0 billion. Since many of these commitments may expire without being drawn, the total commitments do not necessarily represent future cash requirements. Our exposure to many of these commitments is mitigated by borrowing base requirements contained in loan agreements. See Note 9 to the accompanying consolidated financial statements for a full discussion of financial instruments with off-balance sheet risk.

Our liquidity plan covers certain contingencies in the event our access to normal funding sources is disrupted. We purchase only high credit quality investments to ensure our investment portfolio is readily marketable and available to serve as a source of contingent funding. Our investment portfolio may also be used as collateral to borrow funds to cover maturing liabilities and other needs, including through a sponsored repurchase agreement facility we have with a commercial bank providing us access to the Fixed Income Clearing Corporation as a collateral provider. We are required by FCA regulations to exclude from our liquidity reserve ABS that are no longer rated AAA by at least one major rating agency, corporate bonds that do not carry one of the two highest ratings by at least one major rating agency or any investment whose market value is less than 80 percent of book value. As a result, as of December 31, 2022 and 2021, $570.6 million and $454.6 million, respectively, of securities were not included in our liquidity reserve.

We have identified certain portions of our loan portfolio that we believe could be sold or participated out in the event our access to normal funding mechanisms is disrupted. These loans serve as an additional source of contingent funding. We also maintain uncommitted lines of credit with various financial institutions that could provide liquidity during unanticipated short-term disruptions in funding. However, it is uncertain whether we would be able to sell or participate loans or fully utilize uncommitted lines of credit in the event of a systemic funding disruption.

An additional source of liquidity is cash provided by our operating activities (primarily generated from net interest income in excess of operating expenses), which totaled $1.6 billion, $1.6 billion and $1.3 billion in 2022, 2021 and 2020, respectively.

The assets of the Insurance Fund would be used to repay maturing Systemwide Debt Securities, to the extent available, if no other sources existed to repay such debt. The Insurance Corporation has an agreement with the Federal Financing Bank, a federal instrumentality subject to the supervision and direction of the U.S. Treasury, pursuant to which the Federal Financing Bank would advance funds to the Insurance Corporation. Under its existing statutory authority, the Insurance Corporation may use these funds to provide assistance to the System banks in exigent market circumstances that threaten the banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10 billion and terminates on September 30, 2023, unless otherwise renewed. The decision whether to seek funds from the Federal Financing Bank is at the discretion of the Insurance Corporation, and each funding obligation of the Federal Financing Bank is subject to various terms and conditions and, as a result, there can be no assurance that funding would be available if needed by the System.

Operational Risk Management

Operational risk is the risk arising from human errors or misconduct, failures in human capital objectives, inadequate enterprise information management, systems and technology or process failures, and external cyber risk and data security impacting the Bank, our critical vendors or our customers. We utilize a risk management framework, business policies and processes, and employee training and disclosures to manage operational risk. Under this framework, business segments and support units have direct and primary responsibility and accountability for identifying, controlling and monitoring operational risk. Managers maintain controls with the objective of providing proper transaction authorization and execution, proper system operations, safeguarding of assets from misuse or theft, fraud monitoring and ensuring access, reliability and security of financial and other data. Employees receive regular training on business ethics, fraud identification and prevention, compliance with laws and regulations, and information security. Employees are also subject to standards of conduct requirements in the performance of their job responsibilities, including the periodic disclosure of potential conflicts of interest. We also mitigate operational risk through the use of insurance coverages.

Business continuity and disaster recovery planning are important mitigants to potential operational risks. Critical business and supporting units are required to develop, maintain and test such plans at least annually to ensure that continuity and recovery activities, if needed, could sustain critical functions including systems and information supporting customers and business operations. While we believe that we have designed effective business continuity policies and procedures, there is no absolute assurance that business disruption or operational losses would not occur in the event of a disaster.

The Enterprise Risk Management Division is responsible for coordinating the completion of the quarterly and annual risk assessment and reports results to senior management and the Board of Directors. Our internal audit function validates internal controls through risk-based, regular audits, and reports on the effectiveness of internal controls to executive management and the Audit Committee of the Board of Directors. In addition, the head of Internal Audit reports quarterly to the Audit Committee of the Board of Directors on the current state of the Bank's risks and controls. The asset review function evaluates the adequacy and effectiveness of the Bank's internal control processes related to loan quality, collateral, credit administration and risk identification. The Audit Committee of the Board of Directors reviews, modifies as necessary, and approves the scope and level of review performed by the internal audit and asset review functions.

The Enterprise Risk Management Division is responsible for aggregating and monitoring enterprise-wide risk. This Division is also responsible for the maintenance and development of the model risk management and third-party risk management programs. As with other risks, business segments and support units have direct and primary responsibility and accountability for identifying, controlling and monitoring these risks.

To enhance our governance and internal controls, we apply policies and procedures that mirror many of the material provisions of the Sarbanes-Oxley Act of 2002, including section 404, *Management Assessment of Internal Controls Over Financial Reporting.*

Strategic and Reputation Risk Management

Strategic risk is the risk to current or anticipated earnings, capital, or enterprise value arising from adverse business decisions or lack of responsiveness to changes in the banking/operating environment. Reputation risk is the risk arising from negative external perception about CoBank. The Bank is subject to a wide variety of reputation risks both within and outside its control, including, among other things, credit difficulties with individual customers or industries, business disputes, lawsuits, credit market disruptions, regulatory events, public criticism by competitors, public allegations of misconduct and misunderstanding of our lending authorities or congressionally-mandated mission. As a member of the System, CoBank could be indirectly impacted by events that damage the reputation of another System entity.

Effective Board governance, strong management, solid business plan execution and business practices ensuring conformity with laws and regulations and consistency with CoBank's mission are key controls in ensuring strategic alignment and managing and mitigating the Bank's reputation risk.

The Board has adopted leading industry practices in its governance of CoBank. Consistent with these practices, CoBank directors are required to meet prescribed qualifications standards prior to standing for election. Directors are required to complete initial training upon election and subsequent training during their tenure. The Board conducts annual self-evaluations and a periodic peer evaluation. As part of its ongoing processes, the Board is required to convene a restructuring committee at least once every five years to study the composition of the Board and consider other factors to strengthen governance. In 2020, a Board restructuring committee comprised of Board members and customer representatives was convened to examine key aspects of governance at CoBank and did not recommend material changes to the Board's current governance structure and processes. The next restructuring committee will be convened in 2025.

The Bank regularly communicates with customer-owners to ensure they have the information they need to accurately evaluate the Bank's overall business and financial performance. Furthermore, customers, System partners and others have access to members of the Board of Directors and management through customer and industry meetings and events held by the Bank throughout the year, which helps to ensure the Bank is aligned with the interests of its members.

CoBank's executive management team possesses the requisite banking skills and experience, financial expertise and sophistication to run the Bank. CoBank identifies and develops leaders from within the organization through talent management and development processes, and attracts high-quality talent from external sources.

The controls and processes surrounding credit risk, market risk, liquidity risk and operational risk mitigate reputation risk by lowering the likelihood of significant problems in each of those areas. The Bank's Reputational Risk Committee meets frequently to assess reputational risks. In addition, the Bank has a formal crisis communications plan in place in order to help it manage communications with stakeholders if an unplanned, reputation-impacting event occurs.

We place considerable emphasis on ethical behavior and ensure that our directors and employees receive regular training related to business ethics, fraud identification and prevention, compliance with laws and regulations, and information security. In addition, as discussed on page 177, each year all employees certify their compliance with our Associate Responsibilities and Conduct Policy. Senior officers and other senior professionals who are involved with the preparation and distribution of our financial statements and related disclosures also annually certify compliance with the Bank's code of ethics.

As a mission-based lender, CoBank is committed to mission objectives that expand market penetration into an increasingly diverse customer base. Our Board-directed activities include supporting causes and programs that support the health and welfare of rural communities and the industries we serve across rural America. By strengthening relationships with key stakeholders and enriching service to agriculture, rural infrastructure and rural communities, CoBank's corporate social responsibility program aims to make a positive impact in our marketplace. The Bank also supports and participates in various committees which manage the System's reputation and business practices. These committees, which consist of representatives from Farm Credit banks and Associations, coordinate business and operational issues across System institutions. Through our Government Affairs Division we proactively monitor emerging legislation that may impact our business or the business of the industries we serve.

Regulatory and Compliance Risk Management

Regulatory and compliance risk is the risk to current or anticipated earnings, capital, or reputation arising from failure to comply with laws or regulations. We are subject to a variety of regulatory and compliance risks. We actively manage and mitigate these risks through quarterly evaluation and monitoring within the Bank's Enterprise Risk Management framework, which is established under the Risk Management Group that reports to the CRO. Our Risk Management Group also has an Office of Foreign Assets Control (OFAC) and Anti-Money Laundering (AML) compliance function that includes an AML and anti-fraud program, which utilizes a risk-based approach to monitor transactional activity. CoBank's Legal and Regulatory Group, which reports to the Chief Legal Officer and General Counsel, monitors and comments on emerging regulatory requirements, and advises on legal and regulatory requirements as needed. The Legal and Regulatory Group also addresses potential litigation risk that may arise from ongoing business activities. Our Internal Audit and Asset Review divisions also review compliance with regulatory requirements. In addition, we are subject to review by the FCA and other governmental authorities, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims and damages. While we believe that we have adopted appropriate risk management and compliance programs, legal and compliance risks will continue to exist. Further, additional legal proceedings and other contingencies, the outcome of which cannot be predicted with certainty, will arise from time to time.

Other Risk Factors

In addition to the other information in this Annual Report, including "Management's Discussion and Analysis – Enterprise Risk Profile" and "Management's Discussion and Analysis – Business Outlook", the following factors should be carefully considered in evaluating CoBank. Such factors could affect results and cause results to differ materially from those expressed in any forward-looking statements made by, or on behalf of, CoBank. These risk factors discussed below could adversely affect CoBank's results of operations, financial condition, liquidity and cash flow, as well as cause reputational damage.

Natural or Man-Made Disasters, Including Widespread Health Emergencies such as the COVID-19 Pandemic, or Other External Events Beyond Our Control, Such as the Russia/Ukraine War, Could Disrupt Our Business

Our operations may be subject to disruption due to the occurrence of natural disasters, acts of terrorism or war, such as the Russia/Ukraine war, public health emergencies, such as the ongoing COVID-19 pandemic, or other unexpected or disastrous conditions, events or emergencies beyond our control, some of which may be intensified by the effects of a government response to the event, or climate change and changing weather patterns.

COVID-19 resulted in the declaration of the COVID-19 outbreak as a pandemic by the World Health Organization and caused significant economic and financial turmoil both in the U.S. and around the world. Although the global economy has begun to recover from the COVID-19 pandemic and most health and safety restrictions have been lifted, the extent to which the consequences of the COVID-19 pandemic impact us will depend on future developments that remain uncertain and cannot be predicted including, but not limited to, the severity and duration of any resurgence of COVID-19 variants and future actions taken by governmental authorities to contain COVID-19 and mitigate its effects.

The growth in economic activity that resulted from the lifting of COVID-19 health and safety restrictions, combined with labor shortages and supply chain complications exacerbated by the Russia/Ukraine war and subsequent sanctions and export controls against Russia, has contributed to rising inflationary pressures. General inflation in the United States has risen to levels not experienced in recent decades. The rising energy prices, interest rates and wages, among other things, may further increase our operating costs as well as both the operating and borrowing costs of our members and disrupt our business.

Although we have implemented a business continuity management program that we enhance on an ongoing basis, there can be no assurance that the program will adequately mitigate the risks of business disruptions. Further, events such as natural disasters and public health emergencies may divert our attention away from normal operations and limit necessary resources. We generally must resume operations promptly following any interruption. If we were to suffer a disruption or interruption and were not able to resume normal operations within a period consistent with industry standards, our business, financial condition or results of operations could be adversely affected in a material manner. In addition, depending on the nature and duration of the disruption or interruption, we might become vulnerable to fraud, additional expense or other losses, or to a loss of business.

Inflation and Rising Interest Rates Could Negatively Impact our Results of Operations and Financial Condition

Our financial results and cash flows depend to a great extent on the difference between the interest rates earned on interest-earning assets such as loans and investment securities, and the interest rates paid on interest-bearing liabilities such as borrowings. These rates are highly sensitive to many factors that are beyond our control, including general economic conditions and the policies of various governmental and regulatory agencies (in particular, the Federal Reserve Board). Changes in monetary policy, including changes in interest rates, will influence the origination of loans, the prepayment speed of loans, the purchase of investments and the rates received on loans and investment securities and paid on our borrowings. The United States and other countries have continued to experience significantly elevated levels of inflation, resulting in central banks implementing a series of interest rate increases, with additional increases expected in the near term. The impact of these changes may be magnified if we do not effectively manage the relative sensitivity of our interest-bearing assets and liabilities to changes in market interest rates. Fluctuations in these areas may adversely affect us and our customers.

Joint and Several Liability for the Debt of the Farm Credit System

Farm Credit System banks and Associations are not authorized to accept deposits and therefore cannot use deposits as a funding source. Instead, banks raise funds for their operations primarily through Systemwide Debt Securities issued on the banks' behalf by the Funding Corporation. Systemwide Debt Securities are the joint and several liabilities of the System banks and are not obligations of, nor are they guaranteed by, the U.S. government or a U.S. Agency or instrumentality thereof, other than the System banks. Under the Farm Credit Act, each System bank is primarily liable for the portion of the Systemwide Debt Securities issued on its behalf. At December 31, 2022, we were primarily liable for $170.8 billion of Systemwide Debt Securities. Additionally, each System bank is contingently liable for Systemwide Debt Securities of the other System banks. At December 31, 2022, the total aggregate principal amount of the outstanding Systemwide Debt Securities was $390.0 billion.

Although the System banks have established mutual covenants and measures, which are monitored on a quarterly basis, there is no assurance that these would be sufficient to protect a System bank from liability should another System bank default and the Insurance Fund be insufficient to cure the default. See Note 5 to the accompanying consolidated financial statements for a more complete description of the interbank agreements among the System banks.

The Insurance Fund, which totaled $6.7 billion as of December 31, 2022, is available from the Insurance Corporation to ensure the timely payment by each System bank of its primary obligations on Systemwide Debt Securities and can also be used by the Insurance Corporation for its operating expenses and for other mandatory and permitted purposes. Under the Farm Credit Act, before joint and several liability can be invoked, available amounts in the Insurance Fund would first be exhausted. There is no assurance, however, that the Insurance Fund would have sufficient resources to fund a System bank's defaulted obligations. If the Insurance Fund was insufficient, then the remaining System banks would be required to pay the default amount in proportion to their respective available collateral positions. Available collateral approximates the amount of total shareholders' equity of the System banks. The Insurance Corporation does not insure any payments on our other debt obligations, preferred stock or common stock. See Note 5 to the accompanying consolidated financial statements for more information about the Insurance Fund.

The System does not have a guaranteed line of credit from the U.S. Treasury or the Federal Reserve. However, the Insurance Corporation has an agreement with the Federal Financing Bank, a federal instrumentality subject to the supervision and direction of the U.S. Treasury, pursuant to which the Federal Financing Bank would advance funds to the Insurance Corporation. Under its existing statutory authority, the Insurance Corporation may use these funds to provide assistance to the System banks in exigent market circumstances that threaten the banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10 billion and terminates on September 30, 2023, unless otherwise renewed. The decision whether to seek funds from the Federal Financing Bank is at the discretion of the Insurance Corporation, and each funding obligation of the Federal Financing Bank is subject to various terms and conditions and, as a result, there can be no assurance that funding would be available if needed by the System.

To the extent we must fund our allocated portion of another System bank's portion of the Systemwide Debt Securities due to a default, our earnings and total shareholders' equity would be reduced, possibly materially.

Reforms Impacting Government Sponsored Enterprises Could Have an Adverse Impact on our Business

The System is a GSE and, as a member of the System, CoBank benefits from ready access to debt funding and favorable debt-funding costs. Our individual credit ratings are also positively impacted by the GSE status of the System. In addition, as provided in our charter, portions of our business activities, including lending to Associations and loan participation purchases from other System institutions, are exempt from many forms of taxation, including federal income taxes.

As a direct result of the financial difficulties experienced by the housing-related GSEs, with both Fannie Mae and Freddie Mac having been placed into conservatorship by the U.S. government, GSE status has been and will continue to be a topic of debate and concern to various stakeholders, including the public and Congress. Congressional deliberations over structural reform of the housing-related GSEs are likely to continue. The Bank and the System are under the jurisdiction of the U.S. Senate Committee on Agriculture, Nutrition and Forestry, and the House of Representatives Committee on Agriculture and thus have not been the subject of this specific congressional scrutiny. CoBank cannot predict whether or when legislative or regulatory initiatives may commence that, if successful, could negatively affect the status of the System as a GSE. Any changes in the System's status as a GSE or the general perception by investors of GSEs could have a significant adverse impact on the System's ability to issue debt at favorable rates and terms, which could negatively impact CoBank's funding costs.

Our Funding Costs Could Be Negatively Impacted by Downgrades of the Long-Term U.S. Sovereign Credit Rating and the System's Long-Term Debt Rating

As a member of the System, we have historically benefited from the favorable funding costs and funding flexibility associated with the debt securities issued through the Funding Corporation. The credit ratings of GSEs, including the System, are influenced by the sovereign credit rating of the United States. S&P Global Ratings (S&P) currently maintains the long-term sovereign credit rating of the United States of AA+, which continues to drive its AA+ long-term debt rating of the System. Both Moody's Investors Service (Moody's) and Fitch Ratings Inc. (Fitch) currently maintain the long-term sovereign credit rating for the United

States and its agency securities of Aaa and AAA, respectively, which continues to drive their respective Aaa and AAA long-term debt rating of the System. Any future ratings downgrades could negatively impact funding costs, earnings and funding flexibility for CoBank and other System institutions.

Our Funding is Dependent Upon the System's Ability to Access the Capital Markets

The primary source of liquidity for CoBank and the other System institutions is the ability to issue Systemwide Debt Securities. This access has provided the System with a dependable source of funding. The System's ability to continue to issue Systemwide Debt Securities depends, in part, on the conditions in the capital markets, which are outside the System's control. As a result, the System cannot make any assurances that it will be able to fund itself by issuing Systemwide Debt Securities. Furthermore, the System issues combined financial statements and assurance of adequate disclosure controls and procedures around internal control over financial reporting. Failure by a System institution to provide required information for financial reporting, or to have adequate disclosure controls or procedures over financial reporting may delay the timely publication of the System's financial statements or cause an error in the accuracy or completeness of the financial statements. Failure to timely issue the System's combined financial statements could disrupt the System's ability to access debt capital markets. If the System cannot issue Systemwide Debt Securities or cannot access the capital markets, CoBank's funding would be negatively impacted, which would have a negative effect on our financial condition and results of operations, which could be material.

We are Subject to Liquidity Risk with Respect to Certain Investments and Derivatives

We are subject to liquidity risk in the course of our investing activities. In volatile market conditions, it could be difficult to sell investments, if the need arises, and the discounts from face value would likely be significant. In addition, because of the inherent uncertainty of determining the fair value of investments that do not have a readily available market value, the fair value of a small portion of our investments may differ significantly from the values that would have been used had a ready market existed for the investments.

Our over-the-counter derivative contracts require CoBank or our counterparties to post cash or securities as collateral when the fair values of the derivatives change based on changes in interest rates. Collateral is exchanged between parties daily with zero posting thresholds for all counterparties. Likewise, CoBank is required to pledge initial margin and make daily settlement payments related to our cleared derivative transactions. As a result of these derivative contracts, we are exposed to liquidity risk when changes in interest rates require us to post collateral to our counterparties, or make settlement payments for changes in the fair value of cleared derivatives. As of December 31, 2022, we held $559.8 million in cash as collateral from our counterparties. Additionally, initial margin and settlement payments totaling $157.5 million and $279.3 million, respectively, were held by our CCP for our cleared derivatives as of December 31, 2022.

Transition from LIBOR Could Adversely Affect Our Results of Operations, Financial Condition and Cash Flows

On March 5, 2021, the United Kingdom's Financial Conduct Authority (UKFCA) and the ICE Benchmark Administrator (IBA) formally announced that all LIBOR tenors will either be discontinued or no longer be representative immediately after December 31, 2021 for the GBP, JPY, CHF, EUR, and the 1-week and 2-month USD tenors, and immediately after June 30, 2023 for the remaining USD tenors. The UKFCA does not expect that any LIBOR tenors will become unrepresentative before these respective dates; however, publication by the IBA of most of the LIBOR tenors is expected to cease immediately after these dates. The UKFCA has worked closely with market participants and regulatory authorities around the world to ensure that alternatives to LIBOR are available and that existing contracts can be transitioned onto these alternatives to safeguard financial stability and market integrity.

On March 9, 2021, the Federal Reserve's Alternative Reference Rate Committee (ARRC) released a statement of clarification related to the UKFCA and IBA announcements. The ARRC confirmed a "Benchmark Transition Event" occurred under ARRC and International Swaps and Derivatives Association (ISDA) recommended fallback language as a result of the announcements on March 5, 2021. The ARRC also confirmed that March 5, 2021 is the date which the spread adjustments were determined for the ISDA fallbacks but will not be effective until the next repricing of instruments after June 30, 2023.

On July 29, 2021, the ARRC formally announced that CME Term SOFR is an appropriate fallback to LIBOR to be used for certain types of currently outstanding loans, floating rate notes (which would include certain outstanding Systemwide Debt Securities) and derivatives based on LIBOR when LIBOR is discontinued or deemed unrepresentative, and, in more limited circumstances, for new loans, floating rate notes and other transactions, including certain derivatives. CME Term SOFR are forward-looking rates published by CME Group Benchmark Administration Limited for 1-month, 3-month, 6-month and 12-month tenors. The ARRC's support of CME Term SOFR is expected to increase the volume of transactions quoted in SOFR, supporting the transition away from LIBOR.

On October 20, 2021, the Prudential Regulators (Federal Reserve, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency) issued a statement to reemphasize the expectation that supervised institutions with LIBOR exposure continue to progress towards an orderly transition away from LIBOR. Given LIBOR's discontinuance, the agencies believe that entering into new contracts, including derivatives, that use LIBOR as a reference rate after December 31, 2021, would create safety and soundness risks, including litigation, operations, and consumer protection risks. The Prudential Regulators further clarified a new contract would include an agreement that creates additional LIBOR exposure for a supervised institution or extends the term of an existing LIBOR contract. A draw on an existing agreement that is legally enforceable, for example, a committed credit facility would not be viewed as a new contract.

On December 8, 2021, the FCA issued an informational memorandum to provide additional guidance to Farm Credit System institutions on their transition away from LIBOR. The guidance encourages Farm Credit System institutions to stop entering into new contracts that reference LIBOR as soon as practicable and, in any event, no later than December 31, 2021. Entering into new LIBOR-referenced contracts after that date would present safety and soundness risks. The guidance also provides clarity on what the FCA considers a new LIBOR-indexed contract; whether purchases of legacy LIBOR-indexed loans and investments are deemed new contracts; limited exceptions for entering into new LIBOR contracts that reduce or hedge risk in legacy LIBOR contracts; and the due diligence and other procedures required before using other benchmark/reference rate alternatives to LIBOR (beyond SOFR), including credit-sensitive alternative rates.

On March 15, 2022, the U.S. government passed the Consolidated Appropriations Act of 2022, which includes federal legislation regarding the LIBOR transition. The legislation provides a statutory fallback mechanism to replace LIBOR with a benchmark rate, selected by the Federal Reserve Board and based on SOFR, for certain contracts that reference LIBOR and contain no or insufficient fallback provisions. The law also provides a safe harbor for parties who select the statutory benchmark replacement rate. The federal legislation also preempts state law passed by New York and Alabama that relates to the selection or use of a benchmark rate replacement or limits the manner of calculating interest.

On August 17, 2022, the CME finalized the USD LIBOR conversion plan for cleared swaps. Under the plan, the CME will be replacing the original LIBOR swap with two swaps, the same forward starting SOFR swap and a short-dated LIBOR swap for any LIBOR fixings that settle after the LIBOR index cessation effective date. The basis swap splitting exercise is scheduled for March 2023 followed by a primary conversion date in April 2023 and secondary conversion date in July 2023.

CoBank recognizes the discontinuance of LIBOR presents significant risks and challenges that could have an impact on our business and our customers. Accordingly, CoBank has established a LIBOR governance and implementation program that includes senior management and has taken various actions to mitigate our risks to the LIBOR transition. Through December 31, 2022, we have implemented fallback language in a substantial majority of our loan agreements. We have implemented SOFR loan products for our commercial loan customers and our Association customers. We have also implemented changes to our systems and processes to support SOFR indexed transactions.

We have exposure to various LIBOR-indexed financial instruments that mature after June 30, 2023. This exposure includes loans that we make to our customers, investment securities that we purchase, Systemwide Debt Securities that are issued by the Federal Farm Credit Banks Funding Corporation (Funding Corporation) on the Bank's behalf, preferred stock that we issue and our derivative transactions. Alternative reference rates that replace LIBOR may not yield the same or similar economic results over the terms of the financial instruments, which could adversely affect the value of, and return on, instruments held by us. The transition from LIBOR could result in us paying higher interest rates on our current LIBOR-indexed Systemwide Debt Securities, adversely affect the yield on, and fair value of, the instruments we hold that reference LIBOR, and increase the costs of, or affect our ability to effectively use, derivative instruments to manage interest rate risk. In addition, to the extent that we cannot successfully transition our LIBOR-indexed financial instruments to an alternative rate-based index that is endorsed or supported by regulators and generally accepted by the market as a replacement to LIBOR, there could be other ramifications including those that may arise as a result of the need to redeem or terminate such instruments. Disputes and litigation with counterparties, investors and borrowers relating to the transition are also possible. Due to the uncertainty regarding the transition from LIBOR-indexed financial instruments, including the manner in which an alternative reference rate will apply, and the mechanisms for transitioning our LIBOR-indexed instruments to instruments with an alternative rate, we cannot yet reasonably estimate the expected financial impact of the LIBOR transition.

The following table presents our LIBOR-indexed financial instruments by contractual maturity.

LIBOR-Indexed Financial Instruments at December 31, 2022 ($ in Millions)

	Due on or before June 30, 2023	Due after June 30, 2023	Total
Commercial Loans [(1)]	$ 1,571	$ 10,390	$ 11,961
Wholesale Loans [(2)]	82	1,863	1,945
Investment Securities	32	2,467	2,499
Debt	171	760	931
Derivatives (Notional Amounts)	6,129	23,283	29,412
Preferred Stock [(3)]	-	808	808

(1) Represents loans in our Agribusiness and Rural Infrastructure operating segments.

(2) Represents loans in our Farm Credit Banking operating segment.

(3) Represents our non-cumulative perpetual preferred stock with a fixed-to floating rate dividend feature indexed to 3-month USD LIBOR, and does not have a contractual maturity date. Includes $133 million that pays a dividend currently indexed to 3-month USD LIBOR plus a spread as of December 31, 2022. Dividends on an additional $300 million and $375 million of preferred stock convert from a fixed rate to 3-month USD LIBOR plus a spread in 2025 and 2026, respectively.

We continue to analyze potential risks associated with the LIBOR transition, including financial, market, accounting, operational, legal, tax, reputational and compliance risks. In light of the announcements by the UKFCA, the IBA and Prudential Regulators noted above, USD LIBOR, except in very limited circumstances, was or will be discontinued or declared unrepresentative (depending on the tenor) as of either immediately after December 31, 2021 or June 30, 2023.

Because we formerly engaged in transactions involving financial instruments that referenced LIBOR, these developments may have a material impact on us, our borrowers, investors, customers and counterparties as we transition these LIBOR instruments to SOFR or another alternative rate-based index over time.

CoBank and Our Affiliated Associations Face Intense Competition in a Rapidly Changing Financial Services Industry

CoBank and our affiliated Associations face intense competition from commercial banks, thrift institutions, insurance companies, finance companies, mortgage banking companies, other GSEs, U.S. Agencies and the U.S. government. Future results may become increasingly sensitive to fluctuations in the volume and cost of lending activities. Furthermore, continued expansion of the digital economy, technological advances and the introduction of disruptive technologies have altered how many financial services get delivered to customers and have introduced new competitors for certain services. There can be no assurance that CoBank or our affiliated Associations will be able to continue to successfully compete in the markets we serve or to effectively adapt to technological or other changes impacting the financial services marketplace.

Relationship with the Federal Agricultural Mortgage Corporation

Farmer Mac is a federally chartered corporation that was established to create a secondary market for agricultural mortgages and other loans. Although Farmer Mac is statutorily defined as an institution of the System and is examined and regulated by the FCA, it is financially and operationally separate and distinct from the System, and any reference to "the System" herein does not include Farmer Mac. Neither CoBank nor any other System entity is liable for any debt or obligation of Farmer Mac. Further, the assets of the Insurance Fund do not support any debt or obligation of Farmer Mac nor do the System's independent credit ratings apply to Farmer Mac. Except for contractual obligations arising from business transactions between Farmer Mac and certain System institutions, Farmer Mac is not liable for any debt or obligation of any System entity, including Systemwide Debt Securities, either directly or on a joint and several basis.

CoBank has a master participation agreement in place with Farmer Mac under which each party may purchase from the other participation interests in eligible loans. We periodically engage in sales of non-patronage, electric distribution loans to Farmer Mac and we remain the servicer of these loans.

We believe that if Farmer Mac, as an institution of the System, were to experience financial difficulty, it could create financial, reputational, political and/or regulatory risk for CoBank and the System.

We Are Subject to Cybersecurity Risks that Could Negatively Affect Our Ability to Conduct and Manage Our Business

Information security risk at financial institutions has increased in recent years as a result of the proliferation of new technologies and the increased activities of organized crime, hackers and other external parties. CoBank and its customers, like many other financial institutions and their customers, have been and will likely continue to be the target of cyber-attacks aimed at committing fraud. Companies across many industries, including financial institutions, have reported being victims of cyber-attacks, resulting in, among other things, compromise of customer or other confidential data, theft of funds or resources and disruption of services. Cybersecurity and the continued development and enhancement of our controls, processes, and systems to protect our information systems and data remain a priority for CoBank. CoBank has been subject to attempted cyber-attacks from time to time, and will likely be subject to additional attempted attacks in the future, but we have not experienced any material losses relating to cyber-attacks. Although we believe we have robust information security procedures and controls, our information systems, as well as those of our customers, used to access our services, may become the target of cyber-attacks, which could result in material losses. Our risk and exposure to cyber-attacks remain high due to the evolving nature and increased frequency of such attacks on businesses and individuals. We also rely on third-party service providers to conduct various aspects of our business operations and face similar risks relating to them. While we conduct security reviews on these third parties, these vendors may also become targets of cyber-attacks resulting in material losses to CoBank. Additionally, the cost and operational consequences of implementing, maintaining and enhancing system protection measures are significant and they could materially increase to address ever-changing intensely complex and sophisticated cyber risks.

Failures of Critical Vendors and Other Third-Party Service Providers Could Disrupt our Ability to Conduct and Manage our Business

CoBank relies on vendors and other third-party service providers to perform certain critical services. A failure in, or an interruption to, one or more of those services provided could negatively affect our business operations and services provided to our customers. If one or more of these key external parties were not able to perform their functions for a period of time at an acceptable service level, our business operations could be constrained, disrupted, or otherwise negatively affected.

We Are Subject to Risks Arising From Changes to Our Collaborative Partnerships With Other System Entities

CoBank's collaborative partnerships with other System entities are key to the Bank's financial growth, strength and stability. These collaborations are rooted in the philosophy that working constructively together optimizes our ability to fulfill our collective mission to serve rural America. In addition, we continue to collaborate with our affiliated

Associations on business model solutions that further strengthen the ability to fulfill our mission, including through the more efficient use of capital. Notwithstanding the importance of these relationships and collaborations, CoBank is exposed to reputation risk, regulatory risk, and inter-related financial risks arising from other System entities. The failure to maintain effective System cooperation in mitigating these exposures could adversely affect our financial condition, results of operations and ability to meet the needs of our customers.

Our Ability to Attract and Retain Qualified Board Members, Senior Officers and Employees is Critical to Successfully Fulfilling Our Mission

The success of CoBank is dependent on the talents and efforts of our Board members, senior officers and employees, and the competition for individuals who possess the requisite knowledge of the banking, agricultural, finance and other relevant industries is intense. The current environment and tight labor markets have further created challenges and heightened risks around employee talent acquisition and retention. In addition, CoBank associates and the broader workforce are demanding higher compensation and benefits to offset inflation, remote-working arrangements, and workforce flexibility, among other things. The failure to attract and retain qualified Board members, senior officers and employees could adversely affect our business performance, competitive position and the ability to fulfill our mission.

An Unfavorable Change in our Reputation from Environmental, Social and Governance (ESG) Activities Could Adversely Affect our Business and Financial Results

Our business faces increasing public scrutiny related to ESG activities. The public holds diverse and often conflicting views on ESG topics. As a large financial institution, we have multiple stakeholders, including our customers, our Associations, our investors, our regulator, and the communities in which we operate. These stakeholders will often have differing priorities and expectations regarding ESG issues. If we take action in conflict with one or another of those stakeholders' expectations, we could experience an increase in customer complaints, a loss of business or reputational harm. Furthermore, adverse incidents with respect to ESG activities or an unfavorable change in our reputation caused by negative public opinion could adversely affect our ability to meet our customers' lending needs, obtain financing, impede our ability to hire and retain qualified personnel, hinder our business prospects, impact our relationships with other System institutions, or expose us to greater regulatory scrutiny or adverse regulatory or legislative changes.

We Are Exposed to the Risk of Climate Change

Climate change poses both short- and long-term risks globally, including to the agricultural and financial sectors. Climate change arises from physical risk (acute or chronic risks to the physical effects of climate change) and transition risk (risks related to societal risks, including regulatory, legal, market or reputational changes). Overall, climate change risks may result in increased compliance costs, lower profitability for us, our customers and our Associations, as well as many of their borrowers. Additionally, climate change impacts could negatively affect the credit quality of our and our Associations' loan portfolios. Physical risk such as adverse weather conditions, particularly during the planting and growing season, can significantly affect agricultural production, with the timing and quantity of rainfall being two of the most important factors in agricultural production. Insufficient levels of rain prevent farmers from planting new crops and may cause growing crops to die or result in lower yields. Excessive rain or flooding can prevent planting from occurring at optimal times, and may cause crop loss through increased disease or mold growth. Temperatures outside normal ranges can also cause decreased yields, failure or quality issues for crops. Additionally, livestock and dairy production can be negatively impacted by weather extremes as well, due to impact on feed and other input costs or reduced production.

We Depend on the Accuracy and Completeness of Customer and Counterparty Information

We rely on information (including financial information) furnished by or on behalf of customers, including our Associations, and counterparties. We may also rely on representations of those customers and counterparties as to the accuracy and completeness of that information. If the financial or other information provided to us is incorrect, we could suffer credit losses or other consequences.

Liquidity and Capital Resources

Funding

We use our capital in addition to short-term and long-term debt to fund our assets. Our debt consists primarily of Systemwide Debt Securities issued on CoBank's behalf by the Funding Corporation. Refer to Note 5 to the accompanying consolidated financial statements for additional information regarding our debt obligations.

As a member of the System, CoBank has traditionally maintained ready access to debt funding. As of December 31, 2022, Systemwide Debt Securities were rated Aaa and AAA by Moody's and Fitch, respectively, and AA+ by S&P.

Investment Securities, Cash, Federal Funds Sold and Other Overnight Funds

We hold investment securities, cash, federal funds sold and other overnight funds primarily to maintain a liquidity reserve and to manage short-term surplus funds. In accordance with Board-approved policies, we purchase high credit quality investment securities with the objective of ensuring that the investment portfolio is readily marketable and available to serve as a source of liquidity in the event of disruption to our normal funding sources.

Our investment securities increased to $33.1 billion at December 31, 2022 compared to $31.8 billion at December 31, 2021. The following tables summarize our investment securities and related unrealized gains/losses by asset class.

Investment Securities ($ in Millions)

December 31, 2022	Amortized Cost	Fair Value	Net Unrealized Losses
Certificates of Deposit	$ 850	$ 850	$ -
U.S. Treasury Debt	14,779	14,052	(727)
U.S. Agency Debt	1,733	1,627	(106)
Residential Mortgage-Backed:			
Ginnie Mae	1,014	837	(177)
U.S. Agency	1,417	1,319	(98)
Commercial Mortgage-Backed:			
U.S. Agency	14,567	13,587	(980)
Corporate Bonds	534	501	(33)
Asset-Backed and Other	328	324	(4)
Total	$ 35,222	$ 33,097	$ (2,125)

Investment Securities ($ in Millions)

December 31, 2021	Amortized Cost	Fair Value	Net Unrealized Gains (Losses)
U.S. Treasury Debt	$ 15,531	$ 15,716	$ 185
U.S. Agency Debt	1,997	2,077	80
Residential Mortgage-Backed:			
Ginnie Mae	1,205	1,200	(5)
U.S. Agency	1,214	1,220	6
Commercial Mortgage-Backed:			
U.S. Agency	11,237	11,225	(12)
Corporate Bonds	361	383	22
Asset-Backed and Other	22	21	(1)
Total	$ 31,567	$ 31,842	$ 275

At each reporting period, we perform impairment assessments of our investment securities based on evaluations of both current and future market and credit conditions and expected cash flows. Subsequent changes in market and credit conditions or expected cash flows could change these evaluations.

As all of our investment securities are classified as “available for sale”, we recognize changes in the fair value of our investment securities in accumulated other comprehensive income (loss), a component of shareholders’ equity, unless losses are credit-related and considered other-than-temporary, in which case that portion of the loss is recorded in earnings. We recorded unrealized losses on our investment securities of $2.1 billion in 2022 and unrealized gains of $274.6 million in 2021. The unrealized losses and gains recorded in both periods primarily related to the impact of market interest rate changes on the valuations of fixed-rate securities.

Approximately 95 percent of our investment securities carry an explicit or implicit government guarantee. Credit risk in our investment portfolio primarily exists in the remaining 5 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which currently include certificates of deposit, ABS and corporate bonds of midstream energy and communication companies. Our certificates of deposit totaled $850.0 million as of December 31, 2022 and are transacted with highly-rated commercial banks. Our ABS and midstream energy corporate and communication bonds collectively total $827.0 million as of December 31, 2022. Credit risk in our investment portfolio also arises from counterparties to short-term investments, which include our overnight bank deposits and federal funds sold, which are transacted with highly-rated commercial banks. We held overnight bank deposits and federal funds sold instruments totaling $2.8 billion and $0.5 billion at December 31, 2022 and 2021, respectively. The remainder of our short-term investments include reverse repurchase agreements with the Federal Reserve totaling $9.6 billion and $5.0 billion at December 31, 2022 and 2021, respectively, and have minimal credit risk. We recorded no other-than-temporary impairment losses for our investment securities in 2022, 2021 and 2020.

In 2022, we sold a U.S. Treasury debt security for total proceeds of $495.6 million and two corporate bonds for total proceeds of $17.5 million to take advantage of favorable market conditions and a U.S. agency mortgage-backed security for total proceeds of $0.1 million for administrative reasons. The resulting gains from these investment sales totaled $1.4 million.

In 2021, we sold 18 U.S. Treasury debt securities for total proceeds of $3.2 billion, eight U.S. Agency debentures for total proceeds of $617.7 million and one commercial mortgage-backed security for total proceeds of $93.5 million resulting in losses of $36.5 million. We sold these securities to rebalance the investment portfolio to take advantage of market opportunities to sell lower yielding investments and replace them with higher yielding investments and to efficiently manage our tax obligations.

In 2020, we sold eleven U.S. Treasury debt securities for total proceeds of $3.5 billion, which approximated their combined book value. We sold these securities to manage liquidity.

Derivatives

We use derivatives for the purposes described beginning on page 57. Derivatives are recorded at fair value as assets or liabilities in the accompanying consolidated balance sheets. Derivative assets totaled $999.8 million at December 31, 2022 compared to $486.7 million at December 31, 2021. Derivative liabilities totaled $1.1 billion at December 31, 2022 compared to $371.7 million at December 31, 2021. The increases in derivative assets and derivative liabilities at December 31, 2022 are primarily the result of higher interest rates compared to December 31, 2021.

Changes in the fair value of our derivatives are accounted for as gains or losses through current period earnings or as a component of accumulated other comprehensive income (loss), depending on the use of the derivatives and whether they qualify for hedge accounting treatment. Net changes in the fair value of derivatives and hedged items designated as hedging instruments are recorded in interest income and interest expense in the accompanying consolidated statements of income and totaled net losses of $8.4 million and $10.0 million for 2022 and 2021, respectively. Net changes in the fair value of derivatives not designated as hedging instruments are recorded in noninterest income in the accompanying consolidated statements of income and totaled net gains of $21.2 million and $16.1 million for 2022 and 2021, respectively. Changes in the fair value of derivatives recorded as other comprehensive income (loss) totaled gains of $99.5 million and $7.7 million in 2022 and 2021, respectively.

Capital

We believe that a sound capital position is critical to our long-term financial success and future growth. Our shareholders' equity is primarily composed of preferred and common stock, retained earnings and other comprehensive income (loss), and totaled $10.2 billion, $12.2 billion and $11.9 billion at December 31, 2022, 2021 and 2020, respectively. The $2.0 billion decrease in shareholders' equity in 2022 resulted from unrealized losses on investment securities recorded in accumulated other comprehensive income (loss) resulting from higher market interest rates, as well as from redemptions of preferred stock, retirements of common stock and patronage distributions. While the unrealized losses on investment securities result in a reduction of shareholders' equity, they do not impact current period earnings or regulatory capital. The level of these unrealized losses is subject to future fluctuations in interest rates. The decrease in shareholders' equity in 2022 was partially offset by current period earnings and the issuance of preferred stock described below.

On December 2, 2021, we issued $425.0 million of Series J non-cumulative perpetual preferred stock. We used the net proceeds from the Series J preferred stock issuance to increase our regulatory capital pursuant to FCA regulations and for general corporate purposes, including the redemption of our Series G non-cumulative perpetual preferred stock as described below. Dividends on the Series J preferred stock, if declared by the Board of Directors in its sole discretion, are non-cumulative and are payable quarterly in arrears beginning on April 1, 2022 and will accrue at a fixed annual rate of 4.25 percent from the date of issuance up to, but excluding January 1, 2027. Thereafter, dividends will accrue at the five-year U.S. Treasury rate as of the most recent reset dividend determination date plus a spread of 3.049 percent per annum and will be paid quarterly. The preferred stock is redeemable at par value, in whole or in part, at the Bank's option quarterly beginning on January 1, 2027.

On January 1, 2022, we redeemed all of our outstanding Series G non-cumulative perpetual preferred stock totaling $200.0 million. The dividend rate for our Series G preferred stock was 6.125 percent through the date of redemption.

On August 16, 2022, we issued $400.0 million of Series K non-cumulative perpetual preferred stock. We used the net proceeds from the Series K preferred stock issuance to increase our regulatory capital pursuant to FCA regulations and for general corporate purposes, including the redemption of our Series F non-cumulative perpetual preferred stock as described below. Dividends on the Series K preferred stock, if declared by the Board of Directors in its sole discretion, are non-cumulative and are payable quarterly in arrears beginning on January 1, 2023, and will accrue at a fixed annual rate of 6.45 percent from the date of issuance up to, but excluding October 1, 2027. Thereafter, dividends will accrue at the five-year U.S. Treasury rate as of the most recent reset dividend determination date plus a spread of 3.487 percent per annum and will be paid quarterly. The preferred stock is redeemable at par value, in whole or in part, at the Bank's option quarterly beginning on or after October 1, 2027.

On October 1, 2022, we redeemed all of our Series F non-cumulative perpetual preferred stock totaling $400.0 million. The dividend rate for our Series F preferred stock was 6.25 percent through the date of the redemption.

During 2022 and 2021, we retired $69.9 million and $22.5 million, respectively, of our outstanding Series E non-cumulative perpetual preferred stock in a series of open market purchase transactions. The retired Series E preferred stock was purchased at a discount from par value resulting in a modest gain on retirement recorded in unallocated retained earnings.

Under the FCA's regulatory capital requirements, common equity tier 1 (CET1) capital, which includes common stock and retained earnings, is the largest component of the Bank's capital structure. Preferred stock is also included in tier 1 regulatory capital, subject to certain limitations. In addition, our allowance for credit losses is included in tier 2 regulatory capital, subject to certain limitations. See "Capital Regulations" below for detailed discussion related to the FCA's capital adequacy regulations which require us to maintain certain minimum capital requirements.

All of our outstanding preferred stock is included in tier 1 capital and permanent capital for regulatory capital purposes. All of our outstanding preferred stock ranks equally, both as to dividends and upon liquidation, and senior to all of our outstanding common stock.

We may from time to time seek to retire our outstanding debt or equity securities through calls, tender offers and/or exchanges, open market purchases, privately negotiated transactions or otherwise. Such calls, tender offers, exchanges, open market purchases or new issuances, if any, will depend on prevailing market conditions, the Bank's capital position and liquidity requirements, contractual restrictions, changes to capital regulations and other factors.

Capital Regulations

The FCA's capital regulations set the following minimum risk-based requirements:

- A CET1 capital ratio of 4.5 percent;
- A tier 1 capital ratio (CET1 capital plus additional tier 1 capital) of 6 percent; and
- A total capital ratio (tier 1 capital plus tier 2) of 8 percent.

The capital regulations also set a minimum tier 1 leverage ratio (tier 1 capital divided by total assets) of 4 percent, of which at least 1.5 percent must consist of unallocated retained earnings (URE) and URE equivalents, which are nonqualified allocated equities with certain characteristics of URE.

The capital regulations establish a capital cushion (capital conservation buffer) of 2.5 percent above the risk-based CET1, tier 1 and total capital requirements. In addition, the capital regulations establish a leverage capital cushion (leverage buffer) of 1 percent above the tier 1 leverage ratio requirement. If capital ratios fall below the regulatory minimum plus buffer amounts, capital distributions (equity redemptions, cash dividend payments, and cash patronage payments) and discretionary senior executive bonuses are restricted or prohibited without prior FCA approval.

Proposed Capital Regulations

On July 8, 2021, the FCA announced a proposed rule that would amend the Tier 1/Tier 2 capital framework to define and establish a risk weight for high-volatility commercial real estate exposures by assigning a 150 percent risk-weighting to such exposures, instead of the current 100 percent risk-weighting. The proposed rule focuses on changes that are comparable with the capital rules of other federal banking regulatory agencies and recognizes the increased risk posed by certain high-volatility commercial real estate exposures. The public comment period on the proposed rule ended on January 24, 2022.

On April 14, 2022, the FCA issued a final rule to address changes to its capital regulations and certain other regulations in response to the CECL accounting standard. The regulation reflects the CECL methodology, which revises the accounting for credit losses in accordance with accounting principles generally accepted in the United States of America (GAAP), and makes conforming amendments to other regulations to accurately reference credit losses. Specifically, the regulation identifies which credit loss allowances under the CECL accounting standard are eligible for inclusion in a System institution's regulatory capital. Credit loss allowances related to loans, lessor's net investments in leases, and held-to-maturity debt securities are included in a System institution's tier 2 capital up to 1.25 percent of the System institution's total risk-weighted assets. Credit loss allowances for available-for-sale debt securities and purchased credit impaired assets are not eligible for inclusion in a System institution's tier 2 capital. The regulation does not include a transition phase-in period for the CECL accounting standard day 1 cumulative effect adjustment to retained earnings on a System institution's regulatory capital ratios. We adopted this regulation on January 1, 2023 and it did not have a material impact on our regulatory capital.

As shown in the following table, our capital and leverage ratios exceeded regulatory minimums at December 31, 2022, 2021, 2020, 2019 and 2018. If these capital standards are not met, the FCA can impose restrictions, including limiting our ability to pay patronage distributions, retire equities and pay preferred stock dividends.

Regulatory Capital Requirements and Ratios

As of December 31,		2022		2021		2020		2019		2018		
	Regulatory Minimums	Actual	Actual Buffer	Actual	Actual Buffer	Actual	Actual Buffer	Actual	Actual Buffer	Actual	Actual Buffer	Required Buffer
Common Equity Tier 1 Capital Ratio	4.5 %	**11.62 %**	**7.12 %**	12.74 %	8.24 %	12.33 %	7.83 %	12.70 %	8.20 %	12.38 %	7.88 %	2.5 % (1)
Tier 1 Capital Ratio	6.0	**13.39**	**7.39**	14.70	8.70	14.25	8.25	14.83	8.83	14.57	8.57	2.5 (1)
Total Capital Ratio	8.0	**14.25**	**6.25**	15.63	7.63	15.22	7.22	15.86	7.86	15.58	7.58	2.5 (1)
Tier 1 Leverage Ratio(2)	4.0	**6.80**	**2.80**	7.47	3.47	7.30	3.30	7.51	3.51	7.53	3.53	1.0
Permanent Capital Ratio	7.0	**13.51**	**n/a**	14.81	n/a	14.36	n/a	14.95	n/a	14.69	n/a	n/a
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio	1.5	**3.13**	**n/a**	3.36	n/a	3.23	n/a	3.24	n/a	3.19	n/a	n/a

(1) The capital conservation buffer was phased in over three years and reached its full value of 2.5 percent at December 31, 2019.

(2) At least 1.5 percent must be URE and URE equivalents.

See pages 137 through 146 for more information on required regulatory capital disclosures, including the components of the ratios displayed above.

Capital Adequacy and Business Planning

In conjunction with the annual business and financial planning process, the Board of Directors reviews and approves a capital adequacy plan which includes target levels for capital and capital ratio baselines. When reviewing the capital adequacy plan and setting an appropriate target equity level, the Board considers the following: the Bank's overall risk assessment and profile; capital composition; loan volume and earnings projections; anticipated future capital needs; and the Bank's capital levels in comparison to commercial banks and regulatory minimum capital standards. The Board-established baselines under the capital regulations are 8 percent for the CET1 capital ratio, 9.5 percent for the tier 1 capital ratio, 11.5 percent for the total capital ratio and 5.5 percent for the tier 1 leverage ratio.

The Board balances the amount required to properly capitalize the Bank with the desire to distribute a level of patronage that provides appropriate returns to our customer-owners. The Board may increase or decrease these patronage levels, assuming we meet regulatory requirements, based on its ongoing evaluation of the Bank's business.

As part of our business planning process, we perform stress tests to examine the Bank's financial condition and performance, including capital levels, under a variety of market and economic environments, including unanticipated loan growth and prolonged periods of financial and loan quality stress. These stress tests illustrate the Bank's ability to continue to maintain compliance with regulatory requirements through severe market conditions while continuing to fulfill our mission. Results of these stress tests are reviewed with the Board of Directors and the FCA.

Capital Plans

In accordance with the Farm Credit Act, cooperatives and other eligible borrowers are required to purchase equity in CoBank as a condition of borrowing. Eligible borrowers that borrow on a patronage basis have voting rights while they are active borrowers. Generally, for borrowers other than affiliated Associations, the minimum initial borrower investment is equal to the lesser of one thousand dollars or 2 percent of the amount of the loan. The minimum initial investment for borrowers other than affiliated Associations is generally received by CoBank in cash at the time the borrower receives the loan proceeds. Affiliated Associations provide an initial and ongoing voting stock investment in CoBank calculated as a percent of their average outstanding loan balance, which was 3 percent as of December 31, 2022. Collectively, the customer-owners that hold voting stock elect our Board of Directors.

We operate on a cooperative basis and return a significant portion of our earnings to our customer-owners in the form of patronage distributions. All patronage payments and retirements of equity require the prior approval of our Board of Directors. Patronage payments can only be made if the Bank is in compliance with minimum regulatory capital requirements and preferred stock dividends for the immediately preceding period have been paid in full.

Patronage distributions are made in the form of cash and/or common stock, as shown in the following table. Eligible shareholders will receive patronage distributions from CoBank for 2022 in the first quarter of 2023.

Patronage Distributions ($ in Thousands)

Year Ended December 31,	2022	2021	2020
Common Stock	**$ 138,835**	$ 127,837	$ 131,912
Cash	**707,901**	631,420	489,913
Special Cash	**148,821**	125,360	106,603
Total Patronage Distributions	**$ 995,557**	$ 884,617	$ 728,428
Patronage Distributions/ Total Average Common Stock Owned by Active Borrowers	**26.07 %**	23.17 %	20.58 %

The Bank's Board of Directors approved special cash patronage distributions of $148.8 million, $125.4 million and $106.6 million to eligible customer-owners for 2022, 2021 and 2020, respectively. The distributions reflect the Bank's strong financial performance and robust capital levels. The special cash patronage distribution approved for 2022 will be paid in March 2023 while the special cash patronage distributions approved for 2021 and 2020 were paid in March 2022 and March 2021, respectively. The special cash patronage distributions were incremental to patronage program payments the Bank had initially targeted to make to customer-owners under its various patronage programs.

Our capital plans govern the level of capital investment required by customer-owners. The Bank's Board of Directors approved a number of changes to the Bank's capital plans during 2022 and 2021. In June 2021, the Board approved a change in the loan base period used for determining target equity levels for our affiliated Associations from a one-year average to a five-year trailing average. This change reduced the required amount of common stock investment of our affiliated Associations in CoBank and resulted in common stock retirements of $114.5 million to our affiliated Associations that were paid in March 2022.

In June 2022, CoBank stockholders approved board-recommended amendments to the Bank's capitalization bylaws lowering target equity ranges for customer-owners. Under the approved amendments, the target equity range for cooperatives and other patronage-eligible commercial borrowers decreased to 4-10 percent from the previous range of 7-13 percent. For direct loans with Farm Credit System institutions, the target equity range decreased to 2-5 percent from the previous range of 4-6 percent. The target equity levels for customer-owners are set within the ranges established in the bylaws and are included in the capital plans approved by the Board of Directors.

In August 2022, the Bank's Board of Directors amended the capital plans for customer-owners to decrease the target equity levels. The target equity level for cooperatives and other patronage-eligible commercial borrowers was decreased from 8 percent to 7 percent. For direct loans with affiliated Associations, the target equity level was decreased from 4 percent to 3 percent and the loan base period was changed from a five-year trailing average to a one-year average. For non-affiliated Farm Credit System institutions, the target equity level was decreased from 4 percent to 3.25 percent. The new target equity levels were effective starting in 2022. In December 2022, the Board approved stock retirements which included the impact of these lower target equity levels as well as normal retirements. These stock retirements totaling approximately $192.0 million will be made in March 2023.

Management and the Board continuously evaluate the Bank's capital plans and patronage programs based on financial performance, capital requirements, asset growth, emerging risks and other items. Any future changes to patronage and capital distributions would be subject to FCA regulations and Board approval.

Capital plans and patronage programs for each customer or loan type are summarized in the following table.

Capital Plans and Patronage Programs

Customer or Loan Type	2022 Equity Requirement[1]	Target Patronage[2] 2022 Plan	2021 Plan	2020 Plan	2019 Plan	2018 Plan	Cash/Equity Split[3]
Agribusiness, Communications and Project Finance	**7.00 %**	**95 bps**	95 bps	95 bps	95 bps	95 bps	**75 / 25 %**
Rural Electric and Water	**7.00**	**80**	80	80	80	80	**60 / 40**
Loans Purchased from Farm Credit Institutions	**7.00**	**95**	95	95	95	95	**75 / 25**
Affiliated Associations	**3.00**	**45**	45	36	40	45	**100 / 0**
Nonaffiliated Farm Credit and Other Financing Institutions	**3.25**	**30**	30	26	30	35	**20 / 80**

(1) Cooperatives and other eligible direct borrowers fulfill their equity requirement over time through the equity portion of their annual patronage distributions, as do loans purchased from other Farm Credit entities, and nonaffiliated Farm Credit and other financing institutions. Affiliated Associations capitalize their wholesale loans from the Bank in full on an annual basis.

(2) Target patronage is the level of patronage the Bank initially targets to make under its patronage programs, and is defined as the number of basis points (bps) of current-year average loan volume for eligible borrowers.

(3) Once borrowers reach their target equity requirement, they effectively receive 100 percent of their patronage distribution in cash.

The targeted equity requirement for the agribusiness, communications and project finance capital plan is 7 percent of the 10-year trailing average loan volume for the 2022 plan year and 8 percent of the 10-year trailing average loan volume for the 2021, 2020, 2019 and 2018 plan years. Additionally, when a borrower's loans are paid in full, stock is retired over a 10-year loan base period beginning in the year following loan payoff, subject to Board approval and compliance with minimum regulatory capital requirements. The targeted patronage rate was 95 basis points for all plan years presented, with 75 percent paid in cash and the remaining 25 percent paid in common stock.

The targeted equity requirement for the rural electric and water capital plan is 7 percent of the 10-year trailing average loan volume for the 2022 plan year and 8 percent of the 10-year trailing average loan volume for the 2021, 2020, 2019 and 2018 plan years. Additionally, when a borrower's loans are paid in full, stock is retired over a 10-year loan base period beginning in the year following loan payoff, subject to Board approval and compliance with minimum regulatory capital requirements. The targeted patronage rate was 80 basis points for all plan years presented, with 60 percent paid in cash and the remaining 40 percent paid in common stock.

The key tenets of the capital plan for loan participations purchased from Farm Credit institutions are identical to the agribusiness, communications and project finance capital plan described above.

The targeted equity requirement for the affiliated Association capital plan is 3 percent of the one-year average loan volume for the 2022 plan year, 4 percent of the five-year trailing average loan volume for the 2021 plan year and 4 percent of the one-year average loan volume for the 2020, 2019 and 2018 plan years. The targeted patronage rate for the affiliated Association capital plan was 45 basis points for the 2022, 2021 and 2018 plan years, with all patronage being paid in cash. For the 2020 and 2019 plan years, the targeted patronage rate was 36 and 40 basis points, respectively, with all patronage being paid in cash.

The targeted equity requirement for the nonaffiliated Farm Credit and other financing institutions capital plan is 3.25 percent of the 10-year trailing average loan volume for the 2022 plan year and 4 percent of the 10-year trailing average loan volume for all other plan years presented. Additionally, when these borrowers' loans are paid in full, stock is retired over a 10-year loan base period beginning in the year following loan payoff, subject to Board approval and compliance with minimum regulatory capital requirements. The targeted patronage rate for the nonaffiliated Farm Credit and other financing institutions capital plan was 30 basis points for the 2022, 2021 and 2019 plan years. For the 2020 and 2018 plan years, the targeted patronage rate was 26 and 35 basis points, respectively. For all plan years presented, the cash portion of patronage was 20 percent with the remaining 80 percent paid in common stock.

Human Capital

At CoBank, our success as a business ultimately depends on our people. We are chartered to deliver dependable credit and financial services to vital industries across rural America. Fulfilling this mission requires us to attract and retain high quality, skilled professionals who are deeply committed to the Bank, our business, and customer base. We have developed a human capital plan and strategies designed specifically to address this dependency on talent and it includes a comprehensive set of programs covering talent acquisition, learning and development, talent strategy and planning, performance management, pay and rewards, diversity, equity and inclusion, and associate engagement. Together, these programs enable us to optimize the quality and success of our workforce on a continuing basis.

CoBank has actively embraced a strategy of building an inclusive and equitable work environment and work culture that allows all associates to maximize their engagement and realize their full potential. The dimensions of diversity – race, gender, age, ethnicity, veteran status, sexual orientation, gender identity and disability – remain vital to our efforts to expand and strengthen our workforce and customer base. Additionally, we have incorporated secondary and occupational dimensions of diversity such as thinking styles, working styles, geographic location, level and tenure into our diversity and inclusion efforts. Our focused effort on diversity, equity and inclusion has created a work environment where each person is respected, valued, heard and included, which creates a feeling of belongingness and inspires all associates to perform at their best.

As of December 31, 2022, we had 1,140 associates employed at our headquarters near Denver, Colorado and in our regional banking centers across the country. Our associates work in a variety of conventional banking and financial services disciplines with the remainder working in management, corporate support, and operational functions. Our workforce was approximately 55 percent male, 45 percent female and 21 percent minorities (defined as ethnically or racially diverse) based on employee self-reporting.

Critical Accounting Estimates

Management's discussion and analysis of the financial condition and results of operations are based on the Bank's consolidated financial statements, which we prepare in accordance with GAAP. In preparing these financial statements, we make estimates and assumptions. Our financial position and results of operations are affected by these estimates and assumptions, which are integral to understanding reported results.

Note 1 to the accompanying consolidated financial statements contains a summary of our significant accounting policies. We consider certain of these policies to be critical to the presentation of our financial condition, as they require us to make complex or subjective judgments that affect the value of certain assets and liabilities. Some of these estimates relate to matters that are inherently uncertain. Most accounting policies are not, however, considered critical. Our critical accounting policies relate to determining the level of our allowance for credit losses and the valuation of financial instruments with no ready markets (primarily derivatives and certain investment securities). Management has reviewed these critical accounting policies with the Audit Committee of the Board of Directors.

Certain of the statements below contain forward-looking statements, which are more fully discussed beginning on page 75.

Allowance for Credit Losses

Our allowance for loan losses is an adjustment to the value of our total loan and finance lease portfolio for incurred credit losses related to outstanding balances. We provide line of credit financing to customers to cover short-term and variable needs, the usage of which, particularly for farm supply and grain marketing customers, is influenced by a number of factors, including changes in the prices and supplies of agricultural commodities. As a result, we have significant unfunded commitments for which we maintain a separate reserve. This reserve is reported as a liability on the Bank's consolidated balance sheet. We refer to the combined amounts of the allowance for loan losses and the reserve for unfunded commitments as the "allowance for credit losses."

Our allowance for credit losses reflects our assessment of the risk of probable and estimable incurred losses related to outstanding balances and unfunded commitments in our loan and finance lease portfolio. The allowance for credit losses is maintained at a level consistent with this assessment, considering such factors as loss experience, portfolio quality, portfolio concentrations, agricultural production conditions, modeling imprecision, our mission, and economic and environmental factors specific to our business segments.

The allowance for credit losses is based on our regular evaluation of our loan and finance lease portfolio. We establish the allowance for credit losses via a process that begins with estimates of probable loss within the portfolio. Our methodology consists of analysis of specific individual credits and evaluation of the remaining portfolio. We evaluate significant individual credit exposures, including adversely classified loans, based upon the borrower's overall financial condition, resources, payment record and projected viability. We also evaluate the prospects for support from any financially viable guarantors and the estimated net realizable value of any collateral. The Allowance for Credit Losses Committee approves specific credit and reserve-related activities. The Audit and Risk Committees of the Board of Directors review the allowance for credit losses on a quarterly basis, and the Board of Directors approves the year-end allowance for credit losses. The allowance for credit losses estimation process is also governed by model risk management and is periodically reviewed and validated in accordance with our policies.

Our determination of the allowance for credit losses for commercial loans is sensitive to the assigned risk ratings and probabilities of default, assumptions surrounding loss given default and loss emergence timing and the overall level of exposure within our loan portfolio. Management evaluates and updates its assumptions around probabilities of default and loss given default on a periodic basis or more frequently as needed. Changes in these components underlying this critical accounting estimate could increase or decrease our provision for loan losses. Such a change would increase or decrease net income and the related allowance for loan losses and reserve for unfunded commitments, which could have a material effect on the Bank's financial position and results of operations.

To analyze the impact of assumptions on our provision for loan losses and the related allowance for credit losses, we changed a critical assumption to reflect the impact of deterioration or improvement in loan quality. In the event that 10 percent of loans (calculated on a pro-rata basis across all risk ratings), excluding wholesale loans to Associations and guaranteed loans, experienced downgrades or upgrades of one risk rating category, the provision for loan losses and related allowance for credit losses would have increased or decreased by $42.2 million and $31.7 million at December 31, 2022, respectively.

No significant changes were made to our incurred loss methodology for estimating the allowance for credit losses for loans and finance leases in 2022, 2021 or 2020.

As more fully discussed in Note 2 to the consolidated financial statements, we adopted the CECL accounting standard on January 1, 2023, which introduces a new model for recognizing credit losses based on management's estimate of current expected credit losses. The impact of adopting the CECL accounting standard reduced our allowance for credit losses related to loans, leases and unfunded commitments by $74.7 million.

Valuation of Financial Instruments with No Ready Markets and Other-Than-Temporary Impairment Analyses

We use fair value measurements to record fair value adjustments to certain financial instruments and to determine fair value disclosures. All of our investment securities and derivative instruments are reported at their estimated fair value on the accompanying consolidated balance sheets. We also estimate the amount of other-than-temporary impairment for certain investment securities.

As discussed in Note 11 to the accompanying consolidated financial statements, we maximize the use of observable inputs when measuring fair value. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs primarily reflect our estimates about market data.

The fair value of our interest rate swaps and other derivatives is the estimated amount to be received to sell a derivative asset or paid to transfer or extinguish a derivative liability in active markets among willing participants at the reporting date. Estimated fair value is determined through internal market valuation models. These models use an income approach and incorporate benchmark interest rate curves, volatilities, counterparty credit quality, and other inputs that are observable directly or indirectly in the marketplace. For derivative transactions with dealers, we compare internally calculated derivative valuations to counterparty results. The fair value of collateral assets and liabilities related to derivative contracts is their face value, plus accrued interest, as these instruments are cash balances; therefore, fair value approximates face value.

The fair value of nearly all investment securities is determined by a third-party pricing service that uses valuation models to estimate current market prices. For a small portion of our ABS and other investment securities market value is calculated internally using third-party models. Inputs and assumptions related to all of these models are typically observable in the marketplace. Such models incorporate prepayment assumptions and underlying mortgage- or asset-backed collateral information to generate cash flows that are discounted using appropriate benchmark interest rate curves and volatilities. These third-party valuation models also incorporate information regarding non-binding broker/dealer quotes, available trade information, historical cash flows, credit ratings, and other market information. Such valuations represent an estimated exit price, or price to be received by a seller in active markets to sell the investment securities to a willing participant.

Credit risk in our portfolio of investment securities is primarily limited to the 5 percent of securities that do not carry an explicit or implied government guarantee. In instances where the fair value of investment securities is less than the carrying value, we estimate the component of unrealized losses attributable to credit losses. No significant changes were made to our models or methodology for estimating credit losses for investment securities in 2022 or 2021. During 2020, we enhanced our investment credit loss modeling and methodology related to our midstream energy and communication corporate bonds in response to market volatility in energy commodity prices and market uncertainty.

As more fully discussed in Note 2 to the consolidated financial statements, we adopted the CECL accounting standard on January 1, 2023. The impact of adopting this accounting standard resulted in a $6.0 million allowance for credit losses related to our available-for-sale investment securities.

All models used for financial instruments valuation estimates included in the financial statements or for independent risk monitoring purposes are periodically reviewed and validated in accordance with our policies.

The degree of management judgment involved in determining the fair value and impairment of a financial instrument is dependent upon the availability of observable market inputs. For financial instruments that trade actively and have observable market prices and inputs, there is minimal subjectivity involved. When observable market prices and inputs are not fully available, management judgment is necessary to estimate fair value and impairment. Changes in market conditions may reduce the availability of market prices or observable data. For example, reduced liquidity in the capital markets or changes in secondary market activities could result in observable market inputs becoming unavailable. When market data is not available, we use valuation techniques requiring more management judgment to estimate the appropriate fair value measurement and level of impairment, if any. Changes in assumptions could affect these estimates.

At December 31, 2022, approximately 25 percent of total assets, or $46.6 billion, consisted of financial instruments recorded at fair value. Over 99 percent of these financial instruments used valuation methodologies involving market-based or market-derived information to measure fair value. The remaining financial instruments were measured using model-based techniques, consisting of a small portion of our ABS and other investments. At December 31, 2022, less than 1 percent of total liabilities, or $1.7 billion, consisted of financial instruments recorded at fair value, the substantial majority of which are valued using methodologies involving market-based or market-derived information.

Business Outlook

As we enter 2023, the global economy continues to be impacted by major events such as persistent inflation, rising interest rates, lingering consequences of COVID-19 and the negative effects of the Russia/Ukraine war. Anticipating how events will unfold throughout the next year is challenging. Worldwide food and energy prices remain elevated and certain commodity prices remain volatile, though they have begun to decline from the peak levels experienced earlier this year. The U.S. economy remains stronger than many developed countries, as evidenced by the strong dollar, thus causing problems for U.S. exports in the global economy. Inflation, higher interest rates and uncertain outcomes of major global events continue to point to a higher likelihood of an economic recession and general economic uncertainty. Labor markets continue to be tight and unemployment and underemployment statistics are more stable than expected, especially in the services sector, causing concern of persistent wage inflation. Consumers continue to spend in spite of continued higher prices and dwindling savings that built up during COVID-related lockdowns in 2020 and 2021, placing more reliance on consumer credit. The housing market has begun to weaken with price declines in many markets after years of sizable appreciation. From a monetary policy perspective, the Federal Reserve raised interest rates by over 400 basis points during 2022, with additional rate hikes expected in 2023. The aggressive rate hiking cycle has only just now begun to somewhat ease inflation and has not meaningfully weakened demand for goods and services, which may result in broader unfavorable effects on the economy over time. Tighter monetary policy continues to contribute to a stronger dollar and changes in the shape of the yield curve. Equity markets have recovered in early 2023 after significant declines in 2022 but remain well below their peak levels. The U.S. government once again faces challenges with the debt ceiling and will require solutions in 2023 and on a longer-term basis. Changes to U.S. tax laws, including the federal corporate income tax rate, also remain uncertain at this time. Market conditions in many sectors of the agricultural and rural infrastructure industries we serve remain generally favorable and stable, but are impacted by the challenges of the broader economy.

The rural economy in the United States continues to benefit from higher levels of consumer spending, although business investment shows signs of slowing due to increased interest rates. In spite of increased domestic spend, U.S. agricultural exports face headwinds, which will impact farm production and profits. Agricultural commodity prices remain highly volatile and while prices decreased in recent months, certain agricultural commodity prices continue to be impacted by tight global supply and steady demand. The Russia/Ukraine war has also impacted certain agricultural commodity prices and created additional volatility and uncertainty in the markets. Although parts of the western United States received a significant amount of rain and snowfall in late 2022 and early 2023 due to atmospheric rivers and other weather patterns, significant drought conditions in this region persist and various agricultural sectors continue to face challenges for water resources. Higher input costs, especially cost of labor, and supply chain disruptions continue to impact the U.S. agricultural economy. The power and energy industries face challenges from higher natural gas and other energy prices, as well as increased labor prices. However, the long-term outlook in these sectors remains favorable to upgrade and maintain the energy grid, which is aided by infrastructure spending resulting from the passage of the Infrastructure Investment and Jobs Act and, to a lesser extent, the Inflation Reduction Act. Other political actions will impact 2023 as the current U.S. Farm Bill sunsets on September 30, 2023 and a divided Congress will need to collaborate to pass a new version this year which could have impacts on the agricultural sector.

Although challenges across our industry sectors could reduce credit quality and impact the level of loan demand, CoBank believes it remains well positioned to assist our customers and to continue to serve rural America.

Under the guidance of our Board of Directors and our experienced executive management team, we remain focused on achieving continued success through execution of our business strategies. This includes, among other objectives, creating mutually beneficial partnerships with other System institutions, maintaining effective access to the agency debt capital markets, opportunistically accessing the preferred stock capital markets, educating policy makers and other key stakeholders about the critical mission of CoBank and the System, prudently optimizing current lending authorities and maintaining compliance with laws and regulations. We continue to collaborate with our affiliated Associations on business model enhancements that further strengthen the ability to fulfill our collective mission, including through the more efficient use of capital. We will also continue to explore strategic alliances and other opportunities with our customers, other System institutions, financial service providers and other public and private entities as we strive to fulfill our mission in rural America in a safe and sound manner.

Forward Looking Statements

Certain of the statements contained in this annual report that are not historical facts are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Our actual results may differ materially and adversely from our expectations expressed in any forward-looking statements. Forward-looking statements are typically identified by words such as "believe," "expect," "anticipate," "intend," "estimate," "plan," "project," "target," "may," "will," "should," "would," "could" or similar expressions. Although we believe that the information expressed or implied in such forward-looking statements is reasonable, we can give no assurance that such projections and expectations will be realized or the extent to which a particular plan, projection or expectation may be realized. These forward-looking statements are based on current knowledge and are subject to various risks and uncertainties, including, but not limited to:

- Changes in inflation, the level of interest rates and relationships between various interest rate indices and actions taken by the Federal Reserve to manage the monetary policy of the United States;
- The Russia/Ukraine war and its impacts on global trade for grain, fertilizer and other commodities, economic conditions and global food supply;
- Government trade policies in the United States and other countries, including tariffs and other restrictions that impact markets for agricultural and other products;
- Changes in economic environment that negatively impact the agricultural, power, communications, water and leasing industries;
- Uncertainty of the extent, duration and effects of the COVID-19 pandemic and related business or supply chain disruptions;
- Replacement of LIBOR and the implementation of SOFR or other benchmark rate indexes;
- Currency fluctuations that impact the value of the U.S. dollar in global markets;
- Adverse food safety and weather events, disease, and other unfavorable conditions that periodically occur and impact agricultural productivity and income;
- Catastrophic events such as wildfires, floods and other natural disasters, pandemic health events, political unrest or other similar occurrences, which may have a direct or indirect impact on certain of our borrowers;
- Changes in levels of global crop production, exports, imports, usage and inventories;
- Credit performance of the loan portfolio;
- Performance of underlying collateral, including farmland values and specialized property that secures rural infrastructure credits;
- Loan portfolio growth and seasonal factors;
- Weakening domestic and global economic conditions;
- Volatility in energy prices including oil, natural gas and other fuel prices;
- Geopolitical uncertainties and government policy developments in the United States and throughout the world that may impact the industries we lend to, or, economic, fiscal or monetary conditions;
- The growing impact of the environmental, social and governance (ESG) trend in the financial services industry globally, including policies directed toward measuring the carbon impact from lending activities and efforts focused on reducing the impact of climate change;
- Changes in the U.S. government's support of the System, the agricultural industry, agricultural exports, rural infrastructure and rural economies, including passage of new Farm Bill legislation;
- Legislative or regulatory actions that affect current and ongoing operations of the System or the banking, financial services, agricultural, power, communications, water and leasing industries;
- Legislative or regulatory actions that affect our relationships with our employees;
- Actions taken by the U.S. Congress relative to other government-sponsored enterprises;
- Actions taken by the U.S. government to manage U.S. immigration or fiscal policies, including any changes to the U.S. debt ceiling;
- Actions taken by the U.S. Congress to fund infrastructure improvements;
- Changes to tax laws;
- A decrease in the credit outlook or ratings of U.S. government debt and agency debt, including our securities and Systemwide Debt Securities;
- Our ability to attract and retain employees in light of the ongoing labor shortage across the United States;
- Cybersecurity risks, including a failure or breach of our operational or security systems or infrastructure, that could adversely affect our business, financial performance and reputation;
- Disruptive technologies impacting the banking and financial services industries or implemented by our competitors which negatively impact our ability to compete in the marketplace;
- Changes in assumptions underlying the valuations of financial instruments;
- Changes in estimates underlying the allowance for credit losses;
- Failure of our investment portfolio to perform as expected or deterioration in the credit quality of such investments;
- Legal proceedings, judgments, settlements and related matters;
- Environmental-related conditions or laws impacting our lending activities;
- Nonperformance by counterparties under our derivative and vendor contracts;
- Success of business model solutions focused on strengthening our ability to fulfill the System's

collective mission, including through the more efficient use of capital; and

- Our ability to continue to partner with various System and other entities in light of ongoing consolidation within the System and the industries we serve.

We expressly disclaim any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of CoBank, ACB

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of CoBank, ACB and its subsidiaries (the "Bank") as of December 31, 2022, 2021, and 2020, and the related consolidated statements of income, of comprehensive income, of changes in shareholders' equity and of cash, for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Bank's internal control over financial reporting as of December 31, 2022, 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 Bank as of December 31, 2022, 2021, and 2020, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Bank maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Bank'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 Management's Report on Internal Control Over Financial Reporting appearing on page 133 of the 2022 Annual Report to Shareholders. Our responsibility is to express opinions on the Bank's consolidated financial statements and on the Bank's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Bank Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Bank in accordance with the relevant ethical requirements relating to our audit, which include standards of the American Institute of Certified Public Accountants (AICPA) Code of Professional Conduct and the Farm Credit Administration's independence rules set forth in 12 CFR Part 621, *Accounting and Reporting Requirements*, Subpart E, *Auditor Independence*.

We conducted our audits in accordance with the auditing standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. 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 Bank'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 Bank'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 Bank; (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 Bank are being made only in accordance with authorizations of management and directors of the Bank; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Bank'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 Matter

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.

Allowance for Credit Losses - Loans and Unfunded Commitments Collectively Evaluated for Impairment

As described in Notes 1 and 3 to the consolidated financial statements, the allowance for credit losses was $825.0 million, of which $795.8 million is related to loans and unfunded commitments collectively evaluated for impairment as of December 31, 2022. As disclosed by management, the allowance for credit losses reflects management's assessment of the risk of probable and estimable losses related to outstanding balances and unfunded commitments in the Bank's loan portfolio. To determine the allowance for credit losses related to loans and unfunded commitments collectively evaluated for impairment, management generally considers default rates from industry data, probability of default, loss given default assumptions, loss emergence timing, historical recovery rates, specific industry conditions, weather conditions, general economic and political conditions, and changes in the character, composition and performance of the portfolio, among other factors and assumptions. Additionally, management considers borrower, industry, geographic and portfolio concentrations, including current developments within operating segments, and modeling imprecision.

The principal considerations for our determination that performing procedures relating to the allowance for credit losses - loans and unfunded commitments collectively evaluated for impairment is a critical audit matter are (i) the estimate of the allowance for credit losses related to loans (and unfunded commitments) collectively evaluated for impairment involved significant judgment by management, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing audit procedures and evaluating audit evidence relating to default rates from industry data, probability of default, loss given default assumptions, loss emergence timing, and borrower, industry, geographic and portfolio concentrations, including current developments within operating segments; 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 theeffectiveness of controls relating to management's allowance for credit losses estimation process, which included controls over the factors and assumptions used within the allowance for credit losses related to loans and unfunded commitments collectively evaluated for impairment. These procedures also included, among others, testing management's process for determining the allowance for credit losses, which includedtesting the completeness and accuracy of certain data used in the estimate and the involvement of professionals with specialized skill and knowledge to assist in (i) evaluating the appropriateness of the methodology and models and (ii) evaluating the reasonableness of management's factors and assumptions related to the default rates from industry data, probability of default, loss given default assumptions, loss emergence timing, and borrower, industry, geographic and portfolio concentrations, including current developments within operating segments, used in determining the allowance of credit losses related to loansand unfunded commitments collectively evaluated for impairment.

PricewaterhouseCoopers LLP

Denver, Colorado
March 1, 2023

We have served as the Bank's auditor since 1989.

Consolidated Balance Sheets
CoBank, ACB

($ in Thousands)

As of December 31,	2022	2021	2020
Assets			
Total Loans	**$ 140,088,466**	$ 128,529,146	$ 120,855,800
Less: Allowance for Loan Losses	**681,862**	650,690	635,426
Net Loans	**139,406,604**	127,878,456	120,220,374
Cash and Cash Equivalents	**895,700**	3,196,869	2,335,212
Federal Funds Sold and Other Overnight Funds	**12,401,000**	5,500,000	835,000
Investment Securities	**33,096,964**	31,841,596	32,825,003
Accrued Interest Receivable	**749,144**	378,966	404,438
Interest Rate Swaps and Other Derivatives	**999,840**	486,654	877,874
Other Assets	**1,293,601**	1,023,383	1,088,503
Total Assets	**$ 188,842,853**	$ 170,305,924	$ 158,586,404
Liabilities			
Bonds and Notes	**$ 174,623,098**	$ 154,949,979	$ 143,383,683
Accrued Interest Payable	**843,348**	285,248	329,068
Interest Rate Swaps and Other Derivatives	**1,079,430**	371,684	610,420
Reserve for Unfunded Commitments	**143,170**	106,148	96,769
Patronage Payable	**855,895**	742,746	616,775
Other Liabilities	**1,073,224**	1,615,758	1,640,084
Total Liabilities	**178,618,165**	158,071,563	146,676,799
Commitments and Contingent Liabilities (Note 15)			
Shareholders' Equity			
Preferred Stock	**1,632,645**	1,902,500	1,500,000
Common Stock	**3,999,731**	4,012,706	3,917,740
Unallocated Retained Earnings	**6,518,987**	6,163,747	5,803,923
Accumulated Other Comprehensive (Loss) Income	**(1,926,675)**	155,408	687,942
Total Shareholders' Equity	**10,224,688**	12,234,361	11,909,605
Total Liabilities and Shareholders' Equity	**$ 188,842,853**	$ 170,305,924	$ 158,586,404

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

Consolidated Statements of Income
CoBank, ACB

($ in Thousands)

Year Ended December 31,	2022	2021	2020
Interest Income			
Loans	**$ 3,909,009**	$ 2,430,753	$ 2,736,175
Investment Securities	**679,667**	437,533	569,657
Federal Funds Sold and Other Overnight Funds	**159,471**	1,088	6,574
Total Interest Income	**4,748,147**	2,869,374	3,312,406
Interest Expense	**2,864,222**	1,143,474	1,745,874
Net Interest Income	**1,883,925**	1,725,900	1,566,532
Provision for Loan Losses	**111,000**	18,000	21,000
Net Interest Income After Provision for Loan Losses	**1,772,925**	1,707,900	1,545,532
Noninterest Income (Expense)			
Net Fee Income	**158,093**	152,913	141,190
Patronage Income	**151,263**	129,176	109,098
Prepayment Income	**9,010**	78,928	75,786
Gains (Losses) on Early Extinguishments of Debt	**1,058**	(126,078)	(78,653)
Gains (Losses) on Sales of Investment Securities	**1,449**	(36,531)	20
Gains on Interest Rate Swaps and Other Derivatives	**21,172**	16,068	19,358
Other, Net	**23,966**	(15,730)	15,037
Total Noninterest Income	**366,011**	198,746	281,836
Operating Expenses			
Employee Compensation	**238,134**	232,798	236,646
General and Administrative	**37,463**	35,056	28,093
Information Services	**68,609**	54,276	52,448
Insurance Fund Premium	**151,037**	108,416	59,484
Travel and Entertainment	**18,610**	9,251	7,062
Farm Credit System Related	**18,096**	15,902	15,659
Occupancy and Equipment	**17,447**	15,950	16,295
Purchased Services	**30,470**	18,762	18,832
Total Operating Expenses	**579,866**	490,411	434,519
Income Before Income Taxes	**1,559,070**	1,416,235	1,392,849
Provision for Income Taxes	**110,444**	102,076	129,848
Net Income	**$ 1,448,626**	$ 1,314,159	$ 1,263,001

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

Consolidated Statements of Comprehensive (Loss) Income
CoBank, ACB

($ in Thousands)

Year Ended December 31,	2022	2021	2020
Net Income	**$ 1,448,626**	$ 1,314,159	$ 1,263,001
Other Comprehensive (Loss) Income, Net of Tax:			
Net Change in Unrealized (Losses) Gains on Investment Securities Not Other-Than-Temporarily Impaired	**(2,160,248)**	(567,224)	566,652
Net Change in Unrealized Gains on Interest Rate Swaps and Other Derivatives	**99,524**	7,651	20,090
Net Pension Adjustment	**(21,359)**	27,039	6,775
Other Comprehensive (Loss) Income	**(2,082,083)**	(532,534)	593,517
Comprehensive (Loss) Income	**$ (633,457)**	$ 781,625	$ 1,856,518

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

Consolidated Statements of Changes in Shareholders' Equity
CoBank, ACB

($ in Thousands)

	Preferred Stock	Common Stock	Unallocated Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
Balance at December 31, 2019	$ 1,500,000	$ 3,621,577	$ 5,350,891	$ 94,425	$ 10,566,893
Comprehensive Income			1,263,001	593,517	1,856,518
Preferred Stock:					
Dividends			(84,160)		(84,160)
Common Stock:					
Issuances		203,582			203,582
Redemptions		(39,331)	2,619		(36,712)
Patronage Distribution:					
Cash			(489,913)		(489,913)
Special Cash			(106,603)		(106,603)
Common Stock		131,912	(131,912)		-
Balance at December 31, 2020	$ 1,500,000	$ 3,917,740	$ 5,803,923	$ 687,942	$ 11,909,605
Comprehensive Income			1,314,159	(532,534)	781,625
Preferred Stock:					
Dividends			(83,494)		(83,494)
Issuance	425,000		(4,624)		420,376
Redemption	(22,500)		4,500		(18,000)
Common Stock:					
Issuances		63			63
Redemptions		(32,934)			(32,934)
Patronage Distribution:					
Cash			(631,420)		(631,420)
Special Cash			(111,460)		(111,460)
Common Stock		127,837	(127,837)		-
Balance at December 31, 2021	$ 1,902,500	$ 4,012,706	$ 6,163,747	$ 155,408	$ 12,234,361
Comprehensive Loss			**1,448,626**	**(2,082,083)**	**(633,457)**
Preferred Stock:					
Dividends			**(92,663)**		**(92,663)**
Issuance	**400,000**		**(4,391)**		**395,609**
Redemptions	**(669,855)**		**13,125**		**(656,730)**
Common Stock:					
Issuances		**4,920**			**4,920**
Redemptions		**(156,730)**			**(156,730)**
Patronage Distribution:					
Cash			**(721,801)**		**(721,801)**
Special Cash			**(148,821)**		**(148,821)**
Common Stock		**138,835**	**(138,835)**		**-**
Balance at December 31, 2022	**$ 1,632,645**	**$ 3,999,731**	**$ 6,518,987**	**$ (1,926,675)**	**$ 10,224,688**

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

Consolidated Statements of Cash Flows
CoBank, ACB

($ in Thousands)

Year Ended December 31,	2022	2021	2020
Cash Flows Provided by Operating Activities			
Net Income	**$ 1,448,626**	$ 1,314,159	$ 1,263,001
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:			
Provision for Loan Losses	**111,000**	18,000	21,000
Deferred Income Taxes	**26,085**	42,681	140,852
Depreciation and Amortization/Accretion, Net	**46,125**	61,786	52,665
Net (Gains) Losses on Early Extinguishments of Debt	**(1,058)**	126,078	78,653
Net (Gains) Losses on Sales of Investment Securities	**(1,449)**	36,531	(20)
(Increase) Decrease in Accrued Interest Receivable	**(370,178)**	25,472	49,092
Increase in Other Assets	**(196,164)**	(223,255)	(207,836)
Increase (Decrease) in Accrued Interest Payable	**558,100**	(43,820)	(96,580)
Increase in Other Liabilities	**7,082**	191,328	3,258
Net (Gains) Losses on Interest Rate Swaps and Other Derivatives	**(1,208)**	11,208	10,696
(Payments) Proceeds from Termination of Interest Rate Swaps and Other Derivatives	**(34,767)**	11,677	426
Payments on Operating Lease Liabilities	**(10,216)**	(10,175)	(9,991)
Other, Net	**(4,024)**	(2,559)	3,373
Net Cash Provided by Operating Activities	**1,577,954**	1,559,111	1,308,589
Cash Flows Used in Investing Activities			
Net Increase in Loans	**(11,605,459)**	(7,675,646)	(12,053,793)
Investment Securities:			
Purchases	**(13,525,119)**	(16,417,644)	(36,664,097)
Proceeds from Maturities and Prepayments	**8,774,610**	12,583,443	33,958,770
Proceeds from Sales	**513,157**	3,954,099	3,499,919
Net (Increase) Decrease in Federal Funds Sold and Other Overnight Funds	**(6,901,000)**	(4,665,000)	975,000
Other, Net	**79,308**	93,176	52,614
Net Cash Used in Investing Activities	**(22,664,503)**	(12,127,572)	(10,231,587)
Cash Flows Provided by Financing Activities			
Bonds and Notes Proceeds	**145,278,298**	107,881,154	122,139,390
Bonds and Notes Retired	**(126,365,594)**	(96,648,366)	(111,463,334)
Proceeds (Payments) on Early Extinguishments of Debt	**1,058**	(126,078)	(78,653)
Net Increase in Notes Payable and Other Interest-bearing Liabilities	**820,089**	555,799	273,866
Preferred Stock Issued, Net	**395,609**	420,376	-
Preferred Stock Retired	**(656,730)**	(18,000)	-
Preferred Stock Dividends Paid	**(88,282)**	(82,408)	(85,088)
Common Stock Issued	**4,920**	63	203,582
Common Stock Retired	**(156,730)**	(32,934)	(36,712)
Cash Patronage Distribution Paid	**(632,113)**	(489,757)	(475,638)
Special Cash Patronage Distribution Paid	**(125,360)**	(106,603)	(39,839)
Cash Collateral Received (Paid) from (to) Derivative Counterparties, Net	**639,630**	188,440	(152,800)
Variation Margin (Paid) Received on Cleared Derivatives, Net	**(329,415)**	(111,568)	24,767
Net Cash Provided by Financing Activities	**18,785,380**	11,430,118	10,309,541
Net (Decrease) Increase in Cash and Cash Equivalents	**(2,301,169)**	861,657	1,386,543
Cash and Cash Equivalents at Beginning of Year	**3,196,869**	2,335,212	948,669
Cash and Cash Equivalents at End of Year	**$ 895,700**	$ 3,196,869	$ 2,335,212

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

Supplemental Consolidated Statements of Cash Flows Information
CoBank, ACB

($ in Thousands)

Year Ended December 31,	2022	2021	2020
Supplemental Noncash Investing and Financing Activities			
Net Change in Accrued Purchases of Securities	**$ 350,382**	$ 183,578	$ (533,960)
Net Change in Receivables from Investment Securities	**250,006**	(1,536)	(5,479)
Change in Unrealized (Losses) Gains on Investment Securities, Before Taxes	**(2,399,275)**	(635,442)	643,129
Patronage in Common Stock	**138,835**	127,838	131,912
Cash Patronage Payable	**721,801**	631,420	489,913
Special Cash Patronage Payable	**148,821**	111,460	106,603
Supplemental Noncash Fair Value Changes Related to Hedging Activities			
(Increase) Decrease in Interest Rate Swaps and Other Derivative Assets	**$ (513,186)**	$ 391,220	$ (497,159)
(Decrease) Increase in Bonds and Notes Related to Hedging Activities	**(623,037)**	(250,841)	165,001
Increase (Decrease) in Interest Rate Swaps and Other Derivative Liabilities	**707,746**	(238,736)	347,286
Supplemental Noncash Information Related to Leases			
Right-of-Use Assets Obtained in Exchange for Operating Lease Liabilitiies	**8,557**	8,323	8,150
Supplemental Disclosure of Cash Flow Information			
Interest Paid	**$ 1,993,169**	$ 1,194,824	$ 1,918,776
Income Taxes Paid	**61,765**	65,382	46,318

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

Notes to Consolidated Financial Statements

CoBank, ACB

($ in Thousands, Except Per Share Amounts and as Noted)

Note 1 – Description of Business and Summary of Significant Accounting Policies

Description of Business

CoBank, ACB (CoBank or the Bank) is one of the four banks in the Farm Credit System (System). CoBank provides loans, leases and other financial services to support agriculture, rural infrastructure and rural communities across the United States. The System is a federally chartered network of borrower-owned lending institutions composed of cooperatives and related service organizations. The System was established in 1916 by the U.S. Congress and is a Government Sponsored Enterprise (GSE). We are federally chartered under the Farm Credit Act of 1971, as amended (the Farm Credit Act), and are subject to supervision, examination and safety and soundness regulation by an independent federal agency, the Farm Credit Administration (FCA).

We provide a broad range of loans and other financial services through three operating segments: Agribusiness, Farm Credit Banking and Rural Infrastructure. We are cooperatively owned by our U.S. customers. Our customers consist of agricultural cooperatives; other food and agribusiness companies; rural power, communications and water cooperatives and companies; rural community facilities; Agricultural Credit Associations (Associations), which are regulated, farmer-owned financial institutions and members of the System; and other businesses that serve agriculture and rural communities. We are the primary funding source for certain Associations serving specified geographic regions in the United States. We collectively refer to these entities as our affiliated Associations.

Our wholly-owned leasing subsidiary, Farm Credit Leasing Services Corporation (FCL), specializes in lease financing and related services for a broad range of equipment, machinery, vehicles and facilities.

In conjunction with other System entities, the Bank jointly owns three service organizations: the Federal Farm Credit Banks Funding Corporation (Funding Corporation), the FCS Building Association and the Farm Credit System Association Captive Insurance Corporation. The Funding Corporation issues, markets and processes Federal Farm Credit Banks Consolidated Systemwide bonds, medium term notes and discount notes (collectively referred to as Systemwide Debt Securities) and also provides financial management and reporting services for the combined entities of the System. The FCS Building Association leases premises and equipment to the FCA as required by the Farm Credit Act. The Farm Credit Association Captive Insurance Company is a reciprocal insurer that provides insurance services such as directors and officers liability, fiduciary liability and a bankers bond to System organizations.

We have a minority ownership interest in AgVantis, Inc., which is chartered under the Farm Credit Act as a service organization to provide a range of support and technology services to certain Associations. We also have small equity interests in certain other System banks and Associations as required in connection with the purchase and sale of participation loans.

Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The consolidated financial statements include the accounts of CoBank and its wholly-owned subsidiaries, CoBank, FCB and FCL. All significant intercompany accounts and transactions have been eliminated.

The accompanying consolidated financial statements exclude financial information of our affiliated Associations. CoBank and our affiliated Associations are collectively referred to as the "District." Additional information about our affiliated Associations is contained in Note 18.

We prepare our financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) and prevailing practices within the financial services industry. These principles require us to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results may differ from those estimates. Significant estimates are discussed in these notes to the consolidated financial statements, as applicable.

Loans

We report loans, excluding leases, at their principal amount outstanding and accrue interest income based upon the daily principal amount outstanding. For loans purchased at a discount, we amortize unearned income using the straight-line method, which approximates the interest method. We defer loan origination fees and costs, and amortize them over the life of the related loan as an adjustment to yield. Most of our fixed-rate loans provide borrowers with the option to prepay their loans for a fee. When such loans are refinanced, loan prepayment fees are recognized upon extinguishment of the original loan and issuance of a new loan. For a refinancing determined to be a modification of the original loan, we defer and amortize loan prepayment fees over the life of the modified loan. This determination is based on the change in cash flows resulting from the refinancing.

Except as otherwise noted, leases in which we are the lessor are included with loans in the consolidated financial statements and related notes. We record these leases as either direct financing or operating leases. Under direct financing leases in which we are the lessor, unearned finance income from lease contracts represents the excess of gross lease receivables over the cost of leased equipment, net of estimated residual values. Residual values, which are reviewed at least annually, represent the estimated amount to be received at lease termination from the disposition of leased assets. We amortize net unearned finance income to interest income using the interest method. Under operating leases in which we are the lessor, property is recorded at cost and depreciated on a straight-line basis over the lease term to an estimated residual or salvage value. We recognize revenue as earned ratably over the term of the operating lease.

In the normal course of business, we manage lending credit exposures by selling or syndicating loans to System entities and other financial institutions. Such transactions include the transfer of participating interests, as defined pursuant to GAAP. We account for these transactions as sales and, accordingly, the assets transferred are not recognized in our consolidated balance sheets. We earn and recognize fees, which are reflected in net fee income in the accompanying consolidated statements of income, for acting as arranger or agent in these transactions and upon satisfying certain retention, timing and yield criteria.

Impaired Loans

Impaired loans are loans for which it is probable that not all principal and interest will be collected according to the contractual terms of the loans. Impaired loans include loans that are in nonaccrual status, accruing restructured, or past due 90 days or more and still accruing interest.

A loan is considered contractually past due when any principal repayment or interest payment required by the loan instrument is not received on or before the due date. A loan remains contractually past due until it is formally restructured or until the entire amount past due, including principal, accrued interest, and penalty interest incurred as the result of past due status, is collected or otherwise discharged in full.

We do not accrue interest income on impaired loans unless they are adequately secured and in the process of collection. When interest accruals are suspended, accrued and unpaid interest income is reversed with current year accruals charged to earnings and prior-year amounts charged off against the allowance for loan losses.

For nonaccrual loans, we primarily apply cash receipts against the outstanding principal balance. If collectability of the loan balance is fully expected and certain other criteria are met, we recognize interest payments as interest income. We may return such loans to accrual status when the borrower is current, has demonstrated payment performance, collection of future payments is fully expected and there are no unrecovered charge-offs.

Generally, troubled debt restructurings (TDRs) are reported as either performing or nonperforming loans. Accruing restructured loans, which represent performing TDRs, are those for which the contractual terms and conditions have been amended or otherwise revised to incorporate certain monetary concessions because the borrower was experiencing financial difficulty at the time of restructuring. Such a loan that is subsequently refinanced at a current market rate with no concessionary terms is accounted for as a new loan and is no longer reported as a TDR. We place the loan in nonaccrual status if the borrower's ability to meet the revised contractual terms is uncertain.

We establish an impairment reserve if the fair value of assets held for operating leases in which we are the lessor decreases to below book value and such difference is not recoverable.

Allowance for Loan Losses and Reserve for Unfunded Commitments

Our allowance for loan losses is an adjustment to the value of our total loan and finance lease portfolio for inherent credit losses related to outstanding balances. We also maintain a separate reserve for unfunded commitments which is reported as a liability on the Bank's consolidated balance sheet. The reserve for unfunded commitments represents an additional reserve for binding commitments to extend credit and for commercial letters of credit. We had $47.5 billion and $51.1 million of commitments to extend credit and commercial letters of credit, respectively, at December 31, 2022. The amount of our allowance for loan losses and reserve for unfunded commitments can fluctuate based on the seasonal nature of borrowings in the agriculture industry, which is impacted by various factors including changes in the prices and supplies- of agricultural commodities. We refer to the combined amounts of the allowance for loan losses and the reserve for unfunded commitments as the "allowance for credit losses." At December 31, 2022, our allowance for credit losses totaled $825 million, of which $682 million related to the allowance for loan losses and $143 million related to the reserve for unfunded commitments.

The allowance for credit losses is maintained at a level we consider sufficient to absorb losses inherent in the loan and finance lease portfolio and in unfunded commitments. We base the allowance for credit losses on our regular evaluation of these portfolios.

To determine our allowance for credit losses, we divide our loans and finance leases into two broad categories: those that are impaired and those that are not. A loan or finance lease is impaired when, based on current information and events, it is probable that we will not collect all amounts due under the contractual terms. Impairment of loans and finance leases is measured based on the fair value of the collateral, if the loan or finance lease is collateral dependent, or the present value of expected future cash flows discounted at the effective interest rate of the contract. In limited cases, we base the impairment on observable market prices. Changes in the financial condition of our borrowers and in the general economy will cause these estimates, appraisals and evaluations to change.

For loans and finance leases that are not individually assessed for impairment, we establish an allowance for credit losses for losses that are both probable and estimable as of the balance sheet date. The evaluation of this portion of our portfolio generally considers default rates from industry data, probability of default, loss given default assumptions, loss timing, historical recovery rates, specific industry conditions, weather conditions, general economic and political conditions, and changes in the character, composition and performance of the portfolio, among other factors. We also consider overall portfolio indicators, including trends in internally risk-rated exposures, classified exposures, and historical charge-offs and recoveries. Additionally, we consider borrower, industry, geographic and portfolio concentrations, including current developments within operating segments, and modeling imprecision. Changes in these factors, or our assumptions and estimates thereof, could result in a change in the allowance for credit losses and could have a direct and material impact on the provision for loan losses and our results of operations. The total allowance for credit losses is available to absorb probable and estimable credit losses within our entire portfolio.

We increase or decrease the allowance for credit losses by recording a provision or reversal for loan losses in the statement of income. We record loan losses against the allowance for loan losses when management determines that any portion of the loan or finance lease is uncollectible. We add subsequent recoveries, if any, to the allowance for loan losses. Transfers between the allowance for loan losses and the reserve for unfunded commitments can occur in conjunction with funding a seasonal line of credit or other loan and decreasing a related unfunded commitment or, conversely, receiving a loan payment and increasing a related unfunded commitment. Newly-executed loan commitments will also increase this liability.

We also assess the credit risk associated with off-balance sheet loan commitments and letters of credit and determine the appropriate level of reserve for unfunded commitments that should be recorded.

No significant changes were made to our methodology for estimating the allowance for credit losses in 2022, 2021 or 2020. As discussed in Note 2, CoBank adopted the Current Expected Credit Losses (CECL) accounting standard on January 1, 2023.

Cash and Cash Equivalents

For purposes of these financial statements, cash represents demand deposits at banks and deposits in the process of clearing, which are used for operating or liquidity purposes.

Federal Funds Sold and Other Overnight Funds

Federal funds sold transactions involve lending excess cash reserve balances on a short-term basis, generally overnight. Other overnight funds include deposits with commercial banks and reverse repurchase agreements with the Federal Reserve. In each of these transactions, funds are returned to the Bank the following business day and earn interest overnight. Such investments are reported at fair value, which is generally their face value.

Investment Securities

We classify investment securities as available-for-sale and report them at their estimated fair value. We have no trading or held-to-maturity securities. We amortize or accrete purchased premiums and discounts using the constant yield method, which approximates the interest method, over the terms of the respective securities. We report unrealized gains and losses, net of applicable income taxes and credit losses, in the accumulated other comprehensive income (loss) component of shareholders' equity on the consolidated balance sheets. We report realized gains and losses on sales of investments in noninterest income in our consolidated statements of income. We use the specific identification method for determining cost in computing realized gains and losses on sales of investment securities.

We evaluate investments in a loss position to determine if such a loss is other-than-temporary. If losses are deemed to be other-than-temporary, we record the portion related to credit losses in earnings and the portion related to all other factors in other comprehensive income (loss). For additional information, refer to Note 4. As discussed in Note 2, CoBank adopted the CECL accounting standard on January 1, 2023, which includes an allowance for credit losses for certain investment securities.

Premises and Equipment

We carry premises and equipment at cost less accumulated depreciation and amortization. We provide for depreciation and amortization on the straight-line method over the estimated useful lives of the assets. We record gains and losses on dispositions in current operating results. We record maintenance and repairs to operating expenses when incurred and capitalize improvements.

We capitalize leased property and equipment meeting certain criteria and depreciate such assets using the straight-line method over the terms of the respective leases.

The Bank's corporate headquarters in Greenwood Village, Colorado is our most significant leased property and we have recorded a right-of-use asset and lease liability related to it. As of December 31, 2022, rental payments associated with the headquarters lease total approximately $57.6 million over the remaining term of 8 years.

Mineral Rights

As a result of our 2012 merger with U.S. AgBank, FCB (AgBank), we own mineral rights in Arizona, California, Colorado, Kansas, Nevada, New Mexico, Oklahoma and Utah. As required by the merger agreement, the net earnings from these mineral rights are passed on directly to certain Associations. Mineral income is primarily generated from royalties on natural gas and crude oil production, leasing bonuses and rental payments. This income may vary from year to year based on fluctuations in energy demand, prices and production. In 2022, net mineral income passed directly to these Associations totaled $14.0 million compared to $9.3 million in 2021 and $6.3 million in 2020. As a result of the agreement to pass the net earnings from mineral rights to certain Associations, these mineral rights have no carrying value in our consolidated balance sheet.

Other Investments

We apply the equity method of accounting to certain equity investments classified within other assets in which we do not control the investee, but have limited influence over the operating and financial policies of the investee. This primarily includes our investments in which we are a limited partner in Rural Business Investment Companies (RBICs) and unincorporated business entities (UBEs), as well as our investments in the FCS Building Association and Farm Credit System Association Captive Insurance Corporation. We also hold an equity investment as a result of the bankruptcy of a former customer which is accounted for at cost less any impairment as there is no readily determinable fair value.

Derivatives and Hedging Activities

We record derivatives as assets or liabilities at their fair value on the consolidated balance sheets. We record changes in the fair value of a derivative in current period earnings or accumulated other comprehensive income (loss), depending on the use of the derivative and whether it qualifies for fair value or cash flow hedge accounting. For derivatives not designated as hedging instruments, we record the related change in fair value in current period earnings.

We formally document all relationships between derivatives and hedged items, as well as risk management objectives and strategies for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value or cash flow hedges to assets and liabilities on the consolidated balance sheet or to forecasted transactions.

We also formally assess (both at the hedge's inception and on an ongoing basis) whether the derivatives that are used in hedging transactions have been effective in offsetting changes in the fair value or cash flows of hedged items and whether those derivatives are expected to remain effective in future periods. We typically use regression analyses or other statistical analyses to assess the effectiveness of hedges. Hedge accounting is discontinued prospectively if: (i) it is determined that the derivative is no longer effective in offsetting changes in the fair value or cash flows of a hedged item; (ii) the derivative expires or is sold, terminated or exercised; or (iii) management determines that the fair value or cash flow hedge designation is no longer appropriate.

If we determine that a derivative no longer qualifies as an effective fair value or cash flow hedge, or if management removes the hedge designation, we continue to carry the derivative on the balance sheet at fair value, with changes in fair value recognized in current period earnings as part of noninterest income. For discontinued cash flow hedges, we amortize the component of other comprehensive income (loss) to net interest income over the original term of the hedge contract. For cash flow hedges in which the forecasted transaction is not probable of occurring, we immediately reclassify amounts in other comprehensive income (loss) to current period earnings. For additional information, refer to Note 10.

Systemwide Debt Securities

We, along with the other System banks, obtain funds for lending activities and operations primarily from the sale of debt securities issued by System banks through the Funding Corporation. These debt securities are composed of bonds, medium-term notes and discount notes and are collectively referred to as Systemwide Debt Securities. Pursuant to the Farm Credit Act, Systemwide Debt Securities are the general unsecured joint and several obligations of the System banks, and each System bank is primarily liable for the portion of the Systemwide Debt Securities issued on its behalf. CoBank accounts for its joint and several liabilities for all Systemwide Debt Securities as a contingent liability. We do not record a liability unless it is probable that we will be required to pay an amount and that amount can be reasonably estimated. At December 31, 2022, CoBank was primarily liable for $170.8 billion of Systemwide Debt Securities, which was recorded as a liability on our consolidated balance sheet. For additional information, refer to Note 5.

Fair Value Measurements

Our fair value measurements represent the estimated amount to be received to sell an asset or paid to transfer or extinguish a liability (an exit price) in active markets among willing participants at the reporting date. We maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The classification of assets and liabilities measured at fair value within the disclosure hierarchy is based on three levels of inputs to the fair value measurement process, which are described in Note 11.

Fair Value of Guarantor's Obligations

We provide standby letters of credit, which are irrevocable undertakings to guarantee payment of a specified financial obligation. As a guarantor, we recognize a liability for the fair value of the obligation undertaken in issuing the guarantee. Our liability for the fair value of these obligations is determined by applying a risk-adjusted spread percentage to those obligations.

Employee Benefit Plans

Our employee benefit plans are described in Note 7. The net expense for employee benefit plans is recorded as employee compensation expense. For defined benefit pension plans, we use the "Projected Unit Credit" actuarial method for financial reporting and funding purposes.

The anticipated costs of benefits related to postretirement health care and life insurance are accrued during the period of the employees' active service and are classified as employee compensation expense.

Income Taxes

CoBank operates as a non-exempt cooperative, which qualifies for tax treatment under Subchapter T of the Internal Revenue Code. Accordingly, amounts distributed as qualified patronage distributions to borrowers in the form of cash or stock may be deducted from taxable income and are generally included in the recipients' taxable income. We base provisions for income taxes for financial reporting purposes only on those taxable earnings that will not be distributed as qualified patronage distributions. Substantially all of the Bank's statutorily tax-exempt activities reside in CoBank, FCB, a wholly-owned subsidiary of CoBank.

We record deferred tax assets and liabilities for temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases except for our nontaxable entity. We measure these deferred amounts using the current marginal statutory tax rate on the taxable portion of our business activities. Calculating deferred tax assets and liabilities involves various management estimates and assumptions as to future taxable earnings. We expect to fully realize deferred tax assets based on the projected level of future taxable income and other factors.

Note 2 – Recently Issued or Adopted Accounting Pronouncements

Accounting Pronouncements Adopted During 2022

In March 2020, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU), "Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting." The ASU provides optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships, and other transactions affected by reference rate reform. The ASU simplifies the accounting evaluation of contract modifications that replace a reference rate affected by reference rate reform and contemporaneous modifications of other contract terms related to the replacement of the reference rate. With respect to hedge accounting, the ASU allows amendment of formal designation and documentation of hedging relationships in certain circumstances as a result of reference rate reform and provides additional expedients for different types of hedges, if certain criteria are met. The optional amendments were effective for all entities as of March 12, 2020, through December 31, 2022. We applied the optional expedients available under this ASU to our debt and derivative contract modifications related to LIBOR transition in the fourth quarter of 2020 as more fully described in Notes 5 and 10. We have also elected the optional expedients to our loans as we incorporate fallback language into these agreements. In January 2021, the FASB issued ASU 2021-01, "Reference Rate Reform (Topic 848): Scope." The ASU allows certain derivative instruments to be modified to change the rate used for margining, discounting, or contract price alignment. An entity may elect to apply the optional amendments from March 12, 2020 to December 31, 2022. We adopted ASU 2021-01 on January 7, 2021 and the adoption did not have an impact on our consolidated financial position, results of operations or cash flows. In December 2022, the FASB issued ASU 2022-06, "Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848". This ASU defers the sunset date of the guidance in Topic 848 on reference reform to December 31, 2024. This ASU is effective upon issuance. We adopted ASU 2022-06 upon issuance and the adoption did not have an impact on our consolidated financial position, results of operations or cash flows.

Recently Issued Accounting Pronouncements

In March 2022, the FASB issued ASU, "Financial Instruments – Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosure." This ASU responds to feedback received during the post-implementation review of ASU 2016-13, "Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments." The amendments in this ASU eliminate the accounting guidance for troubled debt restructurings (TDRs) by creditors in Subtopic 310-40, Receivables – Troubled Debt Restructurings by Creditors, while enhancing disclosure requirements for certain loan refinancings and restructurings by creditors when a borrower is experiencing financial difficulty. The amendments in this ASU also require that an entity disclose current-period gross writeoffs by year of origination for financing receivables and net investments in leases within the scope of Subtopic 326-20, Financial Instruments—Credit Losses—Measured at Amortized Cost. CoBank adopted this ASU on January 1, 2023 and the adoption did not have a material impact on our consolidated financial position, results of operations or cash flows. We will adopt the required disclosures beginning in 2023.

In June 2016, the FASB issued ASU, "Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments." The ASU introduces a new model for recognizing credit losses on financial instruments based on an estimate of Current Expected Credit Losses (CECL). The new model will apply to: (1) loans, accounts receivable, trade receivables, and other financial assets measured at amortized cost; (2) loan commitments and certain other off-balance sheet credit exposures; (3) debt securities and other financial assets measured at fair value through other comprehensive income (loss); and (4) beneficial interests in securitized financial assets. The ASU also requires certain new loan and allowance for credit losses disclosures, including loan vintage information. For public business entities that are not U.S. Securities and Exchange Commission (SEC) filers the ASU is effective in fiscal years beginning after December 15, 2022. CoBank adopted this ASU on January 1, 2023. On adoption, we recorded a decrease of $74.7 million in our allowance for credit losses related to loans, leases and unfunded commitments with an offsetting increase to our shareholders equity, net of taxes. The decrease in our allowance for credit losses under CECL is primarily due to the measurement of credit losses under CECL over the contractual life of a loan compared to existing GAAP which is based on management's estimate of the loss emergence period for a loan. As a result of this measurement change, a large portion of our agribusiness loan volume, including seasonal lending to grain and farm supply cooperatives as well as other short-term loans, have a lower allowance for credit losses under CECL. In contrast, and partially offsetting this reduction, our long-term rural infrastructure loans to many of our communications, energy and water customers have a higher CECL allowance for credit losses. In addition, the adoption of the ASU resulted in a $6.0 million allowance for credit losses on our investment portfolio of available-for-sale debt securities with an offsetting decrease to our shareholders' equity, net of taxes. The substantial majority of these investments have no risk of credit loss because they carry a full faith and credit guarantee of the U.S. government or are issued by U.S. agencies with an implicit guarantee from the U.S. government. The entire amount of the allowance for credit losses on our investment portfolio of available-for-sale debt securities related to our investments in corporate bonds that are not guaranteed by the U.S. government or U.S. agencies.

Note 3 – Loans, Loan Quality and Allowance for Credit Losses

Loans Outstanding

Loans outstanding by operating segment are shown below.

($ in Millions)

As of December 31,	2022		2021		2020	
	Amount	%	Amount	%	Amount	%
Agribusiness	**$ 40,098**	**29 %**	$ 38,094	30 %	$ 36,103	30 %
Farm Credit Banking	**71,529**	**51**	65,632	51	60,516	50
Rural Infrastructure	**28,461**	**20**	24,803	19	24,237	20
Total	**$ 140,088**	**100 %**	$ 128,529	100 %	$ 120,856	100 %
Loans Purchased	**$ 22,189**		$ 20,438		$ 20,820	
Loans Sold	**31,687**		26,602		24,979	

We have loans outstanding in all 50 states as well as certain foreign countries and a limited number of U.S. territories. Our agricultural export finance loan portfolio, which is part of our Agribusiness operating segment, includes U.S. government-sponsored trade financing programs which guarantee payment in the event of default by the borrower of generally 98 percent of loan principal outstanding and varying percentages of interest due. Of the $8.6 billion in agricultural export finance loans outstanding as of December 31, 2022, 27 percent were guaranteed by the U.S. government under one of these trade financing programs, primarily the General Sales Manager program of the U.S. Department of Agriculture's Commodity Credit Corporation. We make loans to customers in various industries. For the years ended December 31, 2022, 2021 and 2020, total loans outstanding (excluding wholesale loans to Associations) did not exceed 10 percent for any specific industry.

Wholesale loans to our affiliated Associations represented 47 percent, 47 percent and 46 percent of total loans outstanding at December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, our affiliated Associations provided financing and other financial services to farmer-owners for rural real estate, equipment, working capital, agricultural production and operating purposes in the Northwest, West, Southwest, Rocky Mountains, Mid-Plains and Northeast regions of the United States. Participations in loans made by other System banks to their affiliated Associations represented 4 percent of our total loans outstanding at December 31, 2022, 2021 and 2020.

Unamortized loan premiums and discounts, and unamortized deferred loan fees and costs totaled $209.5 million, $99.2 million and $107.1 million as of December 31, 2022, 2021 and 2020, respectively.

Allowance for Credit Losses

The following tables present changes in the components of our allowance for credit losses and details of ending balances. The allowance for credit losses includes the allowance for loan losses and the reserve for unfunded commitments. The elements of our allowance for credit losses are presented by operating segment.

	Agribusiness	Farm Credit Banking[(1)]	Rural Infrastructure	Total
Year ended December 31, 2022				
Allowance for Loan Losses				
Beginning Balance	$ 499,084	$ -	$ 151,606	$ 650,690
Charge-offs	(21,162)	-	(23,737)	(44,899)
Recoveries	1,285	-	808	2,093
Provision for Loan Losses	71,500	-	39,500	111,000
Transfers to Reserve for Unfunded Commitments[(2)]	(33,664)	-	(3,358)	(37,022)
Ending Balance	517,043	-	164,819	681,862
Reserve for Unfunded Commitments				
Beginning Balance	$ 87,912	$ -	$ 18,236	$ 106,148
Transfers from Allowance for Loan Losses[(2)]	33,664	-	3,358	37,022
Ending Balance	121,576	-	21,594	143,170
Allowance for Credit Losses	$ 638,619	$ -	$ 186,413	$ 825,032
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans and Unfunded Commitments:				
Individually Evaluated for Impairment	$ 27,327	$ -	$ 1,900	$ 29,227
Collectively Evaluated for Impairment	611,292	-	184,513	795,805
Total	$ 638,619	$ -	$ 186,413	$ 825,032
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 136,713	$ 71,777,723	$ 8,665	$ 71,923,101
Collectively Evaluated for Impairment	40,187,488	-	28,576,040	68,763,528
Total	$ 40,324,201	$ 71,777,723	$ 28,584,705	$ 140,686,629

(1) As a result of our strong collateral position with respect to loans to Associations, along with the earnings, capital, portfolio diversification and loss reserves of Associations that serve as an additional layer of protection against losses, no allowance for credit losses is recorded in our Farm Credit Banking operating segment.

(2) These transfers generally occur as a result of advances on or repayments of seasonal lines of credit or other loans.

	Agribusiness	Farm Credit Banking[1]	Rural Infrastructure	Total
Year ended December 31, 2021				
Allowance for Loan Losses				
Beginning Balance	$ 489,424	$ -	$ 146,002	$ 635,426
Charge-offs	(3,628)	-	(2,560)	(6,188)
Recoveries	4,283	-	8,548	12,831
Provision for Loan Losses	16,000	-	2,000	18,000
Transfers to Reserve for Unfunded Commitments[2]	(6,995)	-	(2,384)	(9,379)
Ending Balance	499,084	-	151,606	650,690
Reserve for Unfunded Commitments				
Beginning Balance	$ 80,917	$ -	$ 15,852	$ 96,769
Transfers from Allowance for Loan Losses[2]	6,995	-	2,384	9,379
Ending Balance	87,912	-	18,236	106,148
Allowance for Credit Losses	$ 586,996	$ -	$ 169,842	$ 756,838
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans and Unfunded Commitments:				
Individually Evaluated for Impairment	$ 19,785	$ -	$ 11,125	$ 30,910
Collectively Evaluated for Impairment	567,211	-	158,717	725,928
Total	$ 586,996	$ -	$ 169,842	$ 756,838
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 73,944	$ 65,717,074	$ 48,687	$ 65,839,705
Collectively Evaluated for Impairment	38,124,664	-	24,828,430	62,953,094
Total	$ 38,198,608	$ 65,717,074	$ 24,877,117	$ 128,792,799
Year ended December 31, 2020				
Allowance for Loan Losses				
Beginning Balance	$ 471,495	$ -	$ 183,269	$ 654,764
Charge-offs	(6,472)	-	(32,230)	(38,702)
Recoveries	2,248	-	583	2,831
Provision for Loan Losses (Loan Loss Reversal)	25,600	-	(4,600)	21,000
Transfers to Reserve for Unfunded Commitments[2]	(3,446)	-	(1,021)	(4,467)
Ending Balance	489,425	-	146,001	635,426
Reserve for Unfunded Commitments				
Beginning Balance	77,471	-	14,831	92,302
Transfers from Allowance for Loan Losses[2]	3,446	-	1,021	4,467
Ending Balance	80,917	-	15,852	96,769
Allowance for Credit Losses	$ 570,342	$ -	$ 161,853	$ 732,195
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans and Unfunded Commitments:				
Individually Evaluated for Impairment	$ 20,821	$ -	$ 3,300	$ 24,121
Collectively Evaluated for Impairment	549,521	-	158,553	708,074
Total	$ 570,342	$ -	$ 161,853	$ 732,195
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 98,401	$ 60,601,584	$ 19,000	$ 60,718,985
Collectively Evaluated for Impairment	36,110,902	-	24,293,020	60,403,922
Total	$ 36,209,303	$ 60,601,584	$ 24,312,020	$ 121,122,907

(1) As a result of our strong collateral position with respect to loans to Associations, along with the earnings, capital, portfolio diversification and loss reserves of Associations that serve as an additional layer of protection against losses, no allowance for credit losses is recorded in our Farm Credit Banking operating segment.

(2) These transfers generally occur as a result of advances on or repayments of seasonal lines of credit or other loans.

The information in the tables under the Credit Quality, Aging Analysis and Impaired Loans captions is presented by operating segment, with guaranteed and non-guaranteed loans in our Agribusiness segment separately identified.

Credit Quality

The following table presents our loans and accrued interest classified, by management, pursuant to our regulator's Uniform Loan Classification System.

December 31, 2022	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
Acceptable	**$ 36,114,276**	**$ 2,260,461**	**$ 70,170,275**	**$ 28,260,748**	**$ 136,805,760**
Special Mention	**1,013,518**	**-**	**1,607,448**	**231,421**	**2,852,387**
Substandard	**935,108**	**-**	**-**	**92,536**	**1,027,644**
Doubtful	**838**	**-**	**-**	**-**	**838**
Loss	**-**	**-**	**-**	**-**	**-**
Total	**$ 38,063,740**	**$ 2,260,461**	**$ 71,777,723**	**$ 28,584,705**	**$ 140,686,629**
December 31, 2021					
Acceptable	$ 34,823,345	$ 1,185,750	$ 64,188,986	$ 24,661,098	$ 124,859,179
Special Mention	1,381,925	-	1,528,088	101,482	3,011,495
Substandard	805,578	-	-	114,537	920,115
Doubtful	2,010	-	-	-	2,010
Loss	-	-	-	-	-
Total	$ 37,012,858	$ 1,185,750	$ 65,717,074	$ 24,877,117	$ 128,792,799
December 31, 2020					
Acceptable	$ 32,397,637	$ 1,497,512	$ 58,830,561	$ 24,041,710	$ 116,767,420
Special Mention	1,743,097	-	1,771,023	191,725	3,705,845
Substandard	564,493	-	-	73,483	637,976
Doubtful	6,564	-	-	5,102	11,666
Loss	-	-	-	-	-
Total	$ 34,711,791	$ 1,497,512	$ 60,601,584	$ 24,312,020	$ 121,122,907

Aging Analysis

The following tables present an aging of past due loans and accrued interest.

December 31, 2022	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
30-89 Days Past Due	**$ 84,761**	**$ -**	**$ -**	**$ 34,289**	**$ 119,050**
90 Days Past Due	**77,131**	**-**	**-**	**-**	**77,131**
Total Past Due	**$ 161,892**	**$ -**	**$ -**	**$ 34,289**	**$ 196,181**
Current	**37,901,848**	**2,260,461**	**71,777,723**	**28,550,416**	**140,490,448**
Total	**$ 38,063,740**	**$ 2,260,461**	**$ 71,777,723**	**$ 28,584,705**	**$ 140,686,629**
Accruing Loans 90 Days or More Past Due	**$ 14,924**	**$ -**	**$ -**	**$ -**	**$ 14,924**
December 31, 2021					
30-89 Days Past Due	$ 57,032	$ -	$ -	$ 1,219	$ 58,251
90 Days Past Due	20,091	-	-	19,982	40,073
Total Past Due	$ 77,123	$ -	$ -	$ 21,201	$ 98,324
Current	36,935,735	1,185,750	65,717,074	24,855,916	128,694,475
Total	$ 37,012,858	$ 1,185,750	$ 65,717,074	$ 24,877,117	$ 128,792,799
Accruing Loans 90 Days or More Past Due	$ 2,738	$ -	$ -	$ -	$ 2,738

December 31, 2020	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
30-89 Days Past Due	$ 35,635	$ -	$ -	$ 11,691	$ 47,326
90 Days Past Due	29,519	-	-	5,102	34,621
Total Past Due	$ 65,154	$ -	$ -	$ 16,793	$ 81,947
Current	34,646,637	1,497,512	60,601,584	24,295,227	121,040,960
Total	$ 34,711,791	$ 1,497,512	$ 60,601,584	$ 24,312,020	$ 121,122,907
Accruing Loans 90 Days or More Past Due	$ 736	$ -	$ -	$ -	$ 736

Impaired Loans

Impaired loan information is shown in the following table. Loans past due 90 days or more and still accruing interest are adequately secured and in the process of collection.

December 31, 2022	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[(1)]	Farm Credit Banking[(1)]	Rural Infrastructure	Total
Nonaccrual Loans[(2)]	**$ 136,713**	**$ -**	**$ -**	**$ 8,665**	**$ 145,378**
Accruing Loans 90 Days or More Past Due	**14,924**	**-**	**-**	**-**	**14,924**
Accruing Restructured Loans	**5,538**	**-**	**-**	**-**	**5,538**
Total Impaired Loans	**$ 157,175**	**$ -**	**$ -**	**$ 8,665**	**$ 165,840**
December 31, 2021					
Nonaccrual Loans[(2)]	$ 73,944	$ -	$ -	$ 48,687	$ 122,631
Accruing Loans 90 Days or More Past Due	2,738	-	-	-	2,738
Accruing Restructured Loans	-	-	-	-	-
Total Impaired Loans	$ 76,682	$ -	$ -	$ 48,687	$ 125,369
December 31, 2020					
Nonaccrual Loans[(2)]	$ 98,401	$ -	$ -	$ 19,000	$ 117,401
Accruing Loans 90 Days or More Past Due	736	-	-	-	736
Accruing Restructured Loans	-	-	-	-	-
Total Impaired Loans	$ 99,137	$ -	$ -	$ 19,000	$ 118,137

(1) There were no impaired loans in our Agribusiness Guaranteed or Farm Credit Banking portfolios for any of the periods presented.

(2) Included in nonaccrual loans at December 31, 2022, 2021 and 2020 are $11.0 million, $11.5 million and $12.5 million, respectively, of loans that qualify as troubled debt restructurings.

The following tables present information on impaired loans and related amounts in the allowance for loan losses.

December 31, 2022	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[(1)]	Farm Credit Banking[(1)]	Rural Infrastructure	Total
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 43,190	$ -	$ -	$ -	$ 43,190
Unpaid Principal	57,904	-	-	50	57,954
Average Balance	54,488	-	-	6,476	60,964
Interest Income Recognized	4,074	-	-	256	4,330
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	113,985	-	-	8,665	122,650
Unpaid Principal	118,650	-	-	8,959	127,609
Allowance for Loan Losses	27,327	-	-	1,900	29,227
Average Balance	72,508	-	-	34,872	107,380
Interest Income Recognized	32	-	-	-	32
Total Impaired Loans					
Carrying Amount	157,175	-	-	8,665	165,840
Unpaid Principal	176,554	-	-	9,009	185,563
Allowance for Loan Losses	27,327	-	-	1,900	29,227
Average Balance	126,996	-	-	41,348	168,344
Interest Income Recognized	4,106	-	-	256	4,362
December 31, 2021					
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 35,647	$ -	$ -	$ -	$ 35,647
Unpaid Principal	57,565	-	-	-	57,565
Average Balance	44,336	-	-	7,814	52,150
Interest Income Recognized	18,001	-	-	273	18,274
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	41,035	-	-	48,687	89,722
Unpaid Principal	44,002	-	-	49,191	93,193
Allowance for Loan Losses	19,785	-	-	11,125	30,910
Average Balance	51,467	-	-	35,431	86,898
Interest Income Recognized	-	-	-	-	-
Total Impaired Loans					
Carrying Amount	76,682	-	-	48,687	125,369
Unpaid Principal	101,567	-	-	49,191	150,758
Allowance for Loan Losses	19,785	-	-	11,125	30,910
Average Balance	95,803	-	-	43,245	139,048
Interest Income Recognized	18,001	-	-	273	18,274

(1) There were no impaired loans in our Agribusiness Guaranteed or Farm Credit Banking portfolios for any of the periods presented.

December 31, 2020	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[(1)]	Farm Credit Banking[(1)]	Rural Infrastructure	Total
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 40,674	$ -	$ -	$ 5,101	$ 45,775
Unpaid Principal	71,796	-	-	23,363	95,159
Average Balance	52,750	-	-	5,727	58,477
Interest Income Recognized	13,880	-	-	-	13,880
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	58,463	-	-	13,899	72,362
Unpaid Principal	69,809	-	-	14,124	83,933
Allowance for Loan Losses	20,821	-	-	3,300	24,121
Average Balance	129,445	-	-	29,239	158,684
Interest Income Recognized	13,522	-	-	-	13,522
Total Impaired Loans					
Carrying Amount	99,137	-	-	19,000	118,137
Unpaid Principal	141,605	-	-	37,487	179,092
Allowance for Loan Losses	20,821	-	-	3,300	24,121
Average Balance	182,195	-	-	34,966	217,161
Interest Income Recognized	27,402	-	-	-	27,402

(1) There were no impaired loans in our Agribusiness Guaranteed or Farm Credit Banking portfolios for any of the periods presented.

Interest income forgone on nonaccrual and accruing restructured loans is as follows:

Year Ended December 31, 2022	
Interest Income Which Would Have Been Recognized Per Original Terms	$ 12,859
Less: Interest Income Recognized	(3,958)
Forgone Interest Income	$ 8,901

Commitments on Impaired Loans

There were $16.2 million in commitments available to be drawn by borrowers whose loans were classified as impaired at December 31, 2022.

Troubled Debt Restructurings

Troubled debt restructurings (TDRs) are loans in which we have granted a concession because the borrower is experiencing financial difficulty. Concessions may include payment deferrals, term extensions, interest rate reductions, and/or forgiveness of principal or interest. TDRs classified as nonaccrual loans, along with other impaired loans, may be returned to accruing status upon meeting specific criteria, as more fully described in Note 1. A summary of the number of modifications that qualified as TDRs and the dollar amounts before and after modification is as follows:

December 31,	2022	2021[(1)]	2020[(1)]
Number of Loan Modifications that Qualified as a TDR	**1**	-	-
Total Loan Amount Before Modification	**$ 19,999**	$ -	$ -
Total Loan Amount After Modification	**5,392**	-	-

(1) There were no loan modifications that qualified as TDRs during 2021 or 2020.

Leases Outstanding

A summary of the components of FCL's net investment in direct financing leases and property on operating leases in which we are the lessor is as follows:

($ in Millions)

December 31,	2022	2021	2020
Net Investment in Direct Financing Leases:			
Minimum Lease Payments to be Received, Net of Participation Interests	**$ 2,427**	$ 2,356	$ 2,263
Estimated Residual Values of Leased Property			
Unguaranteed	**1,292**	1,300	1,844
Guaranteed	**171**	376	-
Initial Direct Costs and Other	**14**	20	22
Less: Unearned Finance Income	**(455)**	(545)	(394)
Net Investment in Direct Financing Leases	**$ 3,449**	$ 3,507	$ 3,735
Property on Operating Leases:			
Vehicles and Other Equipment	**$ 601**	$ 627	$ 646
Initial Direct Costs and Other	**2**	2	2
Total	**$ 603**	$ 629	$ 648
Less: Accumulated Depreciation	**(252)**	(262)	(281)
Net Property on Operating Leases	**$ 351**	$ 367	$ 367
Year Ended December 31,	**2022**	**2021**	**2020**
Depreciation Expense	**$ 109**	$ 128	$ 107

At December 31, 2022, gross minimum lease payments to be received for direct financing leases and minimum future rental revenue for noncancelable operating leases in which we are the lessor are as follows:

($ in Millions)

Year	Minimum Lease Payments	Minimum Future Rental Revenue
2023	$ 657	$ 66
2024	527	45
2025	409	25
2026	290	17
2027	176	8
Subsequent Years	368	10

Note 4 – Investment Securities

A summary of the amortized cost and fair value of investment securities available-for-sale is as follows. See Note 11 for disclosures about estimated fair values of financial instruments, including investments.

($ in Millions)

December 31, 2022	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of Deposit	**$ 850**	**$ -**	**$ -**	**$ 850**
U.S. Treasury Debt	**14,779**	**-**	**(727)**	**14,052**
U.S. Agency Debt	**1,733**	**-**	**(106)**	**1,627**
Residential Mortgage-Backed Securities (MBS):				
Ginnie Mae	**1,014**	**-**	**(177)**	**837**
U.S. Agency	**1,417**	**2**	**(100)**	**1,319**
Commercial MBS:				
U.S. Agency	**14,567**	**8**	**(988)**	**13,587**
Corporate Bonds	**534**	**-**	**(33)**	**501**
Asset-Backed and Other	**328**	**-**	**(4)**	**324**
Total	**$ 35,222**	**$ 10**	**$ (2,135)**	**$ 33,097**

($ in Millions)

December 31, 2021	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. Treasury Debt	$ 15,531	$ 218	$ (33)	$ 15,716
U.S. Agency Debt	1,997	81	(1)	2,077
Residential MBS:				
Ginnie Mae	1,205	3	(8)	1,200
U.S. Agency	1,214	15	(9)	1,220
Commercial MBS:				
U.S. Agency	11,237	64	(76)	11,225
Corporate Bonds	361	22	-	383
Asset-Backed and Other	22	-	(1)	21
Total	$ 31,567	$ 403	$ (128)	$ 31,842

($ in Millions)

December 31, 2020	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. Treasury Debt	$ 13,853	$ 509	$ -	$ 14,362
U.S. Agency Debt	2,795	165	-	2,960
Residential MBS:				
Ginnie Mae	862	24	-	886
U.S. Agency	2,333	42	(10)	2,365
Commercial MBS:				
U.S. Agency	11,404	165	(15)	11,554
Corporate Bonds	364	30	-	394
Asset-Backed and Other	304	-	-	304
Total	$ 31,915	$ 935	$ (25)	$ 32,825

A summary of the contractual maturity, amortized cost, fair value and weighted average yield of investment securities by investment category at December 31, 2022 is as follows:

Certificates of Deposit

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 850	$ 850	4.38 %
One to Five Years	-	-	-
Five to Ten Years	-	-	-
After Ten Years	-	-	-
Total	$ 850	$ 850	4.38 %

U.S. Treasury Debt Securities

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 4,243	$ 4,205	2.90 %
One to Five Years	8,024	7,633	2.17
Five to Ten Years	2,512	2,214	1.65
After Ten Years	-	-	-
Total	$ 14,779	$ 14,052	2.29 %

U.S. Agency Debt Securities

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 69	$ 69	3.42 %
One to Five Years	1,170	1,115	2.81
Five to Ten Years	402	367	2.57
After Ten Years	92	76	2.53
Total	$ 1,733	$ 1,627	2.76 %

Ginnie Mae Residential MBS

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ -	$ -	- %
One to Five Years	-	-	-
Five to Ten Years	1	1	3.78
After Ten Years	1,013	836	1.70
Total	$ 1,014	$ 837	1.70 %

U.S. Agency Residential MBS

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ -	$ -	- %
One to Five Years	2	2	4.39
Five to Ten Years	834	770	3.02
After Ten Years	581	547	3.15
Total	$ 1,417	$ 1,319	3.08 %

U.S. Agency Commercial MBS

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 10	$ 10	1.47 %
One to Five Years	2,259	2,126	2.70
Five to Ten Years	11,862	11,031	2.93
After Ten Years	436	420	3.74
Total	$ 14,567	$ 13,587	2.92 %

Corporate Bonds

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 33	$ 33	4.12 %
One to Five Years	241	231	4.00
Five to Ten Years	260	237	4.10
After Ten Years	-	-	-
Total	$ 534	$ 501	4.06 %

Asset-Backed Securities and Other

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 32	$ 32	3.69 %
One to Five Years	285	283	3.44
Five to Ten Years	-	-	-
After Ten Years	11	9	4.53
Total	$ 328	$ 324	3.50 %

While the substantial majority of our residential mortgage-backed securities (MBS) have contractual maturities in excess of 10 years, expected maturities for these securities are shorter than contractual maturities because borrowers have the right to call or prepay obligations with or without penalties.

The following table shows the fair value and gross unrealized losses for investments in a loss position aggregated by investment category, and the length of time the securities have been in a continuous unrealized loss position at December 31, 2022, 2021 and 2020. The continuous loss position is based on the date the impairment first occurred.

($ in Millions)	Less Than 12 Months		Greater Than 12 Months	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
December 31, 2022				
Certificates of Deposit	**$ 750**	**$ -**	**$ -**	**$ -**
U.S. Treasury Debt	**8,669**	**(297)**	**3,882**	**(430)**
U.S. Agency Debt	**1,505**	**(96)**	**122**	**(10)**
Residential MBS:				
Ginnie Mae	**104**	**(2)**	**731**	**(175)**
U.S. Agency	**759**	**(44)**	**351**	**(56)**
Commercial MBS:				
U.S. Agency	**9,090**	**(469)**	**3,295**	**(519)**
Corporate Bonds	**482**	**(31)**	**7**	**(2)**
Asset-Backed and Other	**316**	**(2)**	**5**	**(2)**
Total	**$ 21,675**	**$ (941)**	**$ 8,393**	**$ (1,194)**
December 31, 2021				
U.S. Treasury Debt	$ 3,838	$ (33)	$ -	$ -
U.S. Agency Debt	41	(1)	174	-
Residential MBS:				
Ginnie Mae	992	(8)	-	-
U.S. Agency	186	(3)	77	(6)
Commercial MBS:				
U.S. Agency	2,480	(11)	2,890	(65)
Asset-Backed and Other	5	-	9	(1)
Total	$ 7,542	$ (56)	$ 3,150	$ (72)
December 31, 2020				
U.S. Treasury Debt	$ 1,250	$ -	$ -	$ -
U.S. Agency Debt	22	-	233	-
Residential MBS:				
Ginnie Mae	3	-	19	-
U.S. Agency	110	(1)	256	(9)
Commercial MBS:				
U.S. Agency	2,583	(15)	295	-
Corporate Bonds	-	-	3	-
Asset-Backed and Other	9	-	-	-
Total	$ 3,977	$ (16)	$ 806	$ (9)

As of December 31, 2022, we expect to collect all principal and interest payments on our investment securities. We do not intend to sell the securities in unrealized loss positions, nor is it likely that we will be required to sell such securities, for regulatory, liquidity or other purposes, before an anticipated recovery of our cost basis occurs.

We recorded no other-than-temporary impairment (OTTI) losses for our investment securities in 2022, 2021 and 2020. We had no securities with previously recorded OTTI losses at December 31, 2022, 2021 and 2020.

Sales of Investment Securities

In 2022, we sold a U.S. Treasury debt security for total proceeds of $495.6 million and two corporate bonds for total proceeds of $17.5 million to take advantage of favorable market conditions. We also sold a U.S. agency mortgage-backed security for total proceeds of less than one half million dollars million for administrative reasons. The resulting net gain from the sales totaled $1.4 million.

In 2021, we sold 18 U.S. Treasury debt securities for total proceeds of $3.2 billion, eight U.S. Agency debentures for total proceeds of $617.7 million and one commercial mortgage-backed security for total proceeds of $93.5 million resulting in losses of $36.5 million. We sold these securities to rebalance the investment portfolio to take advantage of market opportunities to sell lower yielding investments and replace them with higher yielding investments and to efficiently manage our tax obligations.

In 2020, we sold eleven U.S. Treasury debt securities for total proceeds of $3.5 billion, which approximated their book value. We sold these securities to manage liquidity.

All gains and losses on sale of investment securities are recorded in noninterest income in our consolidated statements of income.

Note 5 – Bonds and Notes

We are primarily liable for the following bonds and notes:

($ in Millions)

December 31,	2022	2021	2020
Bonds	**$ 153,168**	$ 138,759	$ 131,988
Medium-term Notes	**62**	64	81
Discount Notes	**17,600**	14,188	9,856
Total Systemwide Debt Securities	**170,830**	153,011	141,925
Cash Investment Services Payable	**2,409**	1,588	1,034
RUS Bonds	**825**	350	425
Cash Collateral Payable to Derivative Counterparties	**559**	1	-
Total Bonds and Notes	**$ 174,623**	$ 154,950	$ 143,384

Systemwide Debt Securities

We, along with the other System banks, obtain funds for lending activities and operations primarily from the sale of debt securities issued by System banks through the Funding Corporation. These debt securities are composed of bonds, medium-term notes and discount notes, and are collectively referred to as Systemwide Debt Securities. Pursuant to the Farm Credit Act, Systemwide Debt Securities are the general unsecured joint and several obligations of the System banks. Systemwide Debt Securities are not obligations of, and are not guaranteed by, the U.S. government or any agency or instrumentality thereof, other than the System banks. Bonds and medium-term notes are issued at fixed or floating interest rates. Bonds have original maturities of three months to

30 years, while medium-term notes have original maturities ranging from one to 30 years. Discount notes are issued with maturities ranging from one to 365 days. The weighted average remaining maturity of CoBank's discount notes outstanding at December 31, 2022 was 105 days.

Other Bonds and Notes

Cash investment services payable related to our customers are generally short-term in nature and mature within one year.

Rural Utilities Service (RUS) bonds were $825.0 million, $350.0 million and $425.0 million at December 31, 2022, 2021 and 2020, respectively, and relate to funding pursuant to a bond guarantee program offered by the RUS agency of the United States Department of Agriculture. This funding is provided under a bond purchase agreement with the Federal Financing Bank (FFB) and a bond guarantee agreement with RUS, which provides guarantees to the FFB. The bonds outstanding mature in 10-30 years. As part of the bond guarantee agreement with RUS, we are required to pledge collateral in an amount equal to at least 110% of the principal balance of all bonds outstanding. As of December 31, 2022 we had $250.0 million, $375.0 million and $200.0 million outstanding on the Series D, Series E and Series F funding from RUS, respectively, and each of these facilities was fully drawn.

Maturities and Rates

The aggregate maturities and the weighted average interest rates of CoBank's Systemwide Debt Securities at December 31, 2022 are shown in the following table. Weighted average interest rates include the effect of related interest rate swaps and other derivatives.

($ in Millions)

Maturities and Rates of Systemwide Debt Securities

	Bonds		Medium-term Notes		Discount Notes		Total	
Year of Maturity	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
2023	$ 62,042	3.37 %	$ -	- %	$ 17,600	3.29 %	$ 79,642	3.35 %
2024	42,785	3.34	-	-	-	-	42,785	3.34
2025	10,594	2.13	-	-	-	-	10,594	2.13
2026	6,205	1.97	-	-	-	-	6,205	1.97
2027	6,337	2.70	-	-	-	-	6,337	2.70
2028 and thereafter	25,205	2.62	62	5.75	-	-	25,267	2.62
Total	$ 153,168	3.07	$ 62	5.75	$ 17,600	3.29	$ 170,830	3.09

Certain Systemwide Debt Securities include debt which may be called on the first call date and, subsequently, called daily or on each interest payment date thereafter. At December 31, 2022, callable debt was $31.5 billion, with the range of first call dates being from January 2023 through March 2027.

Conditions for Issuing Systemwide Debt

Certain conditions must be met before we can participate in the issuance of Systemwide Debt Securities. One such condition of participation, required by the Farm Credit Act and FCA regulations, is that we must maintain specified, eligible, unencumbered assets at least equal in value to the total amount of debt obligations outstanding for which we are primarily liable. Such assets exceeded applicable debt by $9.6 billion at December 31, 2022. This requirement does not provide holders of Systemwide Debt Securities with a security interest in any of our assets.

In addition, because System banks are contingently liable for Systemwide Debt Securities of the other System banks, the banks have entered into agreements to provide for mutual protection. The System banks and the Funding Corporation operate under a Third Amended and Restated Market Access Agreement (MAA) designed to address certain Funding Corporation statutory responsibilities. The MAA financial conditions establish mechanisms for monitoring, limiting and ultimately denying a troubled System bank's access to and participation in Systemwide debt issuances, thereby limiting other System banks' exposure to statutory joint and several liabilities. The MAA promotes the identification and resolution of financial problems of individual System banks in a timely manner. As required by the MAA, the System banks and the Funding Corporation undertake a periodic formal review of the MAA to consider whether any amendments are appropriate. A review of the MAA was undertaken in 2020 and no modifications were made. For discussion related to the FCA's capital regulations, see Note 6.

The System banks and the Funding Corporation have also entered into an Amended and Restated Contractual Interbank Performance Agreement (CIPA). The CIPA establishes an agreed-upon standard of financial condition and performance for the System banks and their affiliated Associations (the Districts). The CIPA measures various ratios taking into account the capital, asset quality, earnings, interest rate risk and liquidity of the Districts and System banks. At December 31, 2022, 2021 and 2020, all System banks, including CoBank, were in compliance with all of the conditions of participation for the issuance of Systemwide Debt Securities. Periodically, the ratios in the CIPA model are reviewed to take into consideration current performance standards in the financial services industry. A review was conducted during 2020, however no adjustments to the CIPA model were made.

Insurance Fund

The Farm Credit Act established the Farm Credit System Insurance Corporation (Insurance Corporation) to administer the Farm Credit Insurance Fund (Insurance Fund). The Insurance Corporation insures the timely payment of principal and interest on Systemwide Debt Securities and carries out various other responsibilities.

The primary sources of funds for the Insurance Fund are premiums paid by the System banks and earnings on the Insurance Fund assets. Premiums are determined and assessed to System banks semi-annually by the Insurance Corporation.

Each System bank is required to pay premiums into the Insurance Fund until the assets in the Insurance Fund reach the "secure base amount" (SBA), which is defined in the Farm Credit Act as 2 percent of the aggregate outstanding insured Systemwide Debt Securities (adjusted to reflect the reduced risk on loans or investments guaranteed by the U.S. or state governments) or such other percentage of the aggregate outstanding insured Systemwide Debt Securities as the Insurance Corporation in its sole discretion determines to be actuarially sound. The Insurance Corporation has adopted a Policy Statement addressing the periodic determination of the secure base amount that is currently set at the 2 percent level. The Insurance Corporation may use its discretion to adjust the premium assessments in response to changing conditions. When the amount in the Insurance Fund exceeds the SBA, the Insurance Corporation may return excess amounts, but must still ensure that premiums are sufficient to maintain the level of the Insurance Fund at the SBA. In 2020, the Insurance Corporation returned $12.6 million in excess amounts related to the Insurance Fund to CoBank. No such excess amounts were received from the Insurance Corporation in 2022 and 2021.

The Insurance Corporation premium rates were 20 basis points of average outstanding adjusted insured debt obligations for 2022. Premium rates were 16 basis points of average outstanding adjusted insured debt obligations for 2021, 11 basis points for the second half of 2020 and 8 basis points for the first half of 2020. Premium rates also include 10 basis points assessed to nonaccrual loans and other-than-temporarily impaired investments for all three years.

The Insurance Fund is available to assist with the timely payment of principal and interest on Systemwide Debt Securities, in the event of a default by a System bank, to the extent that net assets are available in the Insurance Fund. No other liabilities reflected in our financial statements are insured by the Insurance Corporation.

In addition, the Insurance Fund could be used to ensure the retirement of System entities' protected borrower equity at par or stated value and for other specified purposes. The Insurance Fund is also available for discretionary uses of providing assistance to certain troubled System institutions and to cover the operating expenses of the Insurance Corporation. The Insurance Fund does not insure the obligations of Farmer Mac.

At December 31, 2022, the assets of the Insurance Fund aggregated $6.7 billion. However, due to the other authorized uses of the Insurance Fund, there is no assurance that any available amount in the Insurance Fund will be sufficient to fund the timely payment of principal or interest on Systemwide Debt Securities in the event of a default by any System bank having primary liability thereon.

The Insurance Corporation has an agreement with the Federal Financing Bank, a federal instrumentality subject to the supervision and direction of the U.S. Treasury, pursuant to which the Federal Financing Bank would advance funds to the Insurance Corporation. Under its existing statutory authority, the Insurance Corporation may use these funds to provide assistance to the System banks in exigent market circumstances that threaten the banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10 billion and terminates on September 30, 2023 unless otherwise extended. The decision whether to seek funds from the Federal Financing Bank is at the discretion of the Insurance Corporation, and each funding obligation of the Federal Financing Bank is subject to various terms and conditions and, as a result, there can be no assurance that funding would be available if needed by the System.

Early Extinguishment of Debt

Gains on early extinguishments of Systemwide Debt Securities and Rural Utilities Service (RUS) bonds were $1.1 million in 2022 compared to losses of $126.1 million and $78.7 million in 2021 and 2020, respectively. During 2022, we extinguished $3.989 billion of Systemwide Debt Securities compared to $1.001 billion and $1.261 billion in 2021 and 2020, respectively. We extinguished $259.7 million of RUS bonds during 2021 compared to none in 2022 and 2020. There were no sales of Systemwide Debt Securities to other Farm Credit Banks during 2022, 2021 and 2020. All losses on early extinguishment of debt are reported as a component of noninterest income.

Debt Exchange

On October 28, 2020, the Funding Corporation, on our behalf, completed a debt exchange of approximately $1.4 billion, or 83 percent, of our LIBOR-indexed floating rate debt maturing beyond December 31, 2021 to insert Alternative Reference Rates Committee (ARRC) reference rate contractual fallback language when LIBOR is discontinued or no longer remains a representative rate index. No other contractual terms were modified in the debt exchange that would impact the amount or timing of cash flows of these LIBOR-indexed floating rate debt instruments. We applied the ASU 848 optional accounting relief, described in Note 2, to this transaction which resulted in a continuation of the existing debt accounting, no changes to the amortized cost basis of the exchanged debt and no gain or loss recorded in the accompanying consolidated statement of income in 2020.

Note 6 – Shareholders' Equity

Description of Equities

As of December 31, 2022, we had $1.6 billion of preferred stock and $4.0 billion of common stock outstanding, as summarized in the table below.

Preferred and Common Stock

	Stock		
	Preferred	Class A	Class A
Shares Authorized (000)	n/a [1]	Unlimited	Unlimited
Shares Outstanding (000)	4,333	2,053	37,944
Voting or Nonvoting	Nonvoting	Nonvoting	Voting
Par / Face Value (per share)	n/a [1]	$ 100	$ 100

[1] Shares authorized and par/face value varies by issuance. Refer to the table on the following page.

Pursuant to our bylaws, we have a single class of common equity – Class A common stock; however, only Class A shareholders that are directly eligible to borrow from CoBank, that borrow on a patronage basis and that are active borrowers, have voting rights. No other class of shareholders has voting rights.

The changes in the number of shares of common stock outstanding during 2022, 2021 and 2020 are summarized in the following table.

Shares of Common Stock (in Thousands)

	2022	2021	2020
Beginning of the Year	**40,127**	39,177	36,216
Issuances	**1,437**	1,279	3,355
Retirements	**(1,567)**	(329)	(394)
End of the Year	**39,997**	40,127	39,177

As approved by our shareholders, CoBank may have up to $2.5 billion of preferred stock outstanding at any time and is authorized to issue preferred stock up to this limit through December 31, 2026. This allows us to access third-party capital more quickly and efficiently in response to dynamic market conditions, without the necessity of obtaining shareholder approval for each issuance. However, any preferred stock issuances still require approval from the Board of Directors and the FCA.

Holders of common equities may not pledge, hypothecate or otherwise grant a security interest in such equities except as consented to by the Bank under FCA regulations. We have a statutory first lien on CoBank common stock. We pay dividends only on preferred stock.

In case of liquidation or dissolution, preferred stock, common stock and unallocated retained earnings (URE) would be distributed to shareholders, after the payment of all liabilities pursuant to FCA regulations, in the following order: (1) retirement of all Series E, Series H, Series I, Series J and Series K preferred stock at par plus all accrued but unpaid dividends for the then current dividend period; (2) retirement of all common stock at par; (3) retirement of all patronage surplus (a component of URE) in amounts equal to the face amount of the applicable nonqualified written notices of allocation or such other notice; and (4) remaining URE and reserves to the holders of common stock in proportion to patronage to the extent possible.

In June 2022, CoBank stockholders approved board-recommended amendments to the Bank's capitalization bylaws lowering target equity ranges for customer-owners. Under the approved amendments, the target equity range for cooperatives and other patronage-eligible commercial borrowers decreased to 4-10 percent, from the previous range of 7-13 percent. For direct loans with Farm Credit System institutions, the target equity range decreased to 2-5 percent from the previous range of 4-6 percent. The target equity levels for customer-owners are set within the ranges established in the bylaws and are included in the capital plans approved by the Board of Directors.

In August 2022, the Bank's Board of Directors amended the capital plans for customer-owners to decrease the target equity levels. The target equity level for cooperatives and other patronage-eligible commercial borrowers was decreased from 8 percent to 7 percent. For direct loans with affiliated Associations, the target equity level was decreased from 4 percent to 3 percent and the loan base period was changed from a five-year trailing average to a one-year average. For non-affiliated Farm Credit System institutions, the target equity level was decreased from 4 percent to 3.25 percent. The new target equity levels were effective starting in 2022. In December 2022, the Board of Directors approved stock retirements reflecting the impact of these lower target equity levels as well as normal retirements. These stock retirements totaling approximately $192.0 million will be made in March 2023.

Management and the Board of Directors continuously evaluate the Bank's capital plans based on financial performance, capital requirements, asset growth, emerging risks and other items. Any future changes to patronage and capital distributions would be subject to FCA regulations and Board approval.

Preferred Stock

The following table summarizes our outstanding preferred stock as of December 31, 2022.

Preferred Stock as of December 31, 2022

	Series E	Series H	Series I	Series J	Series K
Type	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual
Issue Date	January 2012	November 2014	April 2016	December 2021	August 2022
Shares Outstanding (000)	133	3,000	375	425	400
Amount Outstanding (000)	$132,645	$300,000	$375,000	$425,000	$400,000
Par Value (per share)	$1,000	$100	$1,000	$1,000	$1,000
Current Dividend Rate (%)	3-month USD LIBOR + 1.18 (5.00571% at December 31, 2022)	6.20%	6.25%	4.25%	6.45%
Next Change in Dividend Rate (% and dates)	n/a	3-month USD LIBOR + 3.744% beginning on January 1, 2025	3-month USD LIBOR + 4.66% beginning on October 1, 2026	5-year Treasury Rate + 3.049% beginning on January 1, 2027	5-year Treasury Rate + 3.487% beginning on October 1, 2027
Dividend Frequency	Quarterly	Quarterly	Semi-Annual; Quarterly beginning on October 1, 2026	Quarterly	Quarterly
Optional Redemption Begins (Date)[1]	July 2012 and each five year anniversary thereafter at par plus accrued dividends	Quarterly calls on or after January 1, 2025 at par plus accrued dividends	Quarterly calls on or after October 1, 2026 at par plus accrued dividends	Quarterly calls on or after January 1, 2027 at par plus accrued dividends	Quarterly calls on or after October 1, 2027 at par plus accrued dividends

[1] Our preferred stock may also be redeemed at any time after the occurrence of a Regulatory Event (as defined in the terms of the preferred stock) at par plus accrued interest.

On December 2, 2021, we issued $425.0 million of Series J non-cumulative perpetual preferred stock. We used the net proceeds from the Series J preferred stock issuance to increase our regulatory capital pursuant to FCA regulations and for general corporate purposes, including the redemption of our Series G non-cumulative perpetual preferred stock on January 1, 2022. Dividends on the Series J preferred stock, if declared by the Board of Directors in its sole discretion, are non-cumulative and are payable quarterly in arrears beginning on April 1, 2022 and will accrue at a fixed annual rate of 4.25 percent from the date of issuance up to, but excluding January 1, 2027. Thereafter, dividends will accrue at an annual rate equal to the five-year U.S. Treasury rate as of the most recent reset dividend determination date plus a spread of 3.049 percent per annum and will be paid quarterly. The preferred stock is redeemable at par value, in whole or in part, at the Bank's option quarterly beginning on or after January 1, 2027.

On January 1, 2022, we redeemed all of our outstanding Series G non-cumulative perpetual preferred stock totaling $200.0 million. The dividend rate for our Series G preferred stock was 6.125 percent through the date of redemption.

On August 16, 2022, we issued $400.0 million of Series K non-cumulative perpetual preferred stock. We used the net proceeds from the Series K preferred stock issuance to increase our regulatory capital pursuant to FCA regulations and for general corporate purposes, including the redemption of our Series F non-cumulative perpetual preferred stock as described below. Dividends on the Series K preferred stock, if declared by the Board of Directors in its sole discretion, are non-cumulative and are payable quarterly in arrears beginning on January 1, 2023, and will accrue at a fixed annual rate of 6.45 percent from the date of issuance up to, but excluding October 1, 2027. Thereafter, dividends will accrue at an annual rate equal to the five-year U.S. Treasury rate as of the most recent reset dividend determination date plus a spread of 3.487 percent per annum and will be paid quarterly. The preferred stock is redeemable at par value, in whole or in part, at the Bank's option quarterly beginning on or after October 1, 2027.

On October 1, 2022, we redeemed all of our outstanding Series F non-cumulative perpetual preferred stock totaling $400.0 million. The dividend rate for our Series F preferred stock was 6.25 percent through the date of redemption.

During 2022 and 2021, we retired $69.9 million and $22.5 million, respectively, of our outstanding Series E non-cumulative perpetual preferred stock in a series of open market purchase transactions. The Series E preferred stock was purchased at a discount from par value resulting in a modest gain on retirement recorded in unallocated retained earnings.

All of our outstanding preferred stock ranks equally, both as to dividends and upon liquidation, and senior to all of our outstanding common stock.

If preferred stock dividends are not paid for 18 consecutive months on any of our preferred stock, holders of all outstanding preferred stock, voting as a single class, will have the right to appoint two non-voting observers to attend our Board of Directors meetings until full dividends for a one-year period are paid. In addition, other than pursuant to an order issued by our regulator, we may not enter into agreements restricting our ability to declare or pay preferred stock dividends.

Payments of preferred stock dividends and stock retirements, including preferred stock redemptions, require the approval of our Board of Directors and are subject to FCA regulations.

Capitalization Requirements

In accordance with the Farm Credit Act, eligible commercial borrowers are required to purchase common stock in CoBank as a condition of borrowing. The minimum initial borrower investment is equal to the lesser of one thousand dollars or 2 percent of the amount of the loan. The minimum initial investment is generally received in cash at the time the borrower receives the loan proceeds.

Association customers are also required to invest in our common stock, as discussed beginning on page 130. Additionally, eligible financial service members who are not otherwise shareholders have a one hundred dollar capitalization requirement and do not participate in patronage distributions.

Most agricultural export finance customers, customers of FCL and certain other borrowers are not required to purchase, nor do they own, common stock in CoBank for these financing transactions. Therefore, they do not participate in patronage distributions.

Retirements of common stock, if any, are determined annually after the Board of Directors sets the target equity level. Net cash retirements are made at the sole discretion of the Board of Directors and are at book value not to exceed par or face value.

Patronage

As a cooperative bank, we return a portion of our earnings to eligible common shareholders in the form of patronage distributions. Accrued patronage for eligible common shareholders totaled $995.6 million for 2022 and is payable in March 2023, of which $856.7 million will be paid in cash (including $148.8 million of special cash patronage) and $138.8 million will be paid in common stock. For 2021, total patronage was $870.7 million, of which $742.9 million was paid in cash (including $111.5 million of special cash patronage) and $127.8 million was paid in common stock. In February 2022, the special cash distribution for 2021 was increased by $13.9 million from the previously announced amount and this amount was also paid in March 2022. For 2020, total patronage was $728.4 million, of which $596.5 million was paid in cash (including $106.6 million of special cash patronage) and $131.9 million was paid in common stock in March 2021. All patronage distributions require the approval of our Board of Directors.

Regulatory Capitalization Requirements and Restrictions

The FCA's capital adequacy regulations require us to maintain certain minimum capital requirements and collateral standards.

We are prohibited from retiring stock or making certain other distributions to shareholders unless prescribed capital standards are met. All such minimum regulatory capital requirements and collateral standards were met as of December 31, 2022.

At December 31, 2022, 2021 and 2020, our capital and leverage ratios exceeded regulatory minimums as noted in the following table.

Regulatory Capital Ratios

	Regulatory Minimum	December 31, 2022	2021	2020
Common Equity Tier 1 Capital Ratio	4.5 %	**11.62 %**	12.74 %	12.33 %
Tier 1 Capital Ratio	6.0	**13.39**	14.70	14.25
Total Capital Ratio	8.0	**14.25**	15.63	15.22
Tier 1 Leverage Ratio[1]	4.0	**6.80**	7.47	7.30
Permanent Capital Ratio	7.0	**13.51**	14.81	14.36
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio	1.5	**3.13**	3.36	3.23

[1] At least 1.5 percent must be URE and URE equivalents.

See pages 137 through 146 for more information on the required regulatory capital disclosures, including the components of the regulatory capital ratios above.

Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income (loss) for 2022, 2021 and 2020 are presented in the following table.

Changes in Accumulated Other Comprehensive Income (Loss) by Component[1]

	Unrealized Gains (Losses) on Non-OTTI Investment Securities	Unrealized Gains (Losses) on Interest Rate Swaps and Other Derivatives	Net Pension Adjustment	Total
Balance at January 1, 2022	**$ 232,314**	**$ (35,702)**	**$ (41,204)**	**$ 155,408**
Other Comprehensive Income (Loss) Before Reclassifications	**(2,159,151)**	**88,299**	**(25,875)**	**(2,096,727)**
Amounts Reclassified from Accumulated Other Comprehensive (Loss) Income	**(1,097)**	**11,225**	**4,516**	**14,644**
Net Current-Period Other Comprehensive (Loss) Income	**(2,160,248)**	**99,524**	**(21,359)**	**(2,082,083)**
Balance at December 31, 2022	**$ (1,927,934)**	**$ 63,822**	**$ (62,563)**	**$ (1,926,675)**
Balance at January 1, 2021	$ 799,538	$ (43,353)	$ (68,243)	$ 687,942
Other Comprehensive Income (Loss) Before Reclassifications	(594,672)	(4,687)	19,017	(580,342)
Amounts Reclassified from Accumulated Other Comprehensive (Loss) Income	27,448	12,338	8,022	47,808
Net Current-Period Other Comprehensive (Loss) Income	(567,224)	7,651	27,039	(532,534)
Balance at December 31, 2021	$ 232,314	$ (35,702)	$ (41,204)	$ 155,408
Balance at January 1, 2020	$ 232,886	$ (63,443)	$ (75,018)	$ 94,425
Other Comprehensive Income (Loss) Before Reclassifications	566,667	2,063	(215)	568,515
Amounts Reclassified from Accumulated Other Comprehensive (Loss) Income	(15)	18,027	6,990	25,002
Net Current-Period Other Comprehensive Income	566,652	20,090	6,775	593,517
Balance at December 31, 2020	$ 799,538	$ (43,353)	$ (68,243)	$ 687,942

(1) Amounts are presented net of tax. Amounts reclassified shown in parentheses indicate a decrease in accumulated other comprehensive income or an increase in accumulated other comprehensive loss.

The following table presents the effect of reclassifications from accumulated other comprehensive income (loss) to net income for the years ended December 31, 2022, 2021 and 2020.

Reclassifications from Accumulated Other Comprehensive Income (Loss) to Net Income

Year Ended December 31, 2022		Amount Reclassified from Accumulated Other Comprehensive Income (Loss)	Location of Gain (Loss) Recognized in Income Statement
Unrealized Gains (Losses) on Non-OTTI Investment Securities:			
Sales Gains and Losses	**$**	**1,449**	Noninterest Income - Other, Net
Tax Effect		**(352)**	Provision for Income Taxes
Unrealized Gains (Losses) on Interest Rate Swaps and Other Derivatives:			
Interest Rate Contracts		**(10,039)**	Interest Expense
Foreign Exchange Contracts		**(1,745)**	Interest Income
Tax Effect		**559**	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		**(5,369)**	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		**(597)**	Operating Expenses - Employee Compensation
Tax Effect		**1,450**	Provision for Income Taxes
Total Reclassifications	**$**	**(14,644)**	
Year Ended December 31, 2021			
Unrealized Gains (Losses) on Non-OTTI Investment Securities:			
Sales Gains and Losses	$	(36,531)	Noninterest Income - Other, Net
Tax Effect		9,083	Provision for Income Taxes
Unrealized Gains (Losses) on Interest Rate Swaps and Other Derivatives:			
Interest Rate Contracts		(13,852)	Interest Expense
Foreign Exchange Contracts		1,720	Interest Income
Tax Effect		(206)	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		(9,623)	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		(974)	Operating Expenses - Employee Compensation
Tax Effect		2,575	Provision for Income Taxes
Total Reclassifications	$	(47,808)	
Year Ended December 31, 2020			
Unrealized Gains (Losses) on Non-OTTI Investment Securities:			
Sales Gains and Losses	$	20	Noninterest Income - Other, Net
Tax Effect		(5)	Provision for Income Taxes
Unrealized Gains (Losses) on Interest Rate Swaps and Other Derivatives:			
Interest Rate Contracts		(15,191)	Interest Expense
Termination of Interest Rate Contracts		(3,411)	Noninterest Expense - Other, Net
Foreign Exchange Contracts		531	Interest Income
Tax Effect		44	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		(8,254)	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		(1,008)	Operating Expenses - Employee Compensation
Tax Effect		2,272	Provision for Income Taxes
Total Reclassifications	$	(25,002)	

Note 7 – Employee Benefit Plans and Incentive Compensation Plans

Employee Benefit Plans

We have employer-funded, qualified defined benefit pension plans, which are noncontributory and cover employees hired prior to January 1, 2007. Depending on the date of hire, benefits are determined either by a formula based on years of service and final average pay, or by the accumulation of a cash balance with interest credits and contribution credits based on years of service and eligible compensation. Effective January 1, 2007, the Bank closed the remaining qualified defined benefit pension plan to new participants.

We also have noncontributory, unfunded nonqualified supplemental executive retirement plans (SERPs) covering certain senior officers and specified other senior managers. In addition, we have a noncontributory, unfunded nonqualified executive retirement plan (ERP) covering certain former senior officers. The defined benefit pension plans, SERPs and ERP are collectively referred to as Retirement Plans. We hold assets in trust accounts related to our SERPs and ERP; however, such funds remain Bank assets and would be subject to general creditors in a bankruptcy or liquidation and are not included as plan assets in the accompanying disclosures.

We have a 401(k) savings plan pursuant to which we match a certain percentage of employees' elective contributions. In addition, under this plan, employees hired on or after January 1, 2007 receive additional, non-elective employer defined contributions. Our contributions to the 401(k) savings plan, which are recorded as employee compensation expense, were $12.9 million, $13.5 million and $12.9 million for 2022, 2021 and 2020, respectively. For eligible senior managers, including our senior officers, we also have a nonqualified deferred compensation plan, which includes benefits not provided under the employee savings plan due to certain Internal Revenue Code limitations.

Eligible retirees also have other postretirement benefits (OPEB), which primarily include access to health care benefits. Most participants pay the full premiums associated with these postretirement health care benefits. Premiums are adjusted annually.

The following table provides a summary of the changes in the plans' benefit obligations and fair values of assets over the three years ended December 31, 2022, 2021 and 2020, as well as a statement of funded status as of December 31 of each year. Changes in the plans' benefit obligation for 2022 primarily resulted from actuarial gains largely driven by discount rate increases.

	Retirement Plans			Other Postretirement Benefits		
	2022	**2021**	**2020**	**2022**	**2021**	**2020**
Change in Benefit Obligation:						
Benefit Obligation at Beginning of Year	**$ 422,205**	$ 439,025	$ 407,294	**$ 1,974**	$ 1,973	$ 2,077
Service Cost	**4,785**	5,405	5,359	**38**	35	35
Interest Cost on Benefit Obligation	**12,080**	11,073	13,043	**55**	49	65
Plan Participant Contributions	**-**	-	-	**365**	380	380
Actuarial (Gain) Loss	**(77,033)**	(11,626)	34,411	**(97)**	246	(73)
Benefits Paid	**(24,518)**	(21,672)	(21,082)	**(896)**	(709)	(511)
Benefit Obligation at End of Year	**337,519**	422,205	439,025	**1,439**	1,974	1,973
Change in Plan Assets:						
Fair Value of Plan Assets at Beginning of Year	**404,543**	387,281	349,725	**-**	-	-
Actual Return on Plan Assets	**(90,339)**	33,553	52,824	**-**	-	-
Employer Contributions	**5,361**	5,381	5,814	**531**	329	131
Benefits Paid	**(24,518)**	(21,672)	(21,082)	**(896)**	(709)	(511)
Plan Participant Contributions	**-**	-	-	**365**	380	380
Fair Value of Plan Assets at End of Year	**295,047**	404,543	387,281	**-**	-	-
Funded (Unfunded) Status – Fair Value of Plan Assets Less Than Benefit Obligation	**(42,472)**	(17,662)	(51,744)	**(1,439)**	(1,974)	(1,973)
Net Amount Recognized - December 31	**$ (42,472)**	$ (17,662)	$ (51,744)	**$ (1,439)**	$ (1,974)	$ (1,973)

The projected benefit obligation and the accumulated benefit obligation for the Retirement Plans as of December 31 of each year are as follows:

	2022	2021	2020
Projected Benefit Obligation:			
Funded Qualified Plans	**$ 296,697**	$ 372,292	$ 385,198
SERP/ERP	**40,822**	49,913	53,827
Total	**$ 337,519**	$ 422,205	$ 439,025
Accumulated Benefit Obligation:			
Funded Qualified Plans	**$ 289,143**	$ 360,857	$ 370,691
SERP/ERP	**37,932**	47,151	48,129
Total	**$ 327,075**	$ 408,008	$ 418,820

The $295.0 million in fair value of plan assets shown in the table on page 108 relates only to the qualified retirement plans. As depicted in the preceding table, such plans had a projected benefit obligation and an accumulated benefit obligation of $296.7 million and $289.1 million, respectively, as of December 31, 2022.

We hold assets in trust accounts related to our SERPs and ERP. Such assets had a fair value of $43.1 million as of December 31, 2022, which is included in other assets in our consolidated balance sheets and accordingly, they are not included as part of the assets in the table on page 111. As depicted in the preceding table, our SERPs and ERP had a projected benefit obligation and an accumulated benefit obligation of $40.8 million and $37.9 million, respectively, as of December 31, 2022.

The following table provides the amounts recognized in our consolidated balance sheets as of December 31 of each year.

	Retirement Plans			Other Postretirement Benefits		
	2022	2021	2020	2022	2021	2020
Accrued Benefit Liabilities	**$ (42,472)**	$ (17,662)	$ (51,744)	**$ (1,439)**	$ (1,974)	$ (1,973)
Net Amounts Recognized	**$ (42,472)**	$ (17,662)	$ (51,744)	**$ (1,439)**	$ (1,974)	$ (1,973)

The following table presents the components of net periodic benefit cost for the plans.

	Retirement Plans			Other Postretirement Benefits		
	2022	2021	2020	2022	2021	2020
Service Cost	**$ 4,785**	$ 5,405	$ 5,359	**$ 38**	$ 34	$ 35
Interest Cost on Benefit Obligation	**12,080**	11,073	13,043	**55**	49	65
Expected Return on Plan Assets	**(20,973)**	(19,810)	(19,185)	**-**	-	-
Amortization of Prior Service Cost	**597**	974	1,008	**-**	-	-
Recognized Actuarial Loss (Gain)	**5,601**	9,890	8,530	**(230)**	(267)	(276)
Net Periodic Benefit Cost	**$ 2,090**	$ 7,532	$ 8,755	**$ (137)**	$ (184)	$ (176)

We anticipate that our total pension expense for the Retirement Plans will be approximately $1.5 million in 2023, as compared to $1.9 million in 2022.

The following table displays the amounts included in accumulated other comprehensive income (loss), a component of shareholders' equity, related to our pension and other postretirement benefit plans.

Amounts Included in Accumulated Other Comprehensive Loss (Income) Pre-Tax at December 31, 2022	Qualified Retirement Plans	Nonqualified Retirement Plans	Other Postretirement Benefits	Total
Net Actuarial Loss (Gain)	$ 77,516	$ 5,478	$ (2,407)	$ 80,587
Prior Service Cost	1,860	198	-	2,058
Amount Recognized in Accumulated Other Comprehensive Loss (Income)	$ 79,376	$ 5,676	$ (2,407)	$ 82,645

Assumptions

We measure plan obligations and annual expense using assumptions designed to reflect future economic conditions. As pension benefits will be paid to current and future retiree for many years, the computations of pension expenses and benefits are based on assumptions about discount rates, estimates of annual increases in compensation levels, mortality rates and expected rates of return on plan assets.

The weighted average rate assumptions used in the measurement of our benefit obligations are as follows:

	2022	2021	2020
Discount Rate	**5.20 %**	2.94 %	2.59 %
Rate of Compensation Increase	**3.54**	3.40	3.40

The weighted average rate assumptions used in the measurement of our net periodic benefit cost are as follows:

	2022	2021	2020
Discount Rate	**2.94 %**	2.59 %	3.29 %
Expected Rate of Return on Plan Assets (Qualified Plans Only)	**5.83**	5.83	5.81
Rate of Compensation Increase	**3.40**	3.40	3.60

The discount rates are calculated using a spot yield curve method developed by an independent actuary. The approach maps a high-quality bond yield curve to the duration of the plans' liabilities, thus approximating each cash flow of the liability stream to be discounted at an interest rate specifically applicable to its respective period in time.

We establish the expected rate of return on plan assets based on current target asset allocations and the anticipated future long-term returns for those asset classes. The expected rate of return on plan assets assumption is also consistent with the pension plans' long-term interest rate assumption used for funding purposes.

Assumed health care cost trend rates have an effect on the amounts reported for other postretirement benefits. For measurement purposes, a 6.8 percent annual rate of increase in the per capita cost of covered health care benefits was assumed for 2022. The rate was assumed to decrease gradually to 4.5 percent through 2029 and remain at that level thereafter.

Plan Assets

The asset allocation target ranges for the pension plans follow the investment policy adopted by our Retirement Trust Committee. This policy provides for a certain level of committee flexibility in selecting target allocation percentages. The actual asset allocations at December 31, 2022, 2021 and 2020 are shown in the following table, along with the adopted range for target allocation percentages by asset class as of December 31, 2022. The actual allocation percentages reflect the market values at year-end and may vary during the course of the year. Plan assets are generally rebalanced to a level within the target range at least annually at the direction of the Committee.

Retirement Plan Assets

	Target Allocation Range[1]	Percentage of Plan Assets at December 31,		
		2022	2021	2020
Asset Category				
Domestic Equity	27-31 %	**28 %**	30 %	30 %
Domestic Fixed Income	46-50	**48**	47	42
International Equity, Emerging Markets Equity and Fixed Income	20-24	**23**	22	23
Global Egiuty	0-3	**1**	1	-
Hedge Funds	-	**-**	-	5
Total	100 %	**100 %**	100 %	100 %

[1] Future asset allocation changes for the CoBank, ACB Retirement Plan are expected to occur in accordance with the liability-driven investment strategy adopted by the Retirement Trust Committee as the Plan's funded status improves.

The assets of the pension plans consist primarily of investments in various domestic equity, international equity and bond funds. These funds do not contain any significant investments in a single entity, industry, country or commodity, thereby mitigating concentration risk. No CoBank stock or debt is included in these investments.

The following table presents major categories of plan assets that are measured at fair value at December 31, 2022 for each of the fair value hierarchy levels as defined in Note 11.

Fair Value Measurements

December 31, 2022

	Level 1	Level 2	Level 3	NAV (1)	Total
Asset Category					
Cash	$ 386	$ -	$ -	$ -	$ 386
Domestic Equity:					
Large-cap Growth Funds(2)	36,243	-	-	35,651	71,894
Small-cap Growth Funds(2)	-	-	-	10,550	10,550
International Equity:					
International Funds(3)	35,690	-	-	11,765	47,455
Global Equity(4)	2,372	-	-	-	2,372
Domestic Fixed Income:					
Bond Funds(5)	-	17,620	-	124,379	141,999
Emerging Markets:					
Equity and Fixed Income Funds(6)	20,391	-	-	-	20,391
Total	$ 95,082	$ 17,620	$ -	$182,345	$ 295,047

(1) Certain investments that are measured at fair value using the net asset value (NAV) per share as a practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this column are intended to permit reconciliation of the fair value hierarchy to the net assets in the pension plans.

(2) Funds invest primarily in diversified portfolios of common stocks of U.S. companies.

(3) Funds invest primarily in a diversified portfolio of equities of non-U.S. companies.

(4) Funds invest primarily in a diversified portfolio of equities of both U.S. and non-U.S. companies.

(5) Funds invest primarily in U.S. Treasury debt securities and corporate bonds of U.S. companies.

(6) Funds invest in equities and corporate debt securities of companies located in emerging international markets.

Level 1 plan assets are funds with quoted daily net asset values that are directly observable by market participants. The fair value of these funds is the net asset value at close of business on the reporting date. Level 2 plan assets are funds with quoted net asset values that are not directly observable by market participants. A significant portion of the underlying investments in these funds have individually observable market prices, which are utilized by the plan's trustee to determine a net asset value at close of business on the reporting date. Level 3 plan assets are funds with unobservable net asset values and supported by limited or no market activity. There were no purchases or sales of Level 3 plan assets in the current year and no transfers into or out of Level 3 assets occurred in the current year.

Investment strategy and objectives are described in the pension plans' formal investment policy document. The basic strategy and objectives are to manage portfolio assets with a long-term time horizon appropriate for the participant demographics and cash flow requirements; to optimize long-term funding requirements by generating rates of return sufficient to fund liabilities and exceed the long-term rate of inflation while reducing overall funded status volatility; and to provide competitive investment returns as measured against appropriate benchmarks.

Expected Contributions

We expect to contribute approximately $2.7 million to our funded, qualified defined benefit pension plans in 2022 and $0.2 million, net of collected retiree premiums, to our other postretirement benefit plans in 2022. We also expect to contribute approximately $2.7 million to our trust accounts related to our SERPs and ERP in 2022. Our actual 2022 contributions could differ from the estimates noted above.

Estimated Future Benefit Payments

We expect to make the following benefit payments, which reflect expected future service, as appropriate.

Estimated Benefit Payments

Year:	Retirement Benefits	Other Postretirement Benefits
2023	$ 24,814	$ 164
2024	26,336	158
2025	26,140	149
2026	25,930	136
2027	25,978	138
2028 to 2032	131,961	599

Incentive Compensation Plans

We have a broad-based, Board-approved short-term incentive compensation plan covering substantially all employees pursuant to which annual cash awards may be earned. Criteria used to determine amounts payable include the achievement of specified financial measures and strategic business objectives, which are approved annually by the Compensation and Human Resources Committee of the Board of Directors. Individual performance is also considered in the determination of the amounts payable.

We also have a Board-approved long-term incentive compensation plan, pursuant to which cash awards may be earned by senior officers and specified other key employees who have a significant impact on long-term financial performance. Criteria used to determine amounts payable include achievement of certain Bank financial targets and strategic business objectives over a three-year performance period. Cash awards are to be paid subsequent to completion of each three-year period, subject to approval by the Compensation and Human Resources Committee of the Board of Directors.

Under the terms of the short-term incentive compensation plan, a minimum return on active patron stock investment must be achieved in order for a payout to be approved. Under the long-term incentive compensation plan, a minimum return on active patron stock investment and a minimum capital threshold must be achieved in each year within the three-year performance period for a full payout to be made. The required minimum return on active patron stock investment was 11.0 percent for all performance periods disclosed herein. The required minimum capital threshold was a minimum total regulatory capital ratio of 11.5 percent for all performance periods disclosed herein.

Note 8 – Income Taxes

The components of the provision (benefit) for income taxes are as follows:

Year Ended December 31,	2022	2021	2020
Current:			
Federal	**$ 62,632**	$ 55,040	$ (18,793)
State	**20,408**	9,203	7,789
Total Current	**83,040**	64,243	(11,004)
Deferred:			
Federal	**27,868**	28,387	134,925
State	**(464)**	9,446	5,927
Total Deferred	**27,404**	37,833	140,852
Total	**$ 110,444**	$ 102,076	$ 129,848
Comprehensive Tax Provision (Benefit)			
Allocable to:			
Pre-Tax Income	**$ 110,444**	$ 102,076	$ 129,848
Comprehensive Tax Provision			
(Benefit) Generated by:			
Investment Securities	**(246,861)**	(67,601)	78,946
Derivatives	**(2,539)**	101	730
Pension Liability	**(6,856)**	8,680	1,790
Total	**$ (145,812)**	$ 43,256	$ 211,314

The components of deferred tax assets and liabilities are shown below.

December 31,	2022	2021	2020
Allowance for Credit Losses	**$ 163,331**	$ 148,278	$ 141,856
Employee Benefits	**49,757**	40,497	46,939
Unrealized Net Losses			
on Investment Securities			
and Derivatives	**207,053**	-	-
Loan Origination Fees	**16,075**	12,365	13,219
Other Deferred Tax Assets	**70,216**	64,050	57,521
Gross Deferred Tax Assets	**506,432**	265,190	259,535
Leasing	**837,010**	788,117	741,411
Unrealized Net Gains			
on Investment Securities			
and Derivatives	**-**	42,347	109,847
Other Deferred Tax Liabilities	**37,275**	31,431	25,969
Gross Deferred Tax Liabilities	**874,285**	861,895	877,227
Net Deferred Tax Liabilities	**$ (367,853)**	$ (596,705)	$ (617,692)

Deferred income taxes are provided for the change in temporary differences between the basis of certain assets and liabilities for financial reporting and income tax reporting purposes except for our nontaxable entity. The expected future tax rates are based upon enacted tax laws.

We have concluded that it is more likely than not that the deferred tax assets will be realized based on our history of earnings and our ability to implement tax planning strategies.

The effective tax rates were less than the statutory income tax rate primarily due to $995.6 million, $870.7 million, and $728.4 million of accrued patronage distributions for the years ended December 31, 2022, 2021, and 2020, respectively, which are tax deductible, if made by our taxable entity, as permitted by Subchapter T of the Internal Revenue Code. The nontaxable activities conducted in the FCB subsidiary also contributed to a lower effective tax rate.

Year Ended December 31,	2022	2021	2020
Federal Tax at Statutory Rate	**$ 327,405**	$ 297,409	$ 292,498
State Tax, Net	**15,755**	14,733	10,836
Patronage Distributions			
Allocated by:			
Taxable Entity	**(87,230)**	(76,234)	(64,304)
Nontaxable Entity	**(90,348)**	(83,177)	(66,210)
Special Patronage Distributions			
Allocated by:			
Taxable Entity	**(14,790)**	(10,100)	(10,185)
Nontaxable Entity	**(16,463)**	(13,307)	(12,201)
Effect of Nontaxable Entity	**(15,238)**	(24,848)	(11,738)
Tax-Exempt Activities	**(634)**	(534)	(338)
Federal and State Tax Credits	**(6,404)**	(5,112)	(5,670)
Other	**(1,609)**	3,246	(2,840)
Provision for Income Taxes	**$ 110,444**	$ 102,076	$ 129,848

A reconciliation of the beginning and ending amount of unrecognized tax benefits, excluding interest and penalties, is as follows:

Year Ended December 31, 2022	
Balance at Beginning of Year	**$ 10,821**
Additions Based on Tax Positions Related to the Current Year	**1,705**
Reductions for Tax Positions of Prior Years	**(295)**
Lapse of Applicable Statute of Limitations	**(2,315)**
Balance at End of Year	**$ 9,916**
Year Ended December 31, 2021	
Balance at Beginning of Year	$ 6,613
Additions Based on Tax Positions Related to the Current Year	1,730
Additions for Tax Positions of Prior Years	3,866
Reductions for Tax Positions of Prior Years	(950)
Lapse of Applicable Statute of Limitations	(438)
Balance at End of Year	$ 10,821
Year Ended December 31, 2020	
Balance at Beginning of Year	$ 4,817
Additions Based on Tax Positions Related to the Current Year	1,100
Additions for Tax Positions of Prior Years	696
Balance at End of Year	$ 6,613

The total amount of unrecognized tax benefits that, if recognized, would impact the effective tax rate is $10.3 million. We do not currently believe that the unrecognized tax benefits will change materially within the next 12 months.

CoBank is no longer subject to federal tax examination for periods before 2019. In April 2020, the Internal Revenue Service initiated an examination of our federal tax returns that were amended to realize the benefit of certain equipment leasing transactions. The IRS examination was completed and in December 2021 we received a cash refund for the full amount of the receivable accrued from the amended federal tax returns, including accrued interest.

CoBank files tax returns in most states each year and is under continuous examination by various state taxing authorities. With some exceptions, we are no longer subject to state and local income tax examinations by taxing authorities for periods before 2019. For all open audits, any potential adjustments have been considered in establishing our reserve for uncertain tax positions as of December 31, 2022.

We recognize accrued interest and penalties related to unrecognized tax benefits as a component of the provision for income taxes. We had approximately $2.6 million, $2.8 million, and $1.7 million of interest and penalties accrued at December 31, 2022, 2021 and 2020, respectively.

Note 9 – Financial Instruments With Off-Balance Sheet Risk

We utilize various financial instruments with off-balance sheet risk to satisfy the financing needs of our borrowers and to manage our exposure to interest rate risk. Such financial instruments include commitments to extend credit and commercial letters of credit. Commitments to extend credit are agreements to lend to a borrower provided that certain contractual conditions are met. Commercial letters of credit are agreements to pay a beneficiary under conditions specified in the letter of credit. Commitments and letters of credit generally have fixed expiration dates or other termination clauses and may require payment of a fee. At December 31, 2022, outstanding commitments to extend credit and commercial letters of credit were $47.5 billion and $51.1 million, respectively.

Since many of these commitments may expire without being drawn, the total commitments do not necessarily represent future cash requirements. Our exposure to many of these commitments is mitigated by borrowing base requirements contained in loan agreements. However, these credit-related financial instruments have off-balance sheet credit risk because their amounts are not reflected on the consolidated balance sheets until funded or drawn upon. The credit risk associated with issuing commitments and commercial letters of credit is substantially the same as that involved in extending loans to borrowers. Therefore, management applies the same credit policies to these commitments. The amount of collateral obtained, if deemed necessary upon extension of credit, is based on management's credit evaluation of the borrower. As discussed in Note 1, we maintain a reserve for unfunded commitments.

For a fee, we provide financial standby letters of credit for borrowers, which are irrevocable commitments to guarantee payment of a specified financial obligation. We also provide performance standby letters of credit which are irrevocable agreements by us, as a guarantor, to make payments to the guaranteed party in the event a specified third party fails to perform under a nonfinancial contractual obligation, such as a third party failing to timely deliver certain commodities at a specified time and place. We also issue indemnification agreements that function like guarantees. These indemnification agreements contingently require us, as the indemnifying party guarantor, to make payments to an indemnified party under certain specified circumstances. Certain recourse provisions would enable us, as a guarantor, to recover from third parties any of the amounts paid under guarantees, thereby limiting our maximum potential exposure.

As of December 31, 2022, the maximum potential amount of future payments that we may be required to make under our outstanding standby letters of credit was $2.0 billion, with a fair value of $17.5 million, which is included in other liabilities in the consolidated balance sheet. Payment/performance risk of the standby letters of credit guarantee is assessed using the same internal customer credit ratings that we use to manage credit risk in our loan portfolio. These outstanding standby letters of credit have expiration dates ranging from January 2023 to September 2041.

In addition, we had outstanding commitments of $103.7 million at December 31, 2022 to fund our equity investments, which include RBICs.

Note 10 – Derivatives and Hedging Activities

Risk Management Objectives and Strategies

We maintain an overall interest rate risk management strategy that incorporates the use of interest rate swaps and other derivatives to manage liquidity risk, market risk and to minimize significant unplanned fluctuations in earnings that are caused by interest rate volatility. Our goal is to manage interest rate sensitivity by modifying the repricing frequency or effective maturity of certain balance sheet assets and liabilities. We also maintain a foreign exchange risk management strategy to reduce the impact of currency fluctuations on our relatively nominal amount of foreign currency-denominated loans. As a result of interest rate and foreign exchange rate fluctuations, fixed-rate assets and liabilities will appreciate or depreciate in market value. The effect of this unrealized appreciation or depreciation is expected to be substantially offset by gains and losses on the derivative instruments that are linked to these assets and liabilities. Interest rate and foreign exchange fluctuations also cause interest income and interest expense of variable-rate assets and liabilities to increase or decrease. The effect of this variability in earnings is expected to be substantially offset by gains and losses on the derivative instruments that are linked to these assets and liabilities.

Uses of Derivatives

To achieve risk management objectives and satisfy the financing needs of our borrowers, we execute various derivative transactions with other financial institutions. Derivatives (primarily interest rate swaps) are used to manage liquidity and the interest rate risk arising from maturity and repricing mismatches between assets and liabilities. Under interest rate swap arrangements, we agree with a counterparty to exchange, at specified intervals, payment streams calculated on a specified notional amount, with at least one payment stream based on a specified floating-rate index. We use a variety of interest rate swaps including the exchange of floating-rate for fixed-rate swaps, fixed-rate for floating-rate swaps and floating-rate for floating-rate swaps with payment obligations tied to specific indices. In the course of managing risk in our investment and loan portfolios, we also periodically hedge cap and floor risk embedded within our floating-rate investments and loans by entering into derivative transactions. In addition, we execute foreign exchange spot and forward contracts to manage currency risk on loans denominated in foreign currencies. We also enter into derivatives for our customers as a service to enable them to transfer, modify or reduce their interest rate risk and foreign exchange risk by transferring such risk to us. We substantially offset this risk transference by concurrently entering into offsetting agreements with counterparties.

The notional amounts and related activity of derivatives at December 31, 2022, 2021 and 2020 are shown in the following table.

Activity in the Notional Amounts of Derivatives

($ in Millions)	Swaps	Caps / Floors	Spots / Forwards	Total
December 31, 2021	**$ 54,939**	**$ 4,530**	**$ 179**	**$ 59,648**
Additions /Accretion	**142,337**	**556**	**1,774**	**144,667**
Maturities /Amortization	**(114,964)**	**(1,237)**	**(1,808)**	**(118,009)**
Terminations	**(4,237)**	**(24)**	**-**	**(4,261)**
December 31, 2022	**$ 78,075**	**$ 3,825**	**$ 145**	**$ 82,045**
December 31, 2020	$ 46,666	$ 6,435	$ 157	$ 53,258
Additions /Accretion	93,141	411	2,029	95,581
Maturities /Amortization	(83,766)	(566)	(2,007)	(86,339)
Terminations	(1,102)	(1,750)	-	(2,852)
December 31, 2021	$ 54,939	$ 4,530	$ 179	$ 59,648
December 31, 2019	$ 33,339	$ 6,745	$ 192	$ 40,276
Additions /Accretion	45,544	324	1,701	47,569
Maturities /Amortization	(31,013)	(579)	(1,736)	(33,328)
Terminations	(1,204)	(55)	-	(1,259)
December 31, 2020	$ 46,666	$ 6,435	$ 157	$ 53,258

Accounting for Derivative Instruments and Hedging Activities

We record derivatives as assets or liabilities at their fair value on the consolidated balance sheets. We record changes in the fair value of a derivative in current period earnings or accumulated other comprehensive income (loss), depending on the use of the derivative and whether it qualifies for hedge accounting. For fair value hedge transactions that hedge changes in the fair value of assets or liabilities, changes in the fair value of the derivative will generally be offset in the statement of income by changes in the hedged item's fair value attributable to the risk being hedged. For cash flow hedge transactions, in which we hedge the variability of future cash flows related to a variable-rate or foreign currency denominated asset or liability, changes in the fair value of the derivative are reported in accumulated other comprehensive income (loss). The gains and losses on the derivatives that we report in accumulated other comprehensive income (loss) will be reclassified as earnings in the periods in which earnings are affected by the variability of the cash flows of the hedged item.

For our customer transactions, which are not designated as hedging instruments, we record the related changes in fair value in current period earnings. We substantially offset this risk transference by concurrently entering into offsetting agreements with counterparties, with the changes in fair value of these transactions also recorded in current period earnings.

Fair Value Hedges

The majority of the fair value hedging activity relates to entering into interest rate swaps primarily to convert our non-prepayable fixed-rate debt to floating-rate debt to achieve our liquidity management strategy. The amount converted depends on contractual interest rates and maturities. For the remaining fair value hedges, we enter into receive-fixed, pay-floating swaps for our equity positioning strategy. For fair value hedges, the amount of hedge ineffectiveness is recognized as net interest income in current period earnings.

Cash Flow Hedges

Our cash flow hedges include interest rate caps and interest rate floors to hedge cap and floor risk embedded within a portion of our floating-rate investment securities and loans. Interest rate caps and floors are an integral part of our interest rate hedging strategies. The interest rate caps hedge floating-rate debt cash flows that fund the cash flows from floating-rate investment securities. If the strike rates in the purchased interest rate caps are exceeded, we receive cash flows on the derivative to hedge our floating-rate funding exposure above such strike levels. The interest rate floors hedge cash flows from floating-rate loans. If market index rates underlying our floating-rate loans decline below strike levels, we receive cash flows on the derivative. We also enter into foreign exchange spot and forward contracts to manage currency risk on loans denominated in foreign currencies. Typically, foreign currency contracts are purchased to fund the principal cash flows of the loan and simultaneously sold to lock in the principal and interest cash flows upon repricing or maturity date of the loan. For cash flow hedges, the amount excluded from effectiveness assessment and the amounts reclassified from accumulated other comprehensive income (loss) into current period earnings are all reflected in net interest income. For cash flow hedges in which the forecasted transaction is not probable of occurring, the amounts reclassified from accumulated other comprehensive income (loss) are reflected in current period earnings. At December 31, 2022, we expect that $9.6 million of expense will be reclassified from accumulated other comprehensive income (loss) into earnings in the next 12 months, based on the anticipated cash flows of existing financial instruments.

The maximum term over which we are hedging our exposure to the variability of future cash flows for all forecasted transactions is approximately 13 years.

Derivatives Not Designated As Hedges

Derivative agreements with our customers and the related offsetting derivative agreements with counterparties as well as our short-term interest rate swaps indexed to Secured Overnight Financing Rate (SOFR) under our basis risk management strategy and certain other derivatives are not designated as hedging instruments and do not receive hedge accounting treatment. Accordingly, any changes in the fair value of these derivatives are recognized immediately as noninterest income/expense in current period earnings.

Counterparty Credit Risk

The use of derivatives for risk management introduces credit risk related to customers and counterparties. Generally, when the fair value of a derivative contract is positive, we are exposed to credit risk. When the fair value of a derivative contract is negative, the counterparty is exposed to us.

Derivative transactions with our customers are typically secured through our loan agreements. As of December 31, 2022, 2021 and 2020, the notional amount of derivatives with our customers totaled $13.5 billion, $13.1 billion and $12.5 billion, respectively.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) requires certain derivative transactions to be cleared through a central clearinghouse and traded on regulated swap execution facilities. The U.S. Commodity Futures Trading Commission has exempted certain qualifying swaps entered into by end-users and financial cooperatives from these requirements. The exemptions do not cover all swaps executed by CoBank and are generally limited to swaps entered into in connection with loans and derivatives for customer-owners. CoBank has also voluntarily chosen to clear some swap transactions for economic and risk management purposes. As a result, certain of our derivative transactions are cleared through a futures commission merchant (FCM) with a clearinghouse or central counterparty (CCP). When these swaps are cleared, a single bilateral swap is divided into two separate swaps with the CCP becoming the counterparty to both of the initial parties to the swap. CCPs have several layers of protection against default including initial margin and variation margin or settlement payments that are required to be posted by participants. FCMs prequalify counterparties to all cleared swaps, set exposure limits for each counterparty and collect initial margin and variation margin or settlement payments daily for changes in the value of cleared derivatives. The margin and settlement payments collected from both parties to the swap protect against credit risk in the event of a counterparty default. As of December 31, 2022, 2021 and 2020, the notional amount of our cleared derivatives was $58.7 billion, $36.8 billion and $29.0 billion, respectively. Initial margin and settlement payments totaling $157.5 million and $279.3 million, respectively, were held by our CCP for our cleared derivatives as of December 31, 2022, $110.7 million and $50.1 million, respectively, as of December 31, 2021 and $50.6 million and $161.7 million, respectively, as of December 31, 2020.

Our remaining non-customer derivatives are transacted with derivative counterparties and governed by master swap agreements, which include bilateral collateral arrangements, requiring the Bank or our counterparties to post collateral on a daily basis with thresholds set at zero for all active counterparties. The master swap agreements also include netting agreements requiring the net settlement of covered contracts with the same counterparty in the event of default by the other party. The "net" mark-to-market exposure represents the netting of the positive and negative exposures with that counterparty. Notwithstanding these protections, we are exposed to credit risk with these counterparties due to the timing of daily margining activities. As of December 31, 2022, 2021 and 2020, the notional amount of derivatives with our non-customer counterparties, excluding cleared derivatives, totaled $9.9 billion, $9.8 billion and $11.7 billion, respectively.

We record derivative exposures and related cash collateral balances at gross amounts in our consolidated balance sheets. Pursuant to our master swap agreements, as of December 31, 2022 our non-customer counterparties posted $559.8 million in cash as collateral with us.

The net fair value of our derivatives to all of our dealer counterparties was a net asset at December 31, 2022 and was offset by the collateral we received from our dealer counterparties. At December 31, 2021 and 2020, the net fair value of our derivatives to all of our dealer counterparties was a net liability and was offset by the collateral we posted to our dealer counterparties. The amount of losses related to derivatives we are exposed to in the event of nonperformance by dealer counterparties to our derivative positions is mitigated by collateral posted or held by us.

Hedge Terminations

During 2022, we terminated $1.1 billion in notional value of interest rate swaps which hedged the fair value of certain of our fixed-rate debt. The swaps were previously accounted for as fair value hedges and the $34.4 million of hedged item basis adjustment upon termination will be amortized to earnings as an offset to interest expense over the remaining life of the original hedging relationships.

During 2021, we terminated $1.75 billion, respectively, in notional value of interest rate floors which hedged cash flows from certain of our floating-rate loans. The floors were previously accounted for as cash flow hedges and the $7.9 million gain in accumulated other comprehensive income upon termination will be amortized to earnings as an increase to interest income over the remaining life of the original hedging relationships.

During 2020, we terminated $55.0 million in notional value of interest rate caps which hedged debt funding certain loans which prepaid in 2020. These cap terminations were previously accounted for as cash flow hedges.

We terminated interest rate swaps with customers and offsetting dealer counterparties totaling notional value of $3.1 billion, $1.1 billion and $1.2 billion in 2022, 2021 and

2020, respectively. Proceeds from the customer terminations were offset by payments for the offsetting dealer terminations.

Cleared Derivative Transition

On October 19, 2020, we participated in the mandatory transition of $24.4 billion of our LIBOR-indexed cleared derivatives with our clearinghouse (CCP) from Overnight Index Swap (OIS) discounting to SOFR discounting. As part of this transition, we received approximately $218.1 million in notional value of Effective Federal Funds Rate vs. SOFR basis swaps with various maturity dates based on our cleared derivative position with our CCP on this date. We participated in the CCP auction of our basis swaps on October 22, 2020 and liquidated all of these basis swaps for a nominal amount to eliminate future interest rate risk. We applied the ASU 848 optional accounting relief, described in Note 2, to this transaction which resulted in a continuation of the existing derivative accounting, no dedesignation of any accounting hedges and a minimal gain recorded in the accompanying consolidated statement of income in 2020.

A summary of the impact of interest rate swaps and other derivatives on our consolidated balance sheets as of December 31, 2022, 2021 and 2020 is shown in the following tables.

Fair Value of Derivatives

As of December 31, 2022	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 114,012	$ 538,650
Foreign Exchange Contracts	79	1,799
Total Derivatives Designated as Hedging Instruments	$ 114,091	$ 540,449
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 885,707	$ 818,239
Foreign Exchange Contracts	42	41
Total Derivatives Not Designated as Hedging Instruments	$ 885,749	$ 818,280
Settlement Payments	$ -	$ (279,299)
Total Derivatives	$ 999,840	$ 1,079,430

(1) These assets make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2022.

(2) These liabilities make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2022.

Fair Value of Derivatives

As of December 31, 2021	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 141,904	$ 36,745
Foreign Exchange Contracts	891	615
Total Derivatives Designated as Hedging Instruments	$ 142,795	$ 37,360
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 393,873	$ 334,223
Foreign Exchange Contracts	102	101
Total Derivatives Not Designated as Hedging Instruments	$ 393,975	$ 334,324
Settlement Payments	$ (50,116)	$ -
Total Derivatives	$ 486,654	$ 371,684

(1) These assets make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2021.

(2) These liabilities make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2021.

Fair Value of Derivatives

As of December 31, 2020	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 376,007	$ 335
Foreign Exchange Contracts	147	1,962
Total Derivatives Designated as Hedging Instruments	$ 376,154	$ 2,297
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 663,401	$ 608,122
Foreign Exchange Contracts	1	1
Total Derivatives Not Designated as Hedging Instruments	$ 663,402	$ 608,123
Settlement Payments	$ (161,682)	$ -
Total Derivatives	$ 877,874	$ 610,420

(1) These assets make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2020.

(2) These liabilities make up the interest rate swaps and other derivatives in the consolidated balance sheet as of December 31, 2020.

A summary of the impact of interest rate swaps and other derivatives on our consolidated statements of income and comprehensive income for the years ended December 31, 2022, 2021 and 2020 is shown in the following tables.

Effect of Fair Value and Cash Flow Hedge Accounting on the Consolidated Statement of Income

	Interest Income Loans	Interest Income Investments[3]	Total Interest Income	Interest Expense	Net Interest Income	Noninterest Income (Expense)
Year Ended December 31, 2022						
Total Amount of Line Items Presented in Consolidated Statement of Income	**$ 3,909,009**	**$ 839,138**	**$ 4,748,147**	**$ (2,864,222)**	**$ 1,883,925**	**$ 366,011**
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	**$ -**	**$ -**	**$ -**	**$ (620,624)**	**$ (620,624)**	**$ -**
Recognized on Hedged Items	**-**	**-**	**-**	**623,037**	**623,037**	**-**
Net Income (Expense) Recognized on Fair Value Hedges	**$ -**	**$ -**	**$ -**	**$ 2,413**	**$ 2,413**	**$ -**
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	**$ 3,069**	**$ -**	**$ 3,069**	**$ (13,108)**	**$ (10,039)**	**$ -**
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[1]	**(1,745)**	**-**	**(1,745)**	**-**	**(1,745)**	**-**
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	**954**	**-**	**954**	**-**	**954**	**-**
Net Income (Expense) Recognized on Cash Flow Hedges	**$ 2,278**	**$ -**	**$ 2,278**	**$ (13,108)**	**$ (10,830)**	**$ -**
Year Ended December 31, 2021						
Total Amount of Line Items Presented in Consolidated Statement of Income	$ 2,430,753	$ 438,621	$ 2,869,374	$ (1,143,474)	$ 1,725,900	$ 198,746
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	$ -	$ -	$ -	$ 252,579	$ 252,579	$ -
Recognized on Hedged Items	-	-	-	(250,841)	(250,841)	-
Net Income (Expense) Recognized on Fair Value Hedges	$ -	$ -	$ -	$ 1,738	$ 1,738	$ -
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	$ 41	$ -	$ 41	$ (13,893)	$ (13,852)	$ -
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[2]	1,720	-	1,720	-	1,720	-
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	386	-	386	-	386	-
Net Income (Expense) Recognized on Cash Flow Hedges	$ 2,147	$ -	$ 2,147	$ (13,893)	$ (11,746)	$ -

(1) Fully offset by a $1,745 gain on foreign currency denominated loans (hedged items) which is also located in interest income - loans in the consolidated statement of income for the year ended December 31, 2022.

(2) Fully offset by a $1,720 loss on foreign currency denominated loans (hedged items) which is also located in interest income - loans in the consolidated statement of income for the year ended December 31, 2021.

(3) Includes interest income on investments, federal funds sold and other overnight funds for the years ended December 31, 2022 and 2021.

Effect of Fair Value and Cash Flow Hedge Accounting on the Consolidated Statement of Income

	Interest Income Loans	Interest Income Investments[3]	Total Interest Income	Interest Expense	Net Interest Income	Noninterest Income (Expense)
Year Ended December 31, 2020						
Total Amount of Line Items Presented in Consolidated Statement of Income	$ 2,736,175	$ 576,231	$ 3,312,406	$ (1,745,874)	$ 1,566,532	$ 281,836
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	$ -	$ -	$ -	$ 164,823	$ 164,823	$ -
Recognized on Hedged Items	-	-	-	(165,001)	(165,001)	-
Net Income (Expense) Recognized on Fair Value Hedges	$ -	$ -	$ -	$ (178)	$ (178)	$ -
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	$ (1,005)	$ -	$ (1,005)	$ (14,186) [1]	$ (15,191)	$ (3,411) [1]
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[2]	531	-	531	-	531	-
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	780	-	780	-	780	-
Net Income (Expense) Recognized on Cash Flow Hedges	$ 306	$ -	$ 306	$ (14,186)	$ (13,880)	$ (3,411)

(1) $3,411 related to termination of interest rate contracts is located in noninterest expense - other, net and the remaining $14,186 related to continuing interest rate contracts is located in interest expense in the consolidated statement of income for the year ended December 31, 2020.

(2) Fully offset by a $531 loss on foreign currency denominated loans (hedged items) which is also located in interest income - loans in the consolidated statement of income for the year ended December 31, 2020.

(3) Includes interest income on investments, federal funds sold and other overnight funds for the years ended December 31, 2020.

Effect of Cash Flow Hedge Accounting on the Consolidated Balance Sheet

	Amount of Gain (Loss) Recognized in Accumulated Other Comprehensive Income (Loss) on Derivatives		
Year Ended December 31,	**2022**	**2021**	**2020**
Interest Rate Contracts	**$ 89,811**	$ (6,269)	$ 2,176
Foreign Exchange Contracts	**(1,997)**	2,091	(18)
Total	**$ 87,814**	$ (4,178)	$ 2,158

Effect of Derivatives not Designated as Hedging Relationships on the Consolidated Statements of Income

	Net Amount of Gain or (Loss) Recognized		
Year Ended December 31,	**2022**	**2021**	**2020**
Interest Rate Contracts[1]	**$ 10,641**	$ 5,102	$ 7,414
Foreign Exchange Contracts	**-**	-	-
Total	**$ 10,641**	$ 5,102	$ 7,414

(1) Includes $7,395 gain, $221 loss and $252 loss on short-term derivatives indexed to SOFR and recognized in interest expense for the years ended December 31, 2022, 2021 and 2020, respectively, and $3,256 gain, $5,323 gain and $7,666 gain on derivatives with customers and related offsetting derivatives with counterparties including credit valuation adjustments and recognized in noninterest income/ expense for the years ended December 31, 2022, 2021 and 2020, respectively.

A summary of the cumulative basis adjustment for fair value hedging relationships included in the carrying amount of hedged liabilities as of December 31, 2022, 2021 and 2020 is shown in the following table.

Derivatives in Fair Value Hedging Relationships

		Cumulative Basis Adjustment Included in the Carrying Amount of Hedged Liabilities	
As of December 31,	**Carrying Amount of Hedged Liabilities**	**Hedged Items Currently Designated**	**Hedged Items No Longer Designated**
2022			
Bonds and Notes	**$ 28,765,239**	**$ (541,576)**	**$ (24,222)**
2021			
Bonds and Notes	$ 18,030,275	$ 81,461	$ -
2020			
Bonds and Notes	$ 14,658,292	$ 332,302	$ 92

Asset/Liability Offsetting

As noted previously, derivative transactions with swap dealers include bilateral collateral and netting agreements that require the net settlement of covered contracts. Derivative transactions with customers are collateralized through loan agreements. Notwithstanding collateral and netting provisions, our derivative assets and liabilities are not offset in the accompanying consolidated balance sheets. The amount of collateral received or pledged is calculated on a net basis, by counterparty.

The following tables summarize derivative assets and liabilities, related accrued interest and amounts of collateral exchanged pursuant to our agreements.

Offsetting of Derivatives and Collateral

	Gross Amounts of Assets/Liabilities Presented in the Consolidated Balance Sheets	Amounts Not Offset In the Consolidated Balance Sheets: Cash Collateral Received/ Pledged[1]	Amounts Not Offset In the Consolidated Balance Sheets: Investment Securities Received/Pledged as Collateral[1]	Net Amount
As of December 31, 2022				
Assets:				
Interest Rate Swaps and Other Derivatives:				
Dealer	$ 544,173	$ (559,780)	$ -	$ - [2]
Customer	65,420	-	-	65,420
Clearinghouse	390,247	-	-	390,247
Accrued Interest Receivable on Derivative Contracts	20,213	-	-	20,213
Liabilities:				
Interest Rate Swaps and Other Derivatives:				
Dealer	3,928	-	-	3,928
Customer	750,692	-	-	750,692
Clearinghouse	324,810	-	(157,513)	167,297
Accrued Interest Payable on Derivative Contracts	82,761	-	-	82,761

[1] Cash collateral received is recognized in the consolidated balance sheets whereas investment securities received are not recognized in the consolidated balance sheets.

[2] Cash pledged as collateral fully offset the related gross asset on the consolidated balance sheet.

Offsetting of Derivatives and Collateral

	Gross Amounts of Assets/Liabilities Presented in the Consolidated Balance Sheets	Amounts Not Offset In the Consolidated Balance Sheets: Cash Collateral Received/ Pledged[1]	Amounts Not Offset In the Consolidated Balance Sheets: Investment Securities Received/Pledged as Collateral[1]	Net Amount
As of December 31, 2021				
Assets:				
Interest Rate Swaps and Other Derivatives:				
Dealer	$ 57,212	$ (1,270)	$ -	$ 55,942
Customer	307,358	-	-	307,358
Clearinghouse	122,084	-	-	122,084
Accrued Interest Receivable on Derivative Contracts	44,157	-	-	44,157
Liabilities:				
Interest Rate Swaps and Other Derivatives:				
Dealer	143,740	(81,120)	-	62,620
Customer	68,628	-	-	68,628
Clearinghouse	159,316	-	(110,723)	48,594
Accrued Interest Payable on Derivative Contracts	6,484	-	-	6,484
As of December 31, 2020				
Assets:				
Interest Rate Swaps and Other Derivatives:				
Dealer	$ 44,209	$ -	$ -	$ 44,209
Customer	624,224	-	-	624,224
Clearinghouse	209,441	-	-	209,441
Accrued Interest Receivable on Derivative Contracts	63,142	-	-	63,142
Liabilities:				
Interest Rate Swaps and Other Derivatives:				
Dealer	314,100	(268,290)	-	45,810
Customer	32,719	-	-	32,719
Clearinghouse	263,601	-	(50,628)	212,973
Accrued Interest Payable on Derivative Contracts	9,025	-	-	9,025

[1] Cash collateral received is recognized in the consolidated balance sheets whereas investment securities received are not recognized in the consolidated balance sheets.

Note 11 – Disclosure About Estimated Fair Value of Financial Instruments

The fair value of financial instruments represents the estimated amount to be received to sell an asset or paid to transfer or extinguish a liability (an exit price) in active markets among willing participants at the reporting date. The FASB has established a three-level fair value hierarchy aimed at maximizing the use of observable inputs – that is, inputs that reflect the assumptions market participants would use in pricing an asset or liability. Observable inputs are based on market data obtained from independent sources. Unobservable inputs are supported by limited or no market activity and require significant management judgment or estimation.

Due to the uncertainty of expected cash flows resulting from financial instruments, the use of different assumptions and valuation methodologies could significantly affect the estimated fair value amounts. Accordingly, certain estimated fair values may not be indicative of the amounts for which the financial instruments could be exchanged in a current or future market transaction.

A description of the methods, assumptions and inputs to the valuation process used to determine or estimate the fair value of each class of financial instruments within the three-level hierarchy follows.

Level 1

Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Our Level 1 assets at December 31, 2022 consist of assets held in a trust fund related to deferred compensation and nonqualified retirement plans. The trust fund includes investments in securities that are actively traded and have quoted net asset value prices that are directly observable in the marketplace.

Level 2

Level 2 inputs include quoted prices for similar assets and liabilities in active markets; quoted prices in markets that are not active; and inputs that are observable, or can be corroborated, for substantially the full term of the asset or liability. Our Level 2 assets and liabilities at December 31, 2022 include our derivative contracts, certificates of deposit, collateral balances related to derivative contracts, federal funds sold and other overnight funds, U.S. Treasury and agency debt investment securities, Ginnie Mae MBS, corporate bonds, and the substantial majority of agency MBS and ABS.

The fair value of federal funds sold and other overnight funds is generally their face value, plus accrued interest, as these instruments are readily convertible to cash and are short-term in nature.

The fair value of our investment securities classified as Level 2 is determined by a third-party pricing service that uses valuation models to estimate current market prices. Inputs and assumptions related to these models are typically observable in the marketplace. Such models incorporate prepayment assumptions and underlying collateral information to generate cash flows that are discounted using appropriate benchmark interest rate curves and volatilities. These third-party valuation models also incorporate information regarding non-binding broker/dealer quotes, available trade information, historical cash flows, credit ratings, and other market information. The estimated fair values of investment securities also appear in Note 4.

The fair value of our interest rate swaps and other derivatives is the estimated amount to be received to sell a derivative asset or paid to transfer or extinguish a derivative liability in active markets among willing participants at the reporting date. Estimated fair value is determined through internal market valuation models. These models use an income approach and incorporate benchmark interest rate curves and discounting (primarily the Overnight Index Swap rate for collateralized non-customer derivative contracts, SOFR for collateralized cleared derivative contracts and the USD LIBOR/swap curve for non-collateralized customer derivative contracts), volatilities, counterparty credit quality and other inputs that are observable directly or indirectly in the marketplace. We compare internally calculated derivative valuations to broker/dealer quotes to substantiate the results. The fair value of collateral assets and liabilities related to derivative contracts is their face value, plus accrued interest, as these instruments are cash balances; therefore, fair value approximates face value.

The following table presents information about valuation techniques and inputs to Level 2 fair value measurements.

Information About Valuation Techniques and Inputs to Level 2 Fair Value Measurements

	Valuation Technique	Inputs
Federal Funds Sold and Other Overnight Funds	Carrying Value	Par/Principal Plus Accrued Interest
Certificates of Deposit	Third-Party Pricing Service	Benchmark Yield Curve Quoted Prices
Investment Securities	Third-Party Pricing Service	Prepayment Rate Lifetime Default Rate Loss Severity Benchmark Yield Curve Quoted Prices
Interest Rate Swaps and Other Derivatives	Discounted Cash Flow	Benchmark Yield Curve Counterparty Credit Risk Volatility
Collateral Assets and Collateral Liabilities	Carrying Value	Par/Principal Plus Accrued Interest

Level 3

Level 3 inputs are unobservable and supported by limited or no market activity. Our Level 3 assets at December 31, 2022 include a small portion of agency MBS and ABS. Based on the lack of active trading volume and an orderly market for these securities, we classified these securities as Level 3. Fair value for Level 3 agency MBS is estimated through a third-party pricing service that uses valuation models to estimate current market prices. Fair value for a small portion of our Level 3 ABS is calculated internally using third-party models. Inputs into all of these valuation models include underlying collateral data and projected losses as well as information for prepayment speeds and discounting spreads. Due to the lack of marketplace information, the inputs into these valuation models primarily represent management assumptions, with some corroboration to market inputs where information is available.

Level 3 assets at December 31, 2022 also include $96.3 million of loans originally measured at cost, which were written down to fair value as a result of impairment. The valuation of these assets is based on either the fair value of the underlying collateral, if the loan is collateral dependent, or the present value of expected future cash flows. Such valuations may include the use of independent appraisals or other market-based information to develop a management estimate of fair value. As a result, these fair value measurements fall under Level 3 in the fair value hierarchy; however, they are excluded from the 'Assets and Liabilities Measured at Fair Value on a Recurring Basis' tables on pages 123 and 124 because they are not measured on a recurring basis.

Our Level 3 liabilities at December 31, 2022 include standby letters of credit whose market value is internally calculated based on information that is not observable either directly or indirectly in the marketplace.

No transfers into or out of Level 3 assets or liabilities occurred in 2022, 2021 and 2020.

The following table presents quantitative information about Level 3 fair value measurements as of December 31, 2022.

Quantitative Information About Valuation Techniques and Unobservable Inputs to Level 3 Fair Value Measurements

($ in Millions)	Fair Value	Valuation Technique	Unobservable Inputs	Range (Weighted Average)
Assets				
Investment Securities:				
U.S. Agency MBS	$ 58	Third-Party Pricing Service	Prepayment Rate	*
			Lifetime Default Rate	*
			Loss Severity	*
Other (included in Asset-Backed)	25	Discounted Cash Flow	Prepayment Rate	0% (0%)
Impaired Loans	96	Appraisal / Discounted Cash Flow	Income/Expense Data	**
			Comparable Sales	**
			Replacement Cost	**
Liabilities				
Standby Letters of Credit	$ 17	Discounted Cash Flow	Mark-to-Market Spread	0.1-1.3% (0.9%)

* Excludes ranges which are determined by a third-party pricing service

** Range of inputs are unique to each collateral property

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following tables present the assets and liabilities that are measured at fair value on a recurring basis at December 31, 2022, 2021 and 2020 for each of the fair value hierarchy levels.

Assets and Liabilities Measured at Fair Value on a Recurring Basis December 31, 2022 ($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and Other Overnight Funds	$ -	$ 12,401	$ -	$ 12,401
Investment Securities:				
Certificates of Deposit	-	850	-	850
U.S. Treasury Debt	-	14,052	-	14,052
U.S. Agency Debt	-	1,627	-	1,627
Residential MBS:				
Ginnie Mae	-	837	-	837
U.S. Agency	-	1,261	58	1,319
Commercial MBS:				
U.S. Agency	-	13,587	-	13,587
Corporate Bonds	-	501	-	501
Asset-Backed and Other	-	299	25	324
Interest Rate Swaps and Other Derivatives	-	1,000	-	1,000
Assets Held in Trust (included in Other Assets)	109	-	-	109
Total Assets	$ 109	$ 46,415	$ 83	$ 46,607
Liabilities				
Interest Rate Swaps and Other Derivatives	$ -	$ 1,079	$ -	$ 1,079
Collateral Liabilities (included in Bonds and Notes)	-	560	-	560
Standby Letters of Credit (included in Other Liabilities)	-	-	17	17
Total Liabilities	$ -	$ 1,639	$ 17	$ 1,656

Assets and Liabilities Measured at Fair Value on a Recurring Basis December 31, 2021 ($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and Other Overnight Funds	$ -	$ 5,500	$ -	$ 5,500
Investment Securities:				
U.S. Treasury Debt	-	15,716	-	15,716
U.S. Agency Debt	-	2,077	-	2,077
Residential MBS:				
Ginnie Mae	-	1,200	-	1,200
U.S. Agency	-	1,148	72	1,220
Commercial MBS:				
U.S. Agency	-	11,225	-	11,225
Corporate Bonds	-	383	-	383
Asset-Backed and Other	-	1	20	21
Interest Rate Swaps and Other Derivatives	-	487	-	487
Assets Held in Trust (included in Other Assets)	121	-	-	121
Collateral Assets (included in Other Assets)	-	81	-	81
Total Assets	$ 121	$ 37,818	$ 92	$ 38,031
Liabilities				
Interest Rate Swaps and Other Derivatives	$ -	$ 372	$ -	$ 372
Standby Letters of Credit (included in Other Liabilities)	-	-	16	16
Total Liabilities	$ -	$ 372	$ 16	$ 388

Assets and Liabilities Measured at Fair Value on a Recurring Basis

December 31, 2020

($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and Other Overnight Funds	$ -	$ 835	$ -	$ 835
Investment Securities:				
U.S. Treasury Debt	-	14,362	-	14,362
U.S. Agency Debt	-	2,960	-	2,960
Residential MBS:				
Ginnie Mae	-	886	-	886
U.S. Agency	-	2,281	84	2,365
Commercial MBS:				
U.S. Agency	-	11,554	-	11,554
Corporate Bonds	-	394	-	394
Asset-Backed and Other	-	291	13	304
Interest Rate Swaps and Other Derivatives	-	878	-	878
Assets Held in Trust (included in Other Assets)	108	-	-	108
Collateral Assets (included in Other Assets)	-	268	-	268
Total Assets	$ 108	$ 34,709	$ 97	$ 34,914
Liabilities				
Interest Rate Swaps and Other Derivatives	$ -	$ 610	$ -	$ 610
Standby Letters of Credit (included in Other Liabilities)	-	-	13	13
Total Liabilities	$ -	$ 610	$ 13	$ 623

The following table presents the changes in Level 3 assets and liabilities measured at fair value on a recurring basis.

Level 3 Assets and Liabilities Measured at Fair Value on a Recurring Basis

($ in Millions)	U.S. Agency Residential MBS	Asset-Backed Securities and Other	Standby Letters of Credit
Balance at January 1, 2022	**$ 72**	**$ 20**	**$ 16**
Total Gains or Losses (Realized/Unrealized):			
Included in Other Comprehensive Income	**(3)**	**(2)**	**-**
Purchases	**-**	**16**	**-**
Issuances	**-**	**-**	**19**
Settlements	**(12)**	**(9)**	**(18)**
Accretion	**1**	**-**	**-**
Balance at December 31, 2022	**$ 58**	**$ 25**	**$ 17**
Balance at January 1, 2021	$ 84	$ 13	$ 13
Total Gains or Losses (Realized/Unrealized):			
Included in Other Comprehensive Income	1	-	-
Purchases	-	7	-
Issuances	-	-	15
Settlements	(14)	-	(12)
Accretion	1	-	-
Balance at December 31, 2021	$ 72	$ 20	$ 16
Balance at January 1, 2020	$ 99	$ 14	$ 11
Total Gains or Losses (Realized/Unrealized):			
Included in Other Comprehensive Income	(3)	-	-
Purchases	-	14	-
Issuances	-	-	12
Settlements	(13)	(15)	(10)
Accretion	1	-	-
Balance at December 31, 2020	$ 84	$ 13	$ 13

Estimated Fair Value of Certain Other Financial Instruments

The following table presents the estimated fair value of financial instruments that are recorded in the consolidated balance sheets at cost, as well as certain off-balance sheet financial instruments, as of December 31, 2022, 2021 and 2020.

($ in Millions)

	December 31, 2022			December 31, 2021			December 31, 2020		
	Carrying Amount	Estimated Fair Value	Fair Value Hierarchy	Carrying Amount	Estimated Fair Value	Fair Value Hierarchy	Carrying Amount	Estimated Fair Value	Fair Value Hierarchy
Financial Assets:									
Net Loans	**$ 139,407**	**$ 133,760**	**Level 3**	$ 127,878	$ 129,847	Level 3	$ 120,220	$ 124,075	Level 3
Financial Liabilities:									
Bonds and Notes	**$ 174,623**	**$ 168,797**	**Level 3**	$ 154,950	$ 156,357	Level 3	$ 143,384	$ 146,959	Level 3
Off-Balance Sheet Financial Instruments:									
Commitments to Extend Credit	**$ -**	**$ (143)**	**Level 3**	$ -	$ (130)	Level 3	$ -	$ (112)	Level 3

Commitments to Extend Credit

The fair value of commitments to extend credit is estimated using a discounted cash flow method by applying a risk-adjusted spread percentage to these obligations.

Note 12 – Leased Property

We have operating leases for our corporate headquarters, banking center offices, certain equipment and vehicles. We determine if an arrangement is a lease and the related lease classification at inception. Right-of-use (ROU) assets and lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. If available, we use the implicit rate in the lease in determining the present value of future payments. We use our incremental borrowing rate based on the information available at commencement date when the implicit rate in the lease is not available. ROU assets and lease liabilities are included in other assets and other liabilities, respectively, in our consolidated balance sheet as of December 31, 2022. Operating lease rentals are expensed on a straight-line basis over the life of the lease beginning on the date we take possession of the property. We determine the lease term by assuming the exercise of renewal and termination options that are reasonably certain. Our leases have remaining minimum lease terms of less than one year to eight years, some of which include options to extend the leases for up to an additional 15 years. Rent expense for leases is reflected in occupancy and equipment expense in the accompanying consolidated statements of income. Additionally, the depreciable life of leased assets and leasehold improvements is limited by the expected lease term.

Other information related to our operating leases is as follows:

Operating Leases			
As of December 31,	**2022**	**2021**	**2020**
Right-of-Use Assets	**$ 57,752**	$ 62,521	$ 70,137
Lease Liabilities	**61,696**	66,217	73,610
Year Ended December 31,	**2022**	**2021**	**2020**
Operating Lease Cost	**$ 15,531**	$ 14,303	$ 13,971
Weighted Average Remaining Lease Term	**7.4 years**	8.3 years	9.2 years
Weighted Average Discount Rate	**3.06%**	2.97%	2.94%

Future minimum lease payments under non-cancellable operating leases as of December 31, 2022 were as follows:

Future Minimum Operating Lease Payments	
Year Ending December 31,	
2023	$ 9,967
2024	9,296
2025	9,159
2026	8,692
2027	8,697
Thereafter	23,368
Total Future Minimum Lease Payments	$ 69,179
Less Imputed Interest	7,483
Lease Liabilities Reported as of December 31, 2022	$ 61,696

Note 13 – Related Party Transactions

In the ordinary course of business, we enter into loan transactions with customers, the officers or directors of which may also serve on our Board of Directors. Such loans are subject to special review and reporting requirements contained in the FCA regulations, are reviewed and approved only at the most senior loan committee level within the Bank and are regularly reported to the Board of Directors. All related party loans are made in accordance with established policies on substantially the same terms, including interest rates and collateral requirements, as those prevailing at the time for comparable transactions with unrelated borrowers.

Total loans outstanding to customers whose officers or directors serve on our Board of Directors amounted to $1.0 billion, $0.5 billion and $0.7 billion at December 31, 2022, 2021 and 2020, respectively. The outstanding balance of these loans increased by $0.5 billion and decreased by $0.2 billion during 2022 and 2021, respectively. During 2022, $3.6 billion of advances on related party loans were made and repayments on related party loans totaled $3.4 billion. The balance of these loans outstanding at December 31, 2022, as compared to 2021, increased $0.3 million due to membership changes to our Board of Directors. None of these loans outstanding at December 31, 2022 were delinquent, in nonaccrual or accruing restructured status or, in the opinion of management, involved more than a normal risk of collectability.

Note 14 – Segment Financial Information

We conduct our lending operations through three operating segments: Agribusiness, Farm Credit Banking and Rural Infrastructure.

The accompanying tables present condensed disaggregated information for the segments. Allocations of resources and corporate items, as well as measurement of financial performance, are made at these operating segment levels. All customer activity, including loans and leases and related income, is specifically assigned to the business units that make up the operating segments. Investment securities and federal funds sold and other overnight funds, which are primarily held as a liquidity reserve to support our banking operations, are not specifically assigned to operating segments; however, the income from investment securities and federal funds sold and other overnight funds is attributed to the operating segments. Intersegment transactions are generally insignificant and significant amounts are eliminated upon consolidation.

We do not hold significant assets in any foreign country. Substantially all of our agricultural export finance loans are U.S. dollar-denominated and 27 percent of these loans are guaranteed by the U.S. government. For the three years ended December 31, 2022, 2021 and 2020, no customer made up 10 percent or more of our gross or net interest income.

Segment Financial Information

	Agribusiness	Farm Credit Banking	Rural Infrastructure	Total CoBank
2022 Results of Operations ($ in Thousands):				
Net Interest Income	$ 1,053,590	$ 291,138	$ 539,197	$ 1,883,925
Provision for Loan Losses	71,500	-	39,500	111,000
Noninterest Income	213,370	8,889	143,752	366,011
Operating Expenses	361,525	48,872	169,469	579,866
Provision for Income Taxes	59,793	-	50,651	110,444
Net Income	$ 774,142	$ 251,155	$ 423,329	$ 1,448,626
Selected Financial Information at December 31, 2022 ($ in Millions):				
Loans	$ 40,098	$ 71,529	$ 28,461	$ 140,088
Less: Allowance for Loan Losses	(517)	-	(165)	(682)
Net Loans	$ 39,581	$ 71,529	$ 28,296	$ 139,406
Accrued Interest Receivable and Other Assets	695	497	995	2,187
Total Segment Assets	$ 40,276	$ 72,026	$ 29,291	$ 141,593
Federal Funds Sold and Other Overnight Funds				12,401
Investment Securities				33,097
Other Assets				1,752
Total Assets	$ 40,276	$ 72,026	$ 29,291	$ 188,843
2021 Results of Operations ($ in Thousands):				
Net Interest Income	$ 931,206	$ 284,704	$ 509,990	$ 1,725,900
Provision for Loan Losses	16,000	-	2,000	18,000
Noninterest Income	120,172	7,222	71,352	198,746
Operating Expenses	302,964	46,339	141,108	490,411
Provision for Income Taxes	55,564	-	46,512	102,076
Net Income	$ 676,850	$ 245,587	$ 391,722	$ 1,314,159
Selected Financial Information at December 31, 2021 ($ in Millions):				
Loans	$ 38,094	$ 65,632	$ 24,803	$ 128,529
Less: Allowance for Loan Losses	(499)	-	(152)	(651)
Net Loans	$ 37,595	$ 65,632	$ 24,651	$ 127,878
Accrued Interest Receivable and Other Assets	558	309	720	1,587
Total Segment Assets	$ 38,153	$ 65,941	$ 25,371	$ 129,465
Federal Funds Sold and Other Overnight Funds				5,500
Investment Securities				31,842
Other Assets				3,499
Total Assets	$ 38,153	$ 65,941	$ 25,371	$ 170,306

Segment Financial Information	Agribusiness	Farm Credit Banking	Rural Infrastructure	Total CoBank
2020 Results of Operations ($ in Thousands):				
Net Interest Income	$ 805,946	$ 290,592	$ 469,994	$ 1,566,532
Provision for Loan Losses (Loan Loss Reversal)	25,600	-	(4,600)	21,000
Noninterest Income	158,167	12,401	111,268	281,836
Operating Expenses	264,375	46,378	123,766	434,519
Provision for Income Taxes	65,601	-	64,247	129,848
Net Income	$ 608,537	$ 256,615	$ 397,849	$ 1,263,001
Selected Financial Information at December 31, 2020 ($ in Millions):				
Loans	$ 36,103	$ 60,516	$ 24,237	$ 120,856
Less: Allowance for Loan Losses	(490)	-	(146)	(636)
Net Loans	$ 35,613	$ 60,516	$ 24,091	$ 120,220
Accrued Interest Receivable and Other Assets	476	286	734	1,496
Total Segment Assets	$ 36,089	$ 60,802	$ 24,825	$ 121,716
Federal Funds Sold and Other Overnight Funds				835
Investment Securities				32,825
Other Assets				3,210
Total Assets	$ 36,089	$ 60,802	$ 24,825	$ 158,586

Note 15 – Commitments and Contingent Liabilities

Under the Farm Credit Act, we are primarily liable for the portion of outstanding Systemwide Debt Securities issued by CoBank. We are also contingently liable, as defined in statutory joint and several liability provisions, for the outstanding Systemwide Debt Securities issued by the other System banks. Total Systemwide Debt Securities of the System were $390.0 billion at December 31, 2022.

There are several mechanisms in place affecting exposure to statutory joint and several liabilities. System banks are statutorily required to maintain eligible, unencumbered assets at a level at least equal in value to the total amount of debt for which such System bank is primarily liable. In addition, in the event of a default by a System bank, the Insurance Fund would be required to make timely payment of principal and interest on Systemwide Debt Securities, to the extent that net assets are available in the Insurance Fund, before the joint and several liability of the System banks would be triggered. At December 31, 2022, the aggregated assets of the Insurance Fund totaled $6.7 billion. Finally, System banks must maintain certain financial criteria in order to participate in Systemwide debt issuances. If these criteria are not met, a troubled System bank's access to and participation in Systemwide debt issuances could be limited or denied.

On at least a quarterly basis, we assess our liabilities and contingencies in connection with outstanding legal proceedings utilizing the latest information available. For those matters where it is probable that we will incur a loss, and the amount of the loss can be reasonably estimated, we record a liability in our consolidated financial statements. For other matters, where a loss is not probable or the amount of the loss is not estimable, we will not accrue legal reserves.

On April 15, 2016, we redeemed $500.0 million in par value of our outstanding 7.875 percent subordinated notes (the Notes) due in 2018 totaling $404.7 million. The redemption price was 100 percent of the principal amount, together with accrued and unpaid interest up to, but excluding, the date of redemption. In June 2016, a lawsuit was commenced by the filing of a complaint in the United States District Court Southern District of New York (the "Court") against CoBank by a number of investors (the "Plaintiffs") who had held CoBank's Notes. The Notes were redeemed at par plus accrued interest by CoBank in April 2016 due to the occurrence of a "Regulatory Event" (as defined under the terms of the Notes). The Plaintiffs asserted a breach of contract claim and a breach of implied covenant of good faith and fair dealing claim alleging that CoBank impermissibly redeemed the Notes. CoBank and Plaintiffs filed respective motions for summary judgment.

On September 14, 2021, the Court ruled on the two summary judgment motions. On the breach of contract claim, the Court ruled in favor of the Plaintiffs. On the breach of implied covenant of good faith and fair dealing claim, the Court ruled in favor of CoBank. The Court further ruled that the amount of damages remained in dispute and required a trial. As a result of the ruling, during the third quarter of 2021 CoBank recorded an expense relating to the litigation. In January 2022, CoBank entered into a confidential settlement agreement with the Plaintiffs to resolve all claims alleged in the litigation. The case was dismissed with prejudice on January 18, 2022.

We are involved in various judicial, regulatory and arbitration proceedings concerning matters arising in connection with our business. While the outcome of such proceedings is inherently uncertain, based on information currently available, advice of legal counsel and available insurance coverage, we believe that the liabilities, if any, arising from such proceedings will not have a material adverse effect on our consolidated financial position, results of operations or cash flows. However, in the event of unexpected future developments, it is possible that the ultimate resolution of these matters, if unfavorable, may be material to the Bank's consolidated financial position, results of operations or cash flows.

We have various other commitments outstanding and contingent liabilities as discussed elsewhere in these notes to consolidated financial statements, including commitments to extend credit as discussed in Note 9.

Note 16 – Quarterly Financial Information

Unaudited quarterly results of operations for the years ended December 31, 2022, 2021 and 2020, are shown in the table below.

Quarterly Financial Information (Unaudited)

2022	First	Second	Third	Fourth	Total
Net Interest Income	$ 487,611	$ 504,547	$ 447,600	$ 444,167	$ 1,883,925
Provision for Loan Losses (Loan Loss Reversal)	46,000	59,000	(30,000)	36,000	111,000
Net Noninterest (Income) and Expenses	32,159	64,100	40,016	77,580	213,855
Provision for Income Taxes	32,213	28,384	42,708	7,139	110,444
Net Income	$ 377,239	$ 353,063	$ 394,876	$ 323,448	$ 1,448,626
2021	**First**	**Second**	**Third**	**Fourth**	**Total**
Net Interest Income	$ 443,049	$ 447,018	$ 407,130	$ 428,703	$ 1,725,900
Provision for Loan Losses (Loan Loss Reversal)	55,000	-	(50,000)	13,000	18,000
Net Noninterest (Income) and Expenses	29,775	58,010	71,928	131,952	291,665
Provision for Income Taxes	34,243	30,724	31,023	6,086	102,076
Net Income	$ 324,031	$ 358,284	$ 354,179	$ 277,665	$ 1,314,159
2020	**First**	**Second**	**Third**	**Fourth**	**Total**
Net Interest Income	$ 383,317	$ 375,257	$ 385,753	$ 422,205	$ 1,566,532
Provision for Loan Losses (Loan Loss Reversal)	26,000	16,000	4,000	(25,000)	21,000
Net Noninterest (Income) and Expenses	27,340	20,943	33,264	71,136	152,683
Provision for Income Taxes	35,894	37,193	39,708	17,053	129,848
Net Income	$ 294,083	$ 301,121	$ 308,781	$ 359,016	$ 1,263,001

Note 17 – Subsequent Events

We have evaluated subsequent events through March 1, 2023, which is the date the financial statements were issued.

Note 18 – Affiliated Associations

CoBank is chartered by the FCA to serve the Associations that provide credit and related financial services to or for the benefit of eligible borrowers/shareholders for qualified purposes in specific geographic areas in the United States. The Associations are not authorized by the Farm Credit Act to participate directly in the issuance of Systemwide Debt Securities. Therefore, we are the primary funding source for our affiliated Associations. As of January 1, 2023, we have 17 affiliated Associations serving 23 states across the Northwest, West, Southwest, Rocky Mountains, Mid-Plains, and Northeast regions of the United States.

The Associations originate and service long-term real estate mortgage loans as well as short- and intermediate-term loans for agricultural and other purposes to full and part-time farmers. Associations may also make loans to, among others, processing and marketing entities, farm-related businesses, and rural residents for home purchase and improvements. The Associations may also purchase eligible loan participations from System entities and other lending institutions. Additionally, the Associations may serve as an intermediary in offering multi-peril crop insurance and credit life insurance, and providing additional financial services to borrowers.

The Farm Credit Act and FCA regulations require us to monitor and approve certain activities of our affiliated Associations. CoBank and our affiliated Associations operate under a creditor/debtor relationship evidenced by a General Financing Agreement (GFA) entered into separately with each Association. The GFA sets forth the creditor/debtor relationship between us and each Association and also references certain requirements contained in the Farm Credit Act and FCA regulations. The Associations' respective boards of directors are expected to establish and monitor the necessary policies and procedures to comply with all FCA regulations. In all other respects, the lending relationship with the Associations is substantially similar to that with our other borrowers.

We make loans to the Associations, which, in turn, make loans to their eligible borrowers. We have senior secured interests in substantially all of the Associations' assets, which extend to the underlying collateral of the Associations' loans to their customers. The total wholesale loans outstanding to our affiliated Associations were $65.8 billion at December 31, 2022. During 2022, $218.3 billion of advances on wholesale loans were made to our affiliated Associations and repayments totaled $213.0 billion.

Our bylaws permit our Board of Directors to set the required level of Association investment in the Bank within a range of 2 to 5 percent of Association borrowings beginning in 2022. In 2022, the required investment level was changed from 4 percent of the five-year trailing average loan volume to 3 percent of the one-year average loan volume. There are no capital sharing agreements between us and our affiliated Associations.

Our affiliated Associations are considered customers and thus operate independently and maintain an arms-length relationship with us, except to the extent that the Farm Credit Act requires us, as the funding bank, to monitor and approve certain activities of these Associations. Accordingly, the financial information of affiliated Associations is not included in our consolidated financial statements. We separately publish certain unaudited combined financial information of the District, including a condensed statement of condition and statement of income, which can be found on our website at www.cobank.com.

Effective January 1, 2021, two of our affiliated Associations, Farm Credit of Western Oklahoma, ACA and AgPreference, ACA merged and are doing business as Farm Credit of Western Oklahoma, ACA.

Effective January 1, 2022, two of our affiliated Associations, Farm Credit East, ACA and Yankee Farm Credit, ACA merged and are doing business as Farm Credit East, ACA.

On May 4, 2022, American AgCredit, ACA entered into a non-binding letter of intent to pursue a merger with Farm Credit of New Mexico, ACA. On October 26, 2022, the boards of directors of each Association approved the agreement and plan of merger. Subject to various additional approvals, the target date for the merger is July 1, 2023, or as soon as practicable thereafter.

Effective November 1, 2022, two of our affiliated Associations, Farm Credit of Western Oklahoma, ACA and Farm Credit of Enid, ACA merged and are doing business as Farm Credit of Western Oklahoma, ACA.

Effective January 1, 2023, two of our affiliated Associations, Northwest Farm Credit Services, ACA and Farm Credit West, ACA merged and are doing business as AgWest, ACA.

Report of Management
CoBank, ACB

March 1, 2023

To our Shareholders:

The consolidated financial statements of CoBank, ACB (CoBank) are prepared by management, which is responsible for their integrity and objectivity, including amounts that must necessarily be based on judgments and estimates. The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America as appropriate in the circumstances. The consolidated financial statements, in the opinion of management, fairly present, in all material respects, the consolidated financial position of CoBank. Other consolidated financial information included in the Annual Report to Shareholders is consistent with that in the financial statements.

To meet its responsibility for reliable consolidated financial information, management depends on accounting and internal control systems which have been designed to provide reasonable, but not absolute, assurance that assets are safeguarded and transactions are properly authorized and recorded. The systems have been designed to recognize that the cost must be related to the benefits derived. To monitor compliance, CoBank's internal audit staff performs audits of the accounting records, reviews accounting systems and internal controls, and recommends improvements as deemed appropriate. CoBank's 2022, 2021 and 2020 consolidated financial statements have been audited by PricewaterhouseCoopers LLP, independent auditors. In addition, our independent auditors have audited our internal control over financial reporting as of December 31, 2022, 2021 and 2020. CoBank is also examined by the Farm Credit Administration (FCA).

The president and chief executive officer, as delegated by the Board of Directors, has overall responsibility for CoBank's system of internal controls and financial reporting, subject to the review of the audit committee of the Board of Directors. The president and chief executive officer reports periodically on those matters to the audit committee. The audit committee consults regularly with management and meets periodically with the independent auditors and internal auditors to review the scope and results of their work. The audit committee reports regularly to the Board of Directors. Both the independent auditors and the internal auditors have direct access to the audit committee, which is composed solely of directors who are not officers or employees of CoBank.

The undersigned certify that this CoBank Annual Report to Shareholders has been reviewed by the undersigned and has been prepared in accordance with all applicable statutory or regulatory requirements and that the information contained herein is true, accurate and complete to the best of their knowledge.

Kevin A. Still	Thomas E. Halverson	David P. Burlage
Chair of the Board	President and Chief Executive Officer	Chief Financial Officer

Management’s Report on Internal Control Over Financial Reporting
CoBank, ACB

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. CoBank’s internal control over financial reporting is a process designed under the supervision of our president and chief executive officer and our chief financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Bank’s financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. As of the end of the Bank’s 2022 fiscal year, management conducted an assessment of the effectiveness of the Bank’s internal control over financial reporting based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, our management concluded that the Bank’s internal control over financial reporting is effective as of December 31, 2022.

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

The effectiveness of the Bank’s internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, independent auditors, as stated in their report appearing on pages 77 through 79, which expresses an unqualified opinion on the effectiveness of the Bank’s internal control over financial reporting as of December 31, 2022. There have been no changes in the Bank’s internal control over financial reporting that occurred during our most recent fiscal quarter (i.e., the fourth quarter of 2022) that have materially affected, or are reasonably likely to materially affect, the Bank’s internal control over financial reporting.

Controls and Procedures
CoBank, ACB

We maintain a system of disclosure controls and procedures. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information disclosed by us in our quarterly and annual reports is accumulated and communicated to our management, including our president and chief executive officer and our chief financial officer, as appropriate, to allow timely decisions to be made regarding disclosure. The president and chief executive officer and the chief financial officer have evaluated our disclosure controls and procedures as of the end of the period covered by this annual report and have concluded that our disclosure controls and procedures are effective as of that date.

We also maintain a system of internal controls. The term "internal controls," as defined by the American Institute of Certified Public Accountants' Codification of Statement on Auditing Standards, AU-C Section 315, means a process effected by those charged with governance, management and other personnel that is designed to provide reasonable assurance about the achievement of the entity's objectives with regard to the reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations. We continually assess the adequacy of our internal controls over financial reporting and enhance our controls in response to internal control assessments and internal and external audit and regulatory recommendations. There have been no significant changes in our internal controls or in other factors that could significantly affect such controls subsequent to the date we carried out our evaluations. In accordance with our internal control procedures, these financial statements were prepared under the oversight of the audit committee of our Board of Directors.

Annual Report to Shareholders Disclosure Information Required by Farm Credit Administration Regulations

CoBank, ACB

(Unaudited)

In accordance with Farm Credit Administration (FCA) regulations, CoBank has prepared this Annual Report to Shareholders for the year ended December 31, 2022, in accordance with all applicable statutory or regulatory requirements.

	Section	Location
Description of Business		
Territory served, eligible borrowers, types of lending activities engaged in, financial services offered, and related Farm Credit organizations.	Notes to Financial Statements......................	Note 1 Note 18
Significant developments within the last 5 years that had or could have a material impact on earnings or interest rates to borrowers, acquisitions or dispositions of material assets, material changes in the manner of conducting business, seasonal characteristics, concentration of assets, and dependence, if any, upon a single customer or a few customers.	Management's Discussion and Analysis ..... Notes to Financial Statements......................	Pages 33 to 76 Pages 86 to 131
Description of Property		
Location of Property CoBank leases its national office building which is located in Greenwood Village, Colorado. CoBank also leases various facilities which are described on the inside back cover of this Annual Report to Shareholders. CoBank leases banking center offices in Atlanta, GA; Austin, TX; Enfield, CT; Fargo, ND; Louisville, KY; Lubbock, TX; Minneapolis, MN; Omaha, NE; Rocklin, CA; Spokane, WA; Sterling, CO; St. Louis, MO; and Wichita, KS. CoBank leases office space in Washington D.C. and Singapore. Farm Credit Leasing Services Corporation leases its headquarters office in Minneapolis, MN, as well as outside sales offices in Atlanta, GA; Enfield, CT; Louisville, KY; Lubbock, TX; Omaha, NE; Rocklin, CA; St. Louis, MO and Wichita, KS, some of which are located in CoBank banking centers. CoBank has a national charter and, as a result, serves customers across rural America. Travel to customer locations may be difficult due to the rural nature of many of our customers' operations. In order to provide the appropriate level of customer contact and to optimize the efficiency and safety of management travel, CoBank utilizes a variety of transportation to serve its customers, including aircraft (both commercial and fractional interest).	Office Locations...	Inside Back Cover
Legal Proceedings and Enforcement Actions	Notes to Financial Statements......................	Note 15
Description of Capital Structure	Notes to Financial Statements......................	Note 6
Description of Liabilities		
Debt Outstanding	Notes to Financial Statements......................	Note 5
Contingent Liabilities	Notes to Financial Statements......................	Note 15
Selected Financial Data for the Five Years Ended December 31, 2022	Five-Year Summary of Selected Consolidated Financial Data	Page 35
Management's Discussion and Analysis of Financial Condition and Results of Operations	Management's Discussion and Analysis	Pages 33 to 76
Directors and Senior Officers		
Directors' Information	Board of Directors Disclosure	Pages 147 to 159
Senior Officers' Information	Senior Officers	Pages 160 to 162
Transactions with Directors and Senior Officers	Notes to Financial Statements......................	Note 13

Annual Report to Shareholders Disclosure Information Required by Farm Credit Administration Regulations

CoBank, ACB

(Unaudited)

	Section	Location
Involvement in Certain Legal Proceedings There were no matters that came to the attention of the Board of Directors or management regarding the involvement of current directors or senior officers in specified legal proceedings which are required to be disclosed.		
Relationship with Independent Auditors There has been no change in independent auditors or no disagreements on any matters of accounting principle or financial statement disclosure during the period.		
Financial Statements Financial Statements and Footnotes	Financial Information..................................	Pages 80 to 131
Report of Management	Report of Management	Page 132
Report of Independent Auditors	Report of Independent Registered Public Accounting Firm	Pages 77 to 79
Aggregate Fees Incurred for Services Rendered by Independent Auditors	Board of Directors Disclosure	Page 149
Credit and Services to Young, Beginning, and Small Farmers and Ranchers and Producers or Harvesters of Aquatic Products	Young, Beginning, and Small Farmers........	Page 178
Unincorporated Business Entities	Unincorporated Business Entities................	Page 179
Regulatory Capital Disclosures	Regulatory Capital Disclosures	Pages 137 to 146
FCL Titling Trust Assets	FCL Titling Trust Assets	Page 180

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Overview

The Farm Credit Administration (FCA) adopted final rules relating to regulatory capital requirements for the Farm Credit System (System) in 2016, which took effect January 1, 2017. The capital regulations include public disclosure requirements set forth in Title 12 of the Code of Federal Regulations parts 628.61 through 628.63.

The following table summarizes the annual disclosure requirements and indicates where each matter is disclosed in this annual report.

Disclosure Requirement	Description	2022 Annual Report Reference
Scope of Application	Corporate entity and consolidated subsidiaries	Page 137
	Description of entity consolidation	Page 137
	Restrictions on transfers of funds or capital	Page 137
Capital Structure	Terms and conditions of capital instruments	Note 6 - Pages 103 to 105; Page 138
	Regulatory capital components	Page 138
Capital Adequacy	Capital adequacy assessment	Page 69; Note 6 - Page 105
	Risk-weighted assets	Page 139
	Regulatory capital ratios	Page 69; Note 6 - Page 105
Capital Buffers	Quantitative disclosures	Pages 69, 139
Credit Risk	Credit risk management and policies	Pages 46 to 52
	Summary of exposures	Page 140
	Geographic distribution	Pages 141 to 142
	Industry distribution	Page 142
	Contractual maturity	Page 143
	Impaired loans and allowance for credit losses	Note 1 - Pages 86 to 87; Note 3 - Pages 91 to 92, 94 to 96
Counterparty Credit Risk-Related Exposures	General description	Pages 51 to 52, 143
	Counterparty exposures	Note 10 - Pages 113 to 120; Page 144
Credit Risk Mitigation	General description	Pages 140, 144
	Exposures with reduced capital requirements	Note 10 - Pages 113 to 120; Pages 44, 50, 51 to 52, 140, 144
Securitization	General description	Pages 51, 145 to 146
	Securitization exposures	Pages 66 to 68, Note 4 - Pages 98 to 100; Note 11 - Pages 121 to 126; Pages 145 to 146
Equities	General description	Pages 138, 146
Interest Rate Risk for Non-Trading Activities	General description	Pages 52 to 56, 146
	Interest rate sensitivity	Page 56

Scope of Application

The disclosures contained herein relate to CoBank, ACB and its wholly-owned subsidiaries, CoBank, FCB and Farm Credit Leasing Services Corporation (FCL), collectively hereinafter referred to as CoBank or the Bank. These entities are also consolidated in our financial statements prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). There are no consolidated entities for which any capital requirement is deducted from the Bank's total regulatory capital nor are there restrictions on transfers of funds or total capital with the entities described above.

In conjunction with other System entities, the Bank jointly owns the following service organizations: the Federal Farm Credit Banks Funding Corporation (Funding Corporation), the FCS Building Association (FCSBA) and the Farm Credit System Association Captive Insurance Company (Captive). The investments in the Funding Corporation and the FCSBA are deducted from capital because only the institution that issued the equities may count the amount as capital. The Bank's investment in the Captive and certain investments in unincorporated business entities are included in risk-weighted assets and are not deducted from any capital component, in accordance with FCA regulations.

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Capital Structure

Common equity tier 1 capital, which includes common stock and retained earnings, is the largest component of the Bank's capital structure. Preferred stock is included in total tier 1 regulatory capital, subject to certain limitations. Refer to Note 6 to the consolidated financial statements in this annual report for information on the terms and conditions of the main features of our common stock and preferred stock. Our allowance for credit losses is included in tier 2 regulatory capital, subject to certain limitations. See Note 1 to the consolidated financial statements in this annual report for a description of our allowance for credit losses. The following table provides a summary of the Bank's regulatory capital components.

Regulatory Capital Components

Three Months Ended December 31, 2022		Average Balance
Common Equity Tier 1 Capital (CET1)		
Common Cooperative Equities:		
Statutory Minimum Purchased Borrower Stock	$	2,455
Other Required Member Purchased Stock		1,007,654
Allocated Equities:		
Qualified Allocated Equities Subject to Retirement		2,872,708
Nonqualified Allocated Equities Subject to Retirement		-
Nonqualified Allocated Equities Not Subject to Retirement		3,368,598
Unallocated Retained Earnings		3,311,853
Paid-In Capital		-
Regulatory Adjustments and Deductions Made to CET1		251,919
Total CET1	$	10,815,187
Tier 1 Capital		
Non-Cumulative Perpetual Preferred Stock	$	1,641,341
Regulatory Adjustments and Deductions Made to Tier 1 Capital		-
Total Additional Tier 1 Capital		1,641,341
Total Tier 1 Capital	$	12,456,528
Tier 2 Capital		
Common Cooperative Equities Not Included in CET1	$	-
Tier 2 Capital Elements:		
Allowance for Credit Losses		800,333
Regulatory Adjustments and Deductions Made to Tier 2 Capital		-
Total Tier 2 Capital	$	800,333
Total Capital	$	13,256,861

A reconciliation of total shareholders' equity in our consolidated balance sheet to total regulatory capital is presented below.

Reconciliation to the December 31, 2022 Consolidated Balance Sheet		End of Period
Total Shareholders' Equity	$	10,224,688
Adjustments to Regulatory Capital:		
Accumulated Other Comprehensive Loss		1,926,675
Regulatory Adjustments and Deductions Made to CET1		(122,103)
Tier 2 Allowance and Reserve		825,032
Total Capital	$	12,854,292 [1]

[1] The amount of total capital presented in the Regulatory Capital Components table above is the three-month average daily balance used in calculating capital ratios, as required by FCA regulations, whereas this amount is the amount outstanding as of December 31, 2022.

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Capital Adequacy and Capital Buffers

The Bank's approach to assessing the adequacy of its capital to support current and future activities is described in "Capital Adequacy and Business Planning" beginning on page 69.

Our risk-adjusted regulatory capital ratios are calculated by dividing the relevant total capital elements (e.g. Total CET1) by risk-weighted assets. The following table presents information on the components of risk-weighted assets included in the calculation of regulatory capital ratios.

Risk-Weighted Assets

Three Months Ended December 31, 2022		Average Balance	
On-Balance Sheet Assets:			
Exposures to Sovereign Entities	$	-	
Exposures to Supranational Entities and Multilateral Development Banks		206,474	
Exposures to Government-Sponsored Enterprises		17,409,392	(1)
Exposures to Depository Institutions, Foreign Banks, and Credit Unions		5,226,382	(2)
Exposures to Public Sector Entities		103,922	
Corporate Exposures, including Borrower Loans and Leases		53,533,490	
Residential Mortgage Exposures		-	
Past Due and Nonaccrual Exposures		265,647	
Securitization Exposures		276,210	
Equity Investment Exposures		99,285	
Other Assets		1,441,749	
Off-Balance Sheet:			
Unfunded Loan Commitments		12,502,608	
Equity Investment Commitments		105,837	
Over-the-Counter Derivatives		110,792	
Cleared Derivative Transactions		902	
Letters of Credit		1,748,999	
Reverse Repurchase Transactions		12	
Unsettled Transactions		43,853	
Total Risk-Weighted Assets Before Additions (Deductions)	$	93,075,554	
Additions:			
Intra-System Equity Investments	$	121,876	
Other Regulatory Adjustments and Additions		(403,647)	
Deductions:			
Regulatory Adjustments and Deductions Made to CET1		251,919	
Regulatory Adjustments and Deductions Made to Additional Tier 1 Capital		-	
Regulatory Adjustments and Deductions Made to Tier 2 Capital		-	
Total Risk-Weighted Assets for Tier 1/Tier 2 Capital	$	93,045,702	(3)

(1) Includes exposures to Farm Credit System entities.

(2) Also includes exposures to other financial institutions that are risk-weighted as exposures to U.S. depository institutions and credit unions.

(3) For purposes of calculating the permanent capital ratio, average risk-weighted assets for the three months ended December 31, 2022 was $92.4 billion.

As shown on page 69 of this annual report, the Bank exceeded all capital requirements as of December 31, 2022 to which it was subject, including applicable capital buffers. Because capital exceeded the buffer requirements, the Bank currently has no limitations on its distributions and discretionary bonus payments. The aggregate amount of eligible retained income was $72.4 million as of December 31, 2022.

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Credit Risk

For discussion related to CoBank's credit risk management and policies see "Credit Risk Management" beginning on page 46 of this annual report. Refer to "Impaired Loans" in Note 1 to the consolidated financial statements in this annual report for qualitative disclosures including the definition of impaired loans and related policies. Refer to "Allowance for Loan Losses and Reserve for Unfunded Commitments" in Note 1 to the consolidated financial statements in this annual report for a description of the methodology used to estimate our allowance for loan losses and our policy for charging-off uncollectible amounts.

The following table summarizes credit exposures related to loans, unfunded loan commitments, investment securities, letters of credit and equity investments. The contractual amount of a commitment to extend credit represents our maximum exposure to credit loss in the event of default by the borrower, if the borrower were to fully draw against the commitment.

Major Credit Exposures - Lending and Investments

Three Months Ended and As of December 31, 2022	Average Balance	End of Period
Loans Outstanding	$ 137,734,114	$ 140,088,466
Unfunded Loan Commitments	50,354,457	51,007,431
Investment Securities	33,176,480	33,096,964
Letters of Credit	2,128,290	2,073,568
Equity Investments Outstanding	99,284	106,232
Equity Investment Commitments	105,837	103,739
Reverse Repurchase Transactions	46,411	53,414

The table below shows derivatives by underlying exposure type, segregated between contracts traded in over-the-counter markets and those cleared through a central clearinghouse. Gross positive fair value represents the credit exposure attributed to derivatives before the mitigating effects of counterparty collateral.

Major Credit Exposures - Derivatives

Three Months Ended and As of December 31, 2022	Average Balance		End of Period	
	Notional Amount	Gross Positive Fair Value	Notional Amount	Gross Positive Fair Value
Over-the-Counter Derivatives:				
Interest Rate Contracts	$ 22,452,424	$ 620,287	$ 23,235,879	$ 609,472
Foreign Exchange Contracts	90,229	244	144,704	121
Total Over-the-Counter Derivatives	$ 22,542,653	$ 620,531	$ 23,380,583	$ 609,593
Cleared Derivatives:				
Interest Rate Contracts	51,157,763	415,234	58,664,136	390,247
Total Derivatives	$ 73,700,416	$ 1,035,765	$ 82,044,719	$ 999,840

The following table illustrates the geographic distribution of our total loan commitments as of December 31, 2022.

Total Lending Portfolio - Geographic Distribution

As of December 31, 2022	Wholesale Loans[1]	Commercial Loans
California	46 %	7 %
Washington	17	1
Connecticut	12	1
Texas	4 [2]	7
Kansas	5	4
Illinois	-	7
Colorado	3	3
Iowa	-	6
Minnesota	-	5
Oklahoma	4	1
Latin America	-	4
Asia	-	3
Florida	-	3
Georgia	-	3
Mississippi	1 [2]	2
Missouri	-	3
Nebraska	-	3
New York	-	3
Ohio	-	3
Pennsylvania	2 [2]	1
South Carolina	2	1
Wisconsin	-	3
Alabama	1 [2]	1
Arkansas	-	2
Europe, Middle East, and Africa	-	2
Indiana	-	2
Michigan	-	2
New Mexico	2	-
North Carolina	-	2
North Dakota	-	2
South Dakota	-	2
Arizona	-	1
Massachusetts	-	1
New Jersey	-	1
Tennessee	-	1
Virginia	-	1
Other	1	6
Total	100 %	100 %

[1] The distribution of wholesale loan commitments to Associations is based on the state in which the Association is headquartered and may not be representative of their underlying loan portfolio.

[2] Includes participation interests in loan commitments to nonaffiliated Associations.

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

The following table illustrates the geographic distribution of our impaired loans as of December 31, 2022.

Impaired Loans - Geographic Distribution

As of December 31, 2022	Share[1]
Florida	24 %
Colorado	16
California	12
New York	11
Kansas	10
Texas	5
Iowa	4
Washington	3
Oregon	2
Minnesota	2
Arkansas	1
Arizona	1
Georgia	1
Nebraska	1
Other	7
Total	100 %

(1) The distribution of impaired loans is based on the state in which the borrower is headquartered and may not be representative of their operations and business activities.

The following table illustrates the primary business/commodity distribution of our total loan commitments as of December 31, 2022.

Total Lending Portfolio - Distribution by Primary Business/Commodity

As of December 31, 2022	Share
Affiliated Associations	40 %
Farm Supply and Grain Marketing	14
Electric Distribution	8
Agricultural Export Finance	5
Nonaffiliated Entities	4
Regulated Utility	4
Generation and Transmission	4
Fruits, Nuts and Vegetables	3
Fish, Livestock and Poultry	2
Forest Products	2
Lease Financing (through FCL)	2
Dairy	2
Water and Waste	1
Local Exchange Carriers	1
Independent Power Producers	1
Cable	1
Competitive Local Telephone Exchange Carriers	1
Wireless	1
Other	4
Total	100 %

The following table presents a summary of the remaining contractual maturity of our loans, unfunded loan commitments, investment securities, letters of credit, derivatives and equity investments at December 31, 2022.

($ in Millions)

Contractual Maturity

As of December 31, 2022	In One Year or Less	One to Five Years	After Five Years	Total
Loans Outstanding	$ 89,086	$ 22,935	$ 28,067	$ 140,088
Unfunded Loan Commitments	31,054	10,985	8,968	51,007
Investment Securities	5,199	11,390	16,508	33,097
Letters of Credit	354	1,271	449	2,074
Derivatives (Notional Amounts)	46,361	23,039	12,645	82,045
Equity Investments Outstanding	26	64	16	106
Equity Investment Commitments	26	62	16	104

Refer to Note 3 to the consolidated financial statements in this annual report for amounts of impaired loans (with or without related allowance for credit losses), loans in nonaccrual status and greater than 90 days past due, loans past due greater than 90 days and still accruing interest, the allowance for credit losses, charge-offs, and changes in components of our allowance for credit losses.

Counterparty Credit Risk

The use of derivative instruments exposes us to counterparty credit risk. Generally, when the fair value of a derivative contract is positive, we are exposed to credit risk. Our counterparty credit risk arising from derivative transactions is managed within credit methodologies and limits approved by the CoBank Loan Committee (CLC). Credit risk limits are established based on potential future exposure. Customer derivative transactions are typically secured through our loan agreements. For non-customer derivatives not cleared through a central clearinghouse, we minimize this risk by diversifying our derivative positions among various financial institution counterparties, using master netting agreements, and requiring collateral with zero thresholds and daily posting to support credit exposures with active counterparties. We evaluate the creditworthiness of each counterparty, establishing individual credit exposure limits, and deal exclusively with derivative counterparties that have an investment grade credit rating from a major credit rating agency. Credit exposure limits are determined using a risk rating methodology established by the CLC. Credit ratings are developed and exposure limits are established no less than annually and reflect our assessment of the creditworthiness of each counterparty. The Bank uses an internal model to determine the potential future exposure of over-the-counter derivatives which is used to measure compliance with established exposure limits. In addition, we monitor counterparty credit default swap spreads and other market-related information which may indicate reduced creditworthiness of a counterparty. Credit default swap spreads are taken into account in establishing counterparty limits.

Our over-the-counter derivative contracts require the Bank or its counterparties to post cash or securities as collateral when the fair values of the derivatives change based on changes in interest rates. The collateral exchanged between parties occurs daily with zero posting thresholds for all counterparties. Likewise, the Bank is required to pledge initial margin and make daily settlement payments related to our cleared derivative transactions. As a result of these derivative contracts, we are exposed to liquidity risk when changes in interest rates require us to post collateral to our counterparties, or make settlement payments for changes in the fair value of cleared derivatives. A downgrade in our creditworthiness would not result in additional collateral requirements for the Bank.

The fair value of collateral assets and liabilities related to derivative contracts is their face value, plus accrued interest, as these instruments are cash balances; therefore, fair value approximates face value.

Refer to Note 10 to the consolidated financial statements in this annual report for information related to interest rate swaps and other derivatives utilized by CoBank including a summary of the fair value of derivative assets and liabilities, collateral held and net unsecured exposure.

(Unaudited) ($ in Thousands, Except as Noted)

Credit Risk Mitigation

CoBank uses various strategies to mitigate credit risk in its lending, leasing, investing and derivatives activities. The disclosures in this section relate solely to credit risk mitigation instruments and activities that reduce regulatory capital requirements, which include certain guarantees in our lending and investment portfolios, and collateral or settlement payments in our derivatives portfolio.

Loans

Our Agricultural Export Finance Division (AEFD) utilizes the U.S. government-sponsored export loan guarantee General Sales Manager (GSM) program for a portion of its export financing which guarantees payment in the event of default by the borrower. We further mitigate our exposure for certain agricultural export financing transactions by purchasing credit enhancement from non-government third parties. Refer to the Operating Segment Financial Review section beginning on page 43 of this annual report for additional discussion related to our AEFD.

As discussed on page 49 of this annual report, our loans to affiliated Associations are collateralized by substantially all of the Association assets. In addition, the earnings, capital and loan loss reserves of the Associations provide additional layers of protection against losses in their respective retail loan portfolios. Lower regulatory capital requirements are commensurate with the lower risk profile associated with our loans to affiliated Associations.

Beginning in April 2020 we began participating in the Paycheck Protection Program (PPP), which is a guaranteed loan program administered by the Small Business Administration. All of our PPP loans were fully repaid and/or forgiven as of January 2022.

Investments

As described in "Credit Risk Related to Investments and Derivatives" beginning on page 51 of this annual report, credit risk in our investment portfolio is mitigated by investing primarily in securities issued or guaranteed by the U.S. government or a government-sponsored enterprise (U.S. Agency). Credit risk in our investment portfolio primarily exists in the 5 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which include certificates of deposit, asset-backed securities (ABS) and corporate bonds of midstream energy and communication companies purchased under our lending authorities. As of December 31, 2022, our ABS and midstream energy and communication corporate bonds collectively totaled $825.3 million of our total investment portfolio, and certificates of deposit, which are transacted with highly-rated commercial banks, collectively totaled $850.0 million. Credit risk in our investment portfolio also arises in our portion of our short-term investments, which include our overnight bank deposits and federal funds sold instruments, which are transacted with highly-rated commercial bank counterparties. We held overnight bank deposits totaling $2.8 billion and federal funds sold instruments totaling $0.5 billion at December 31, 2022. The remainder of our short-term investments include reverse repurchase agreements with the Federal Reserve totaling $9.6 billion at December 31, 2022 and have minimal credit risk. Corporate bonds are risk-weighted based on the corporate counterparty and ABS exposures are captured in the Securitization section below.

The following table summarizes the loan and investment exposures whose capital requirements are reduced as a result of credit risk mitigants.

Loan and Investment Exposures

Three Months Ended December 31, 2022	Average Exposure Amount	Risk Weighted Exposures
Guaranteed Loans	$ 2,206,763	$ -
Loans to Farm Credit System Entities	70,400,238	14,080,048
Investment Securities Issued or Guaranteed by U.S. Government	17,972,741	-
Investment Securities Issued or Guaranteed by a U.S. Agency	16,646,724	3,329,344
Total	$ 107,226,466	$ 17,409,392

(Unaudited) ($ in Thousands, Except as Noted)

Derivatives

As described in Note 10 to the consolidated financial statements in this annual report, transactions with dealers in our over-the-counter derivative portfolio as well as those cleared through a clearinghouse are collateralized or otherwise secured through settlement payments. As a result, at December 31, 2022, we held financial collateral with dealers totaling $559.8 million that was included in calculating risk-weighted assets. Total risk-weighted assets for our over-the-counter derivatives and cleared derivative transactions amounted to $110.8 million and $0.9 million, respectively, for the three-month period ended December 31, 2022.

Securitization

The Bank participates in securitizations as investors through the purchase of MBS and ABS, which are included in our investment portfolio. As of December 31, 2022, CoBank did not retain any resecuritization exposures. The following disclosures relate only to ABS not guaranteed by the U.S. government or a U.S. Agency. The average balance of these non-guaranteed securities was $276.2 million for the three-month period ended December 31, 2022.

We are subject to liquidity risk with respect to these securitization exposures. In volatile market conditions, it could be difficult to sell such investments, if the need arises, and the discounts from face value would likely be significant. In addition, because of the inherent uncertainty of determining the fair value of investments that do not have a readily available market value, the fair value of our investments may differ significantly from the values that would have been used had a ready market existed for the investments.

We monitor the credit and market risk of these exposures under policies established by our Asset and Liability Committee. Such policies, which apply to our total investment portfolio as described above, include regularly assessing, among other factors, changes in interest rates and credit ratings to evaluate potential negative impacts to cash flows expected to be collected from these investment securities.

For our ABS, CoBank has elected to utilize the Gross Up risk-based capital approach as outlined in FCA regulations, which results in our ABS being risk-weighted on an individual security level.

Below is a summary of our securitization exposures held during the three months ended December 31, 2022 by exposure type and categorized by risk-weight band.

Securitization Exposures

Three Months Ended December 31, 2022	Average Exposure Amount	Risk Weighted Asset (Under Gross Up Approach)
Asset-Backed Securities	$ 276,210	$ 276,210
Total	$ 276,210	$ 276,210

Securitization Risk-Weight Bands

Three Months Ended December 31, 2022	Average Exposure Amount	Risk Weighted Asset (Under Gross Up Approach)
Gross-Up Risk-Weight Bands:		
100% - 125%	$ 276,210	$ 276,210
>125% and <1,250%	-	-
1,250%	-	-
Total	$ 276,210	$ 276,210

For the three-month period ended December 31, 2022, we did not hold any off-balance sheet securitization exposures nor were any securitization exposures deducted from capital.

Regulatory Capital Disclosures

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(Unaudited) ($ in Thousands, Except as Noted)

Refer to "Liquidity and Capital Resources" beginning on page 66 for additional information related to purchases and sales of securitization exposures. Refer to Note 4 to the consolidated financial statements in this annual report for the amortized cost, unrealized gains (losses) and fair value of MBS and ABS held in our investment portfolio. In addition, Note 11 to the consolidated financial statements in this annual report describes the methods and assumptions, including any changes as applicable, applied in valuing our MBS and ABS.

Equities

The Bank has certain exposure to equity investments. We make investments and are a limited partner in certain Rural Business Investment Companies (RBICs). These RBICs focus on small and middle market companies that create jobs and promote commerce in rural America. CoBank also holds investments in various unincorporated business entities (UBEs), as defined by FCA regulation. We hold these investments to acquire and manage unusual or complex collateral associated with loan workouts as well as to make mission-related investments. Our investments in RBICs and UBEs are not publicly traded and are accounted for under the equity method. We also hold an equity investment as a result of the bankruptcy of a former customer which is accounted for at cost less any impairment as there is no readily determinable fair value. There have been no sales or liquidations of these investments during the three months ended December 31, 2022.

Interest Rate Risk

Interest rate risk, also referred to as market risk, is the risk that changes in interest rates may adversely affect operating results and financial condition. Refer to "Market Risk Management" beginning on page 52 of this annual report for a description of our primary interest rate risks and strategies used to mitigate those risks. The impact of interest rate changes on net interest income and the market value of equity are summarized in the tables found on page 56 of this annual report.

Board of Directors Disclosure as of December 31, 2022

CoBank, ACB

Directors

At year-end 2022, CoBank had a total of 17 seated directors, comprised of 13 directors elected by customers from six different geographic regions, two outside directors (independent of any customer or Farm Credit System affiliation) and two appointed directors (customer affiliation permitted) to complement the expertise of the customer-elected Board members. There was one vacant seat on the Board due to the resignation of elected director Julie A. Shiflett in June 2022.

Director terms run for four years. Employees of Farm Credit System institutions, including CoBank, cannot serve on CoBank's Board of Directors within one year of employment.

Director Independence

The Board must be composed at all times of at least 75 percent of directors who are deemed to be independent. The Board has adopted standards to assist it in making the annual affirmative determination of each director's independence status. A director will be considered "independent" if he or she meets the 14 criteria for independence set forth by the Board, which were established based upon leading industry practice and, in part, the listing standards of the New York Stock Exchange. For example, the loans from CoBank to an affiliated Association or Title III customer, as defined by the Farm Credit Act, where a CoBank director is also a director, must not comprise more than 15 percent of the total loans of CoBank. In addition, the Board has made a determination as to each independent director that no relationship exists which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the director's responsibilities. In making these determinations, the Board reviewed and discussed information provided by the directors and by CoBank with regard to each director's business and personal activities as they may relate to CoBank and CoBank's management. As of December 31, 2022, all 17 directors were considered to be independent.

Information About Committees of the Board of Directors

The standing Board committees consist of the following: an Audit Committee, a Compensation and Human Resources Committee, an Executive Committee, a Governance Committee and a Risk Committee. The Board has adopted written charters for each of these committees. The full text of each charter is available on our website at www.cobank.com.

All standing Board committees report on their meetings at the regular meeting of the full Board. Minutes of each committee meeting are signed by the committee chair and recording secretary, or another individual acting in their place at the meeting.

In 2022, the Board of Directors held a total of ten meetings and standing committees of the Board of Directors held a total of 32 meetings. The primary responsibilities of each committee are described on the following pages.

Board of Directors Disclosure as of December 31, 2022
CoBank, ACB

Standing Committees

Audit Committee

The Audit Committee members are appointed by the Board chair in consultation with the Board officers and committee chairs. The Audit Committee is governed by a formal charter and chaired by one of the Board's outside directors. All members of the Audit Committee are independent of management of the Bank and any other System entity. During 2022, the Audit Committee met a total of six times, including regular meetings in executive session with the head of the Internal Audit Division, the head of the Asset Review Division, and the Bank's independent auditors. The Audit Committee also met in joint session with the Risk Committee a total of four times during 2022 to discuss and review items of common interest. The Audit Committee reviews and approves the quarterly and annual financial statements.

During 2022, Michael S. Brown served as Chair of the Audit Committee. The Board of Directors determined that Mr. Brown had the qualifications and experience necessary to serve as the Audit Committee "financial expert," as defined by the rules of the Securities and Exchange Commission and the FCA, and he was so designated. The Board also designated Gary A. Miller as a "financial expert" during 2022.

The primary purpose of the Audit Committee is to assist the Board in fulfilling its oversight responsibilities by carrying out the following responsibilities:

(1) Overseeing management's conduct of the Bank's financial reporting process and systems of internal accounting and financial controls;

(2) Monitoring the independence and performance of the Bank's internal audit and asset review functions, the risk assessment process, and the independent auditors;

(3) Ensuring the Bank's compliance with applicable legal and regulatory requirements;

(4) Providing an avenue of communication among the independent auditors, management and the Board; and

(5) Performing those functions on behalf of, and serving as the Audit Committee for, the Bank's wholly-owned subsidiary, Farm Credit Leasing Services Corporation ("FCL").

Management has the primary responsibility for the consolidated financial statements and the financial reporting process, including the system of internal controls. The Audit Committee oversees the Bank's independent auditors, systems of internal accounting and financial controls, and financial reporting process on behalf of the Board of Directors. In this regard, the Audit Committee helps to ensure independence of the Bank's independent auditors, the integrity of management and the adequacy of disclosure to shareholders. The Audit Committee has unrestricted access to representatives of the Internal Audit Division, independent auditors and financial management.

The Audit Committee preapproves all audit and audit-related services and permitted non-audit services (including the fees and terms thereof) to be performed for the Bank by its independent auditors, as negotiated by management.

The Audit Committee reviewed the audited consolidated financial statements in the Annual Report for the year ended December 31, 2022 with management and the Bank's independent auditors. The independent auditors are responsible for expressing an opinion on the conformity of the Bank's audited consolidated financial statements with accounting principles generally accepted in the United States of America, including a discussion of the quality of the Bank's accounting principles, the reasonableness of significant judgments, the clarity of disclosures in the consolidated financial statements and the adequacy of internal controls. The Audit Committee discussed with the independent auditors the results of the 2022 audit and all other matters required to be discussed by Statements on Auditing Standards. In addition, the Audit Committee received, reviewed and discussed the written disclosures from the independent auditors regarding their independence. Based on the review and discussions described above, the Audit Committee recommended to the Board of Directors that the audited consolidated financial statements be included in the Bank's Annual Report for the year ended December 31, 2022 and for filing with the FCA.

Board of Directors Disclosure as of December 31, 2022
CoBank, ACB

Aggregate fees incurred by the Bank for services rendered by its independent auditors, PricewaterhouseCoopers LLP, for the years ended December 31, 2022 and 2021 were as follows:

Year Ended December 31,	2022	2021
Audit	**$ 2,118,000**	$ 2,025,000
Audit-related	**72,500**	100,000
Tax	**85,000**	110,000
All Other	**345,700**	64,718
Total	**$ 2,621,200**	$ 2,299,718

Audit fees were for the annual audit of the consolidated financial statements for 2022 and 2021.

Audit-related fees for 2022 and 2021 included fees for preferred stock offerings.

Tax fees for 2022 and 2021 related to asset depreciation services.

All other fees for 2022 and 2021 primarily included pre-implementation services associated with the Current Expected Credit Losses accounting standard. Also included in all other fees for 2022 and 2021 was our annual subscription to accounting research tools.

Compensation and Human Resources Committee

The Compensation and Human Resources Committee members are appointed by the Board chair in consultation with the Board officers and committee chairs. All members of the Compensation and Human Resources Committee are independent of management. The committee is primarily responsible for representing the Board in matters related to human capital, and total reward programs for the Bank, including salary, incentive and benefits programs, and in facilitating the terms of employment, compensation and evaluation of and succession planning for the Chief Executive Officer (CEO). The Compensation and Human Resources Committee has responsibility for monitoring succession planning for other senior leaders. The Compensation and Human Resources Committee also reviews the results of the Bank's affirmative action program and diversity, equity and inclusion initiatives. The Compensation and Human Resources Committee also has responsibility, in consultation with the Governance Committee, in matters related to the Bank's director compensation program and philosophy.

Executive Committee

The Executive Committee is comprised of the Board chair and two Board vice chairs. The committee is primarily responsible for developing for Board consideration recommendations surrounding the design and implementation of the Bank's strategic plan. It acts on behalf of the Board between Board meetings when necessary. The committee reviews the Bank's annual business and financial plan and recommends such plan for approval by the Board. The committee also provides advice and counsel to the Board and management on policy matters related to capital and finance, and recommends to the Governance Committee capital bylaws and amendments for approval by the Board.

Governance Committee

The Governance Committee members are appointed by the Board chair in consultation with the Board officers and committee chairs. The committee is primarily responsible for monitoring and recommending for Board consideration corporate governance processes and structures that are consistent with leading practices for boards and board committees. The committee reviews and recommends special compensation for Board members, if any, due to exceptional demands placed on the time of Board members. The committee reviews and directs the annual Board self-evaluation and a periodic director peer evaluation. The committee also oversees the Bank's director nomination process, which is conducted by an independent Nominating Committee (see page 150), and director election process. In addition, the committee annually assesses the needs of the Board – taking into account the experience and background of current directors – and also recommends the appointment and reappointment of outside and appointed directors to the full Board.

Risk Committee

The Risk Committee members are appointed by the Board chair in consultation with the Board officers and committee chairs. The committee is primarily responsible for overseeing the enterprise risk management practices of the Bank, including management's ability to assess and manage the Bank's credit, market, interest rate, liquidity, operational, technology, strategic and reputation, and legal, regulatory and compliance risks. The committee also provides an open avenue of communication between management and the Board in order to effectively manage risks.

Other Committees

Nominating Committee

The Nominating Committee for 2022 consisted of 20 customer-owner representatives and two retired CoBank directors, all of whom were elected by the Bank's shareholders. No member of the Board or management served on the Nominating Committee. The Bank uses an independent Nominating Committee which is charged with the responsibility to identify qualified candidates for Board membership and to review director nominations, helping to ensure that the Bank continues to attract a highly qualified and diverse Board. The Nominating Committee seeks candidates who are recognized leaders and who fulfill specific needs for skill set, industry knowledge, and geographic and other forms of diversity on the Board. Customers are encouraged to submit resumes of candidates for elected positions. The Nominating Committee strives to nominate at least two candidates for each position up for election. Interested candidates who participated in the Nominating Committee process but were not nominated by the Nominating Committee may petition to run for election following the conclusion of the Nominating Committee's work. A nominee must not have reached age 70 on or prior to the date the term of office is to begin and must meet other eligibility requirements established by Bank bylaws and federal regulations.

Board of Directors Disclosure as of December 31, 2022

CoBank, ACB

The following represents certain information regarding the directors as of December 31, 2022, including business experience during the past five years. The terms of directors are scheduled to expire as of December 31 of the years indicated.

1 – Audit Committee
2 – Compensation and Human Resources Committee
3 – Executive Committee
4 – Governance Committee
5 – Risk Committee
6 – Audit Committee Chair
7 – Compensation and Human Resources Committee Chair
8 – Executive Committee Chair
9 – Governance Committee Chair
10 – Risk Committee Chair

Name	Term Expires	Principal Occupation and Other Business Affiliations
Duane R. Anderson [4] Age: 58 Year Service Began: 2021	2024	**Principal Occupation:** Operations Lead: J-Six Enterprises, L.L.C., a diversified farming, milling and consolidated cattle and hog operation, Seneca, KS; Former Chief Operating Officer: Sioux Steel Company, manufacturer of agricultural buildings and equipment, Sioux Falls, SD (September 2021 - December 2021); Former Officer: McBee Farms, L.C., Buckner, MO, and McBee Properties, L.C., Blue Springs, MO, asset holding companies, and their affiliated entities (April 2021 - June 2021); Former President and Chief Executive Officer: Ag Partners Cooperative, Inc., an agricultural cooperative, Seneca, KS (April 2020 - January 2021); Former Chief Executive Officer: The Great Bend Cooperative Association, an agricultural cooperative, Great Bend, KS (October 2018 - April 2020); Former Chief Financial Officer: Van Beek Natural Science, LLC, manufacturer of biotechnology and nutraceuticals, Orange City, IA (October 2017 - September 2018).
Matthew W. Beaton [4] Age: 55 Year Service Began: 2022	2025	**Principal Occupation:** Owner/Officer: Beaton's, Inc., cranberry farming, Rochester, MA; Owner/Officer: Sure-Cran Services, Inc., custom agricultural services, Wareham, MA. **Other Business Affiliations:** Director: Cape Cod Cranberry Growers Association, industry trade association, Carver, MA; Director/Owner: Eagle Holt Co., Inc., cranberry farming, Wareham, MA; Director: Ocean Spray Cranberries, Inc., cranberry marketing cooperative, Lakeville/Middleboro, MA; Owner: Sippican Mills, LLC, real estate holdings, Rochester, MA.

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Name	Term Expires	Principal Occupation and Other Business Affiliations
Robert M. Behr [1] Age: 68 Year Service Began: 2013	2024	**Principal Occupation:** Chief Executive Officer: Florida's Natural Growers, Inc., processing and marketing Florida's Natural brand citrus juices, Lake Wales, FL. **Other Business Affiliations:** Owner: Behr Citrus Management Inc., a citrus grove, Lakeland, FL; Owner: CPI 3034 LLC, a citrus grove, Winter Haven, FL; Director: CUPS Co-op I, Inc., a citrus producer, Bartow, FL; Director: CUPS Co-op II, Inc., a citrus producer, Bartow, FL; Director: Farm Credit of Central Florida, ACA, an agricultural credit association, Lakeland, FL; Chair: Florida's Natural Growers Foundation, Inc., a nonprofit organization, Lake Wales, FL; Vice Chair: Graduate Institute of Cooperative Leadership, a non-profit organization providing executive education to cooperative leaders, Columbia, MO; Owner: MBN Property, a citrus grove, LaBelle, FL; Owner: Resurrection Grove LLC, a citrus grove, Winter Haven, FL; Director: Winter Haven Citrus Growers Association, citrus processing and marketing, Tampa, FL.
Michael S. Brown [1, 6] Age: 64 Year Service Began: 2017	2024	**Principal Occupation:** Former Managing Director, Global Head of Multinational Coverage: JPMorgan Chase, N.A., a commercial bank, London, England (retired in June 2013). **Other Business Affiliations:** Owner/Manager: Bayswater LLC, a property management company, San Diego, CA.
Russell G. Brown [1] Age: 64 Year Service Began: 2017	2024	**Principal Occupation:** Former Market President (Northern Neck Region): Atlantic Union Bank, a regional bank, Warsaw, VA (retired in March 2022). **Other Business Affiliations:** Owner: Cobham Hall Farm, grain and timber farm, Warsaw, VA; Alternate Director: The Farm Credit Council, a national trade association, Washington, D.C.; Vice Chair: Northern Neck Electric Cooperative, a rural electric distribution cooperative, Warsaw, VA; Chair: Richmond County Industrial Development Authority (IDA), an economic development organization, Warsaw, VA; Director: VA-MD-DE Association of Electric Cooperatives, a trade association, Richmond, VA; Chair: VA-MD-DE Association of Electric Cooperatives Educational Scholarship Foundation, a nonprofit organization, Richmond, VA.

Board of Directors Disclosure as of December 31, 2022

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Name	Term Expires	Principal Occupation and Other Business Affiliations
William M. Farrow, III [4] Age: 67 Year Service Began: 2007	2026	**Principal Occupation:** Former Director, President and Chief Executive Officer: Urban Partnership Bank, a commercial bank, Chicago, IL (retired in December 2017); Owner: Winston and Wolfe LLC, a technology development and advisory company, Chicago, IL. **Other Business Affiliations:** Advisor: Cedar Street Asset Management LLC, an asset management firm, Chicago, IL; Director: Cboe Global Markets, Inc., an options and volatility trading resource, Chicago, IL; Director: NorthShore Edward Elmhurst Health System, a hospital system, Evanston, IL; Director: WEC Energy Group, an electric and natural gas distribution company, Milwaukee, WI.
David J. Kragnes [4, 9] Age: 70 Year Service Began: 2009	2024	**Principal Occupation:** Former Owner/Operator: David Kragnes Farm, a corn and bean row crop farming operation, Felton, MN (retired in October 2022). **Other Business Affiliations:** Director: The Farm Credit Council, a national trade association, Washington, D.C.; Advisory Board Member: Quentin Burdick Center for Cooperatives, a cooperative education center, Fargo, ND.
Michael W. Marley [5] Age: 60 Year Service Began: 2020	2023	**Principal Occupation:** Owner: Corrales Dairy, LLC, a dairy farm, Roswell, NM; Owner: Marley Farms, Ltd., an irrigated farming operation, Roswell, NM. **Other Business Affiliations:** Owner/Managing Member: Berken Energy, LLC, a renewable energy company, Colorado Springs, CO; Owner: Corrales Farm, LLC, an irrigated farm and dairy facility, Roswell, NM; Southwest Council Member: Dairy Farmers of America, a milk cooperative, Dallas, TX; Director: Dairy MAX, a non-profit dairy council, Grand Prairie, TX; Director: Gandy Marley, Inc., an oil field disposal service, Roswell, NM; Owner: Marley Ranches, Ltd., a ranching operation, Roswell, NM; Owner: SAP, LLC, a royalty override, Roswell, NM.
Jon E. Marthedal [3, 5] First Vice Chair Age: 66 Year Service Began: 2013	2025	**Principal Occupation:** Owner/Operator: Marthedal Farms, a grape, raisin, blueberry and almond farming operation, Fresno, CA; Former Owner/Operator: Keystone Blue Farms, LLC, a blueberry farming operation, Fresno, CA; (retired December 2020); Owner/Officer: Marthedal Enterprises Inc., a provider of farm management and custom agriculture services, Fresno, CA. **Other Business Affiliations:** Chair: The Farm Credit Council, a national trade association, Washington, D.C.; President: California Blueberry Association, a state trade organization, Fresno, CA; Director: California Blueberry Commission, a state commission, Fresno, CA; Vice Chair: Raisin Administrative Committee, a federal marketing order, Fresno, CA.

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Name	Term Expires	Principal Occupation and Other Business Affiliations
Robert N. McLennan[5] Age: 52 Year Service Began: 2022	2025	**Principal Occupation:** Officer: Minnkota Power Cooperative, Inc., an electric generation and transmission cooperative, Grand Forks, ND. General Manager: Square Butte Electric Cooperative, an electric generation cooperative, Grand Forks, ND. **Other Business Affiliations:** Director: BNI Energy/BNI Coal, an energy service company, Bismarck, ND; Director: Energy and Environmental Research Development Foundation (EERC), promoting technology development, commercialization and intellectual property protection, Grand Forks, ND; Director: Grand Forks Economic Development Corporation, economic development, Grand Forks, ND; Director: Lignite Energy Council, industry trade association, Bismarck, ND; Director: National Rural Electric Cooperative Association, National Resolutions Committee, industry trade association, Arlington, VA; Director: North Dakota State University, Quentin Burdick Center for Cooperatives, cooperative education center, Fargo, ND; Director: University of Jamestown, educational institution, Jamestown, ND; Director: US Bank, Community Board, providing input and guidance to local US Bank operations, Grand Forks, ND.
Gary A. Miller[1] Age: 62 Year Service Began: 2020 Also Served: 2006-2017	2023	**Principal Occupation:** President and Chief Executive Officer: GreyStone Power Corporation, an electric distribution cooperative, Douglasville, GA. **Other Business Affiliations:** Director: Development Authority of Douglas County, economic development organization, Douglasville, GA; Chair: Elevate Douglas, an economic development organization, Douglasville, GA; Alternate Director: Georgia Electric Membership Corporation, statewide trade organization, Tucker, GA; Advisory Board Alternate Director: Georgia Transmission Corporation, a power transmission cooperative, Tucker, GA; Chair: GRESCO Utility Supply, Inc., an electric material supplier, Smarr, GA; Director: Hospital Authority for Douglas County, oversight body of hospital system, Douglasville, GA; Advisory Board Alternate Director: Oglethorpe Power Corporation, power generation cooperative, Tucker, GA; Director: WellStar Foundation, a supporting organization to WellStar Health System, Marietta, GA.

Board of Directors Disclosure as of December 31, 2022

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Name	Term Expires	Principal Occupation and Other Business Affiliations
Catherine Moyer [2, 7] Age: 47 Year Service Began: 2010	2026	**Principal Occupation:** Chief Executive Officer and General Manager: The Pioneer Telephone Association, Inc. (d/b/a Pioneer Communications), a telecommunications provider, Ulysses, KS; Chief Executive Officer: High Plains Telecommunications, Inc., a telecommunications provider, Ulysses, KS; Managing Director: PGB Fiber LLC, a telecommunications provider, Ulysses, KS. **Other Business Affiliations:** Director: The Farm Credit Council, a national trade association, Washington, D.C.; Chair: Kansas Lottery Commission, providing oversight of Kansas lottery and games, Topeka, KS; Director: Rural Trust Insurance Company, a provider of property and casualty insurance to small telecommunications providers, Greenbelt, MD; Chair: Telcom Insurance Group, a provider of property and casualty coverage to small telecommunications providers, Greenbelt, MD.
David S. Phippen [2] Age: 72 Year Service Began: 2019 Also Served: 2012-2015	2022	**Principal Occupation:** Owner: Phippen Brothers, LP, an almond farm, Ripon, CA; Owner: Phippen/Gatzman LP, an almond farm, Manteca, CA; Owner: Primo Nut Company, LP, an almond processing and sales organization, Manteca, CA; Owner: Tap Land Company, LP, an almond farm, Manteca, CA; Owner: Travaille & Phippen, Inc., an almond farm, Manteca, CA; Owner: Tri-P, Inc., an almond farm, Manteca, CA; Owner: Xcel Shelling, LP, an almond shelling organization, Manteca, CA. **Other Business Affiliations:** Director: San Joaquin County Farm Bureau, a farm trade association, Stockton, CA.
Scheherazade S. Rehman [5] Age: 59 Year Service Began: 2019	2026	**Principal Occupation:** Professor: The George Washington University, an educational institution, Washington, D.C. **Other Business Affiliations:** President and Managing Partner: International Consultants Group, a consulting firm, Washington, D.C.; Director: International Trade and Finance Association, an academic/professional association, Winnsboro, SC; Chair: The George Washington University School of Business Deans Council, an educational institution, Washington, D.C.

Board of Directors Disclosure as of December 31, 2022
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Kevin A. Still [2, 3, 8] Chair Age: 65 Year Service Began: 2002	2026	**Principal Occupation:** President and Chief Executive Officer: Co-Alliance Cooperative, Inc., a cooperative supplying energy, agronomy and animal nutrition, producing swine and marketing grain, Avon, IN; Former Chief Executive Officer and Treasurer: Excel Co-op, Inc., Frontier Co-op, Inc., IMPACT Co-op, Inc., LaPorte County Farm Bureau Cooperative Association, and Midland Co-op, Inc., agricultural retail cooperatives, Avon, IN (entities consolidated into Co-Alliance Cooperative, Inc. as of February 2021); **Other Business Affiliations:** Director: Agensan, a captive insurance company, Avon, IN; Officer: Alliance Feed, LLC, an agricultural retail coop, Avon, IN; Vice Chair: Endeavor Ag and Energy LLP, a propane and agronomy organization, Avon, IN; President: Northwind Pork, LLC, a pork producing operation, Kewanna, IN; President: NWP Sows, LLC, a pig production operation, Avon, IN; Owner/President: Still Farms, LLC, a grain farm, Galesburg, IL; President and Chief Executive Officer: United Energy, LLC, an agricultural retail coop, Richmond, IN; Director: Wholestone Farms II, LLC, a food company, Pipestone, MN.
Edgar A. Terry [5, 10] Age: 63 Year Service Began: 2016	2023	**Principal Occupation:** Owner/President: Terry Farms, Inc., a vegetable and strawberry farming operation, Ventura, CA; Owner/Limited Partner: Ag. Center LTD, a real estate company, Ventura, CA; Owner/Officer: Amigos Fuerza, Inc., a provider of farm labor contracting, Ventura, CA; Owner/Limited Partner: Central AP, LLP, farmland real estate, Ventura, CA; Owner/Partner: JJE, LLC, farmland real estate, Ventura, CA; Owner/Officer: Moonridge Management, Inc., a provider of back office and HR consulting, Ventura, CA; Owner/Vice President: Rancho Adobe, Inc., farmland real estate, Ventura, CA; Owner/President: Willal, Inc., a sales and marketing company, Ventura, CA; Senior Adjunct Professor: California Lutheran University, an educational institution, Thousand Oaks, CA. **Other Business Affiliations:** Advisory Board Chair: Center for Economic Research and Forecasting, an economic forecasting and fundraising advisory board, Thousand Oaks, CA; Director: Farm Credit System Audit Committee, providing financial audit oversight, Jersey City, NJ; Director: Federal Farm Credit Banks Funding Corporation, the issuer of Systemwide debt, Jersey City, NJ; Director: Limoneira Company, a publicly held agribusiness and real estate development Company, Santa Paula, CA; Director: Ventura Chamber of Commerce, a nonprofit organization, Ventura, CA; Chair: Ventura County Fairgrounds Foundation, a nonprofit organization, Ventura, CA.

Board of Directors Disclosure as of December 31, 2022
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Brandon J. Wittman [2,3]	2026	**Principal Occupation:**
Second Vice Chair		Chief Executive Officer and General Manager: Yellowstone Valley Electric Cooperative, Inc., an electric distribution cooperative, Huntley, MT.
Age: 52		**Other Business Affiliations:**
Year Service Began: 2018		Director: The Farm Credit Council, a national trade association, Washington, D.C.;
		Customer Advisory Committee Member: Border States Electric, a utility material supply service provider, Bismarck, ND;
		Manager's Advisory Committee Member: Central Montana Electric Power Cooperative, a wholesale power supplier, Great Falls, MT;
		Director: Montana Electric Cooperatives Association, an electric cooperatives statewide association, Great Falls, MT;
		Director: Montana Land Information Advisory Council, advises the State Librarian and the State Library Commission, Helena, MT.

Board of Directors Disclosure as of December 31, 2022
CoBank, ACB

Compensation of Directors

The CoBank Board's director compensation program, developed in consultation with Pay Governance LLC, a third-party compensation consultant, provides a compensation package that the Board believes is fair and reasonable and enables the recruitment and retention of individuals to the Bank's Board with the requisite expertise and experience to represent shareholder interests. The program is based on the Bank's director compensation philosophy, which utilizes a benchmarking approach and methodology based on data about market levels of director compensation. The program provides for compensation in the form of cash retainers to be paid in quarterly installments, and directors may elect to defer payment of all or part of their director compensation in accordance with agreements and applicable law. The director compensation program covers attendance at all Board and committee meetings, customer and trade association meetings and special assignments. CoBank's director compensation program also allows special compensation in excess of the retainers described below only in the event that exceptional circumstances or demands are placed on the time of Board members, and only if approved by the Board. Directors' compensation is reduced by $5,000 for an unexcused absence at any regular Board meeting or Board planning meeting or any other required meeting as determined by the Board. The director compensation philosophy and program are reviewed by the Compensation and Human Resources Committee which recommends adjustments to retainers and fees, when warranted. Special compensation for Board members, if any, due to exceptional demands placed on the time of Board members is recommended by the Governance Committee. In addition, the Governance Committee provides guidance to the Board chair in determining whether to excuse an absence or reduce a director's compensation for a missed meeting. The Board approves changes to compensation and special compensation, if any.

For 2022, director compensation was comprised of a cash retainer for all Board members in the annual amount of $120,000, plus an additional retainer paid to Board officers and committee chairs. The Board chair received a $40,000 retainer while each of the Board vice chairs received a $20,000 retainer. The Audit Committee chair received a $25,000 retainer, the Compensation and Human Resources Committee chair received a $17,500 retainer, while the Risk Committee chair and the Governance Committee chair each received a $15,000 retainer. The Executive Committee chair received a retainer as Board chair and did not receive an additional retainer for serving as a committee chair. The Board did not approve any adjustments for unexcused absences in 2022. Additional information for each director who served during 2022 is provided in the following table.

Current CoBank policy regarding reimbursements for travel, subsistence and other related expenses states that for meetings designated by the Board and approved special assignments, Board members shall be reimbursed for reasonable travel and related expenses that are necessary and that support CoBank's business interests. As may be appropriate, CoBank may share in the reimbursement of expenses with other organizations. A copy of CoBank's policy is available to shareholders upon request to the Bank's Office of General Counsel. The aggregate amount of reimbursement for travel, subsistence and other related expenses for all directors as a group increased to $447,185 for the year ended December 31, 2022 (as travel returned to pre-pandemic levels) from $286,270 and $122,546 for the years ended December 31, 2021 and 2020, respectively.

Board of Directors Disclosure as of December 31, 2022

CoBank, ACB

The following table presents the number of days served at Board meetings and other official CoBank activities, and compensation paid to each director for the year ended December 31, 2022.

Name of Director	Number of Days Served at Board Meetings	Number of Days Served in Other Official CoBank Activities	Total Compensation Paid During 2022
Duane R. Anderson	19	26	$120,000
Matthew W. Beaton	18	25	$120,000
Robert M. Behr	19	16	$120,000
Michael S. Brown (1)	19	33	$145,000
Russell G. Brown	18	49	$120,000
William M. Farrow, III	18	16	$120,000
David J. Kragnes (2) (3)	20	14	$135,000
Michael W. Marley	18	17	$120,000
Jon E. Marthedal (2) (4)	19	28	$140,000
Robert N. McLennan	19	14	$120,000
Gary A. Miller	19	31	$120,000
Catherine Moyer (2) (5)	19	22	$137,500
David S. Phippen	18	16	$120,000
Scheherazade S. Rehman	17	10	$120,000
Julie A. Shiflett (6)	9	8	$60,000
Kevin A. Still (7)	20	44	$160,000
Edgar A. Terry (2) (8)	19	18	$135,000
Brandon J. Wittman (2) (9)	19	35	$140,000
Total	327	422	$2,252,500

(1) Mr. Brown received a $25,000 retainer for service as the Chair of the Audit Committee.

(2) In 2022, these directors represented CoBank's interests by serving on the boards of various trade groups and other organizations important to the Bank. Days of service related to these activities and compensation received (if any) are not included in this report.

(3) Mr. Kragnes received a $15,000 retainer for service as the Chair of the Governance Committee.

(4) Mr. Marthedal received a $20,000 retainer for service as the First Vice Chair of the Board.

(5) Ms. Moyer received a $17,500 retainer for service as the Chair of the Compensation and Human Resources Committee.

(6) Ms. Shiflett served on the Board for a portion of the year. Ms. Shiflett resigned from the Board in June 2022.

(7) Mr. Still received a $40,000 retainer for service as the Chair of the Board.

(8) Mr. Terry received a $15,000 retainer for service as the Chair of the Risk Committee.

(9) Mr. Wittman received a $20,000 retainer for service as the Second Vice Chair of the Board.

Senior Officers as of December 31, 2022

CoBank, ACB

Thomas E. Halverson,
President and Chief Executive Officer

Mr. Halverson, 58, was appointed president effective March 6, 2017 and has served as chief executive officer since January 1, 2017. Mr. Halverson is responsible for implementing the Bank's strategic and business direction as set by the Board of Directors. Prior to his current position, Mr. Halverson was CoBank's chief banking officer. Before joining CoBank in July 2013, Mr. Halverson spent more than 15 years with Goldman Sachs, most recently as managing director and chief of staff for Goldman Sachs Bank USA. Prior to that he served in a variety of executive positions at the firm, including head of credit risk management for Goldman Sachs in Asia ex-Japan. Before joining Goldman Sachs, Mr. Halverson served as principal credit officer for country risk at the European Bank for Reconstruction and Development. Mr. Halverson serves on the Board of Directors of the Federal Farm Credit Banks Funding Corporation and is Chairman of the National Council of Farmer Cooperatives. He also serves as an advisor to the Board of the Innovation Center for U.S. Dairy and is a member of the President's Planning Committee (PPC) of the Farm Credit System and Chairman of the PPC Business Practices Committee.

Deboleena Bose,
Chief Human Resources Officer

Ms. Bose, 51, was appointed as chief human resources officer effective August 17, 2020. Ms. Bose is responsible for designing and implementing the Bank's human capital plan to attract, retain and develop talent, through a framework of evolving programs to create an inclusive workplace where a diverse workforce will thrive. She is a member of CoBank's Management Executive Committee and supports the board's Compensation and Human Resources committee. Prior to joining CoBank, Ms. Bose served as Vice President of Human Resources for Michigan-based Whirlpool Corporation. Previously, Ms. Bose spent over two decades with General Electric in various positions in Asia, Europe and North America, including six years leading human resources for the global onshore wind business of General Electric's renewable energy portfolio.

David P. Burlage,
Chief Financial Officer

Mr. Burlage, 59, was appointed chief financial officer effective November 16, 2009. Mr. Burlage is responsible for directing the Bank's financial affairs and developing its overall financial position. He oversees the treasury, financial planning and analysis, capital planning, accounting, tax and reporting functions of the Bank. Prior to his current position, Mr. Burlage served as senior vice president of the Finance Division. Mr. Burlage began his career as an auditor with Arthur Andersen & Co. He has over 37 years of financial experience. He is a licensed CPA in the State of Ohio and a member of the American Institute of Certified Public Accountants.

Timothy M. Curran,
Chief Risk Officer

Mr. Curran, 56, was appointed chief risk officer effective June 1, 2017. Mr. Curran is responsible for the Bank's risk management framework, including significant policies and practices, and leadership on overall risk governance and mitigation in areas including credit, operational, asset/liability, market, liquidity, fraud and anti-money laundering, enterprise security, business continuity and insurance risk. Prior to joining CoBank, Mr. Curran was the head of risk management for the Treasury and Trade Solutions business at Citigroup (Citi). Previously, Mr. Curran served in additional senior roles at Citi which included chief risk officer for Citi Holdings. Prior to joining Citigroup in 2003, he worked in risk management and other leadership roles for FleetBoston Financial Corp., BankBoston (both now Bank of America) and Cargill. Mr. Curran has more than 34 years of experience in the financial services and commodity markets. He serves on the Board of Governors of the Farm Credit System Association Captive Insurance Company. Mr. Curran received a commission as an officer in the U.S. Army achieving the rank of Captain. Mr. Curran is a Chartered Financial Analyst.

Senior Officers as of December 31, 2022

CoBank, ACB

Brenda K. Frank
Executive Vice President, Farm Credit Banking Group

Ms. Frank, 51, was appointed Executive Vice President of Farm Credit Banking effective April 30, 2021. In this role, Ms. Frank is responsible for CoBank's funding relationships with the Bank's affiliated Associations and other Farm Credit institutions. Ms. Frank was formerly the President and CEO of Yankee Farm Credit, ACA, one of CoBank's affiliated Associations. For 10 years prior to joining the Association, she directed Farm Credit Canada's Western Provinces commercial lending and point-of-sale functions. In that role she worked closely with the board of directors to create long-term business strategy and develop enterprise risk management and corporate planning processes. Ms. Frank's 32 years of experience in agriculture commenced with managing the family farm in Minnesota. She has also held roles in sales and IT with Syngenta, and managed grain marketing and agronomy sales at Cargill.

Eric Itambo,
Chief Banking Officer

Mr. Itambo, 52, was appointed chief banking officer effective July 1, 2018. He is responsible for all business segments and banking product groups, capital markets, digital banking services and oversight of the Farm Credit Banking segment. Prior to joining CoBank, Mr. Itambo spent over 20 years with Citigroup, most recently as Managing Director and U.S. Head – Commercial Lending Management for Citigroup's Global Commercial Banking Group. During this time, Mr. Itambo built extensive experience in corporate and investment banking, capital markets, commercial banking and commercial real estate finance businesses, including risk and portfolio management. Mr. Itambo serves as Chairman of the Board of Directors of Farm Credit Leasing.

Andrew D. Jacob,
Chief Operating Officer

Mr. Jacob, 62, was appointed chief operating officer effective September 1, 2019. He is responsible for the operations, information technology, data, project management, process and change management functions of the Bank. Additionally, Mr. Jacob is responsible for CoBank's corporate communications, government affairs, and Knowledge Exchange functions as well as the Bank's Corporate Social Responsibility program. Prior to his current position, Mr. Jacob was CoBank's chief regulatory, legislative and compliance officer from 2015 to 2019. Mr. Jacob also served as CoBank's ethics, compliance, and standards of conduct officer from 2011 to 2019. Before joining CoBank in January 2011, Mr. Jacob spent nearly 25 years with the Farm Credit Administration, where he served in a variety of examination and policy leadership roles. Mr. Jacob is a Chartered Financial Analyst.

M. Mashenka Lundberg,
Chief Legal Officer and General Counsel

Ms. Lundberg, 55, was appointed chief legal officer effective January 1, 2017 and has served as general counsel since February 18, 2014. She is responsible for all aspects of CoBank's legal function, including providing legal counsel to all areas of CoBank's business operations. Ms. Lundberg also oversees the Bank's board relations and regulatory functions and the Legal and Loan Processing Division. Prior to joining CoBank, Ms. Lundberg was a partner with the law firm of Bryan Cave from 2012 to 2014. Prior to that time, Ms. Lundberg was a partner with the law firm of Holme Roberts & Owen and served as the firm's General Counsel and also on the firm's Executive Committee. She has extensive experience in the field of corporate law and represented a wide range of corporate clients in a variety of transactions during her career in private practice. Ms. Lundberg serves on the Board of Directors and as Treasurer of Mile High United Way, a social services organization in the Denver area. Ms. Lundberg also serves on the Board of Directors and as chair of the audit committee of the Dumb Friends League, a community-based animal welfare organization in the Rocky Mountain Region.

Senior Officers as of December 31, 2022

CoBank, ACB

Michael L. Short,
Chief Credit Officer

Mr. Short, 61, was appointed as the chief credit officer effective January 1, 2019. Mr. Short had previously served as the interim chief credit officer from August 2018. As chief credit officer, he is responsible for all of CoBank's credit approval and credit related administrative functions including loan approval, credit support and analysis, credit guidelines, credit training, loan compliance and monitoring, collateral audit and special assets. Prior to serving as the interim chief credit officer, he was the senior vice president of credit approvals from June 2017 to August 2018 and has held leadership positions in Capital Markets and Special Assets since joining CoBank in 2013. He began his financial services career with Bank of America, and went on to John Hancock, where he held several senior positions during his eleven years there. Mr. Short has more than 31 years of financial services experience.

Steven W. Wittbecker,
Chief Sustainability Officer

Mr. Wittbecker, 49, was appointed chief sustainability officer effective March 15, 2022. In this role, Mr. Wittbecker is responsible for leading CoBank's long-term strategy, development and execution of its Environmental, Social and Corporate Governance policies and practices. Prior to this role, Mr. Wittbecker served as CoBank's chief audit officer for 10 years, overseeing the Bank's internal audit and asset review functions and working collaboratively with functional leaders across the enterprise. He joined CoBank in 2011, after serving as a Director in PricewaterhouseCoopers' Risk Assurance practice for over eight years. Mr. Wittbecker has over 22 years of public accounting, consulting and internal audit experience.

F. William Davis,

Mr. Davis, 64, served as executive vice president of the Farm Credit Banking Group through April 1, 2022.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

Overview

This section describes the compensation programs for CoBank's President and Chief Executive Officer (CEO) and other senior officers, as defined by FCA regulations (collectively, senior officers), as well as those programs for any highly compensated employees as defined by FCA regulations. This section also presents the compensation earned by our CEO, as well as aggregate compensation earned by our other senior officers and any highly compensated employees, for the years ended December 31, 2022, 2021 and 2020.

The Board of Directors, through its Compensation and Human Resources Committee (Committee), has adopted a total compensation philosophy for the Bank. Our total compensation philosophy is intended to align the interests of our senior officers with those of our shareholders and is more fully described below. We accomplish this by providing incentive compensation that rewards performance in relation to the business and financial plan established by our Board of Directors.

Our compensation programs contain a number of elements that are aligned with "best practices" for executive compensation, including:

- The majority of total compensation for senior officers is delivered through performance-based, variable incentive programs – for 2022 the CEO's target total direct compensation mix was approximately 20 percent base salary and 80 percent performance-based, variable incentives;
- A substantial portion of performance-based, variable compensation is based on three-year performance goals;
- We have an incentive compensation recovery ("clawback") provision for all members of the Bank's Management Executive Committee, including the CEO;
- Award levels for the short-term and long-term incentive plans are "capped";
- The formulaic maximum payout for the annual short-term incentive plan is 225 percent of target and the maximum payout is 150 percent of target for the long-term incentive plans;
- There is a ten percent discretionary upward or downward modification that the Board of Directors may apply to allow for adjustments based on business circumstances within the short- and long-term incentive plans;
- The short-term and long-term incentive plans have a minimum return on active patron stock investment that must be achieved before any incentives can be earned;
- As of December 31, 2022, no employees were employed subject to the terms of an employment agreement; and
- The Committee engages an independent executive compensation consultant to provide competitive benchmark data, advise on strategic compensation matters, administer the CEO performance evaluation and conduct an annual assessment of compensation related risks.

We believe these elements balance our risk profile with total compensation while aligning our compensation program with our shareholders' long-term interests and best practices in governance of executive compensation.

As described in the "Financial Condition and Results of Operations" section of Management's Discussion and Analysis on page 34 of this Annual Report, in 2022 CoBank reported strong financial performance while fulfilling its mission in a safe and sound manner. As a result of our performance, our short-term incentive plan for 2022 was funded between the target and maximum award levels based upon performance goals set at the beginning of 2022. In addition, based on strong performance in the 2020 through 2022 period against performance goals set at the beginning of 2020, our long-term incentive plan was also funded between the target and maximum award levels. These and other elements of our senior officers' compensation are explained below.

Compensation Philosophy and Objectives

The Bank's total compensation philosophy is designed to maintain a compensation program that will:

- Attract, retain and reward employees with the skills required to accomplish the Bank's strategic business objectives;
- Provide accountability and incentives for achievement of those objectives;
- Link compensation to Bank performance, Business Unit results and increased shareholder value;
- Properly balance the risk profile of the Bank with both short- and long-term incentives;
- Operate within a consistent philosophy and framework;
- Create a culture of adherence to core values and strong ethical behavior; and
- Enhance management of risk and accountability through a clawback provision for all top executive incentive payouts.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

The total compensation philosophy seeks to achieve the appropriate balance among market-based salaries, benefits and variable incentive compensation designed to incent and reward both the current and long-term achievement of our strategic business objectives, business and financial plans and mission fulfillment. It also seeks to incent prudent risk taking within Board-established parameters with the proper balance and accountabilities between short- and long-term business performances. For senior officers, CoBank strives to deliver a significant portion of total target compensation through performance-based pay, with the actual proportion of total compensation provided through both short- and long-term incentives varying with actual financial performance, the achievement of Board-approved strategic business objectives and each senior officer's individual performance. We believe this philosophy fosters a performance-oriented, results-based culture wherein compensation varies from one year to the next on the basis of actual results achieved. We also find that this variable performance-based compensation approach is properly aligned with an acceptable risk profile and shareholder returns.

Process for Compensation Decisions

The Board of Directors has established the Committee to oversee the design, implementation and administration of compensation, benefits and human capital programs for CoBank. The Committee meets regularly to execute the responsibilities of its charter. The Committee reviews the performance of the Bank's CEO semi-annually, and the Board of Directors approves the compensation level of the CEO, comprised of base salary, benefits and short- and long-term incentive compensation. The CEO is responsible for setting the compensation levels of the Bank's Management Executive Committee, who, in turn, are responsible for the compensation of all other employees. In addition, the Committee reviews the compensation of the members of the Management Executive Committee and reviews and approves for recommendation to the Board of Directors the Bank's incentive plans.

The Committee generally makes a final decision regarding the CEO's incentive compensation in its February meeting to fully take into consideration the prior-year's corporate performance and results of the formal evaluation of CEO performance conducted by the Board. The Committee utilizes an independent advisor to annually compare the CEO's compensation level to a select peer group of financial institutions. This evaluation helps ensure that such compensation is appropriate for the CEO's experience and competencies and is competitive with positions of similar scope and complexity at relevant financial institutions. The comparative peer group is composed of companies with significant corporate and commercial lending activities, and which have other similar characteristics such as asset size, net income and significant customer relationships.

For 2022, the Committee engaged Pay Governance LLC (Consultant) directly to serve as its independent advisor on executive and Board compensation matters. Periodically, the Committee conducts a review process related to the selection of the Committee's independent advisor and on an annual basis, the Committee assures the qualifications and independence of the Consultant as an independent and objective advisor. For 2022, Pay Governance did not provide any other services to CoBank that were not approved in advance by the Committee and only provides advice related to compensation matters.

Senior Officers Compensation Discussion and Analysis

CoBank, ACB

Components of CoBank Total Compensation Program

Given the cooperative ownership structure of CoBank, no equity or stock-based plans are used to compensate any employee, including senior officers. Senior officers' compensation primarily consists of four components – salary, short-term incentive plan, long-term incentive plan and retirement benefits – as described below. All employees participate in salary, the short-term incentive plan and retirement benefits, while senior officers and specified other key employees are also eligible to participate in the long-term incentive plan. All senior officers can elect to defer certain incentive payments through a nonqualified deferred compensation plan. In addition, senior officers are eligible for specific supplemental retirement benefits, as discussed on page 171.

Overview of Senior Officers' Compensation		
Component	**CoBank Philosophy**	**Design Characteristics**
Salary	• Market-based compensation • Provides a foundation for other components • Competitive relative to positions of similar scope and complexity at a select peer group of financial institutions • Reflects individual performance, competencies and responsibilities	• Traditional salary structure with salary ranges for each job grade • Structure reviewed annually • Salaries based on market and individual performance • Merit budgets based on market and other factors
Short-Term Incentive Plan	• Links rewards to achievement of annual goals • Recognizes corporate, Business Unit and individual performance • Aligns the interests of shareholders and senior officers through bank-wide financial and strategic business objectives • Balances short-term results with the risk profile of the Bank • Links pay to performance outcomes • Establishes competitive incentive opportunities relative to peers	• Multiple corporate and Business Unit financial and non-financial goals • Discretionary component (within a range) to allow for adjustments based on business circumstances • Awards are capped • Minimum performance for each goal required • Minimum return on active patron stock investment of 11 percent must be achieved in plan year in order for any payout to be made • Individual payouts require minimum individual performance level and are based on equal weighting of individual and corporate/Business Unit performance • Clawback provision for the Bank's Management Executive Committee, including the CEO

<table>
<tr><th colspan="3">Overview of Senior Officers' Compensation (continued)</th></tr>
<tr><th>Component</th><th>CoBank Philosophy</th><th>Design Characteristics</th></tr>
<tr><td>Long-Term Incentive Plan</td><td>Provides opportunities for compensation tied to CoBank's sustained performance
Provides balance through emphasis on long-term results, compared to short-term orientation of annual short-term incentive plan
Encourages longer-term retention of plan participants
Promotes the creation of profitable growth in shareholder and customer value, and enhances the sustainability of CoBank to serve its customers while providing proper balance to the risk profile of the Bank
Aligns the interests of shareholders and senior officers through bank-wide financial and strategic business objectives
Links pay to performance outcomes
Establishes competitive incentive opportunities relative to peers</td><td>Multiple corporate financial and non-financial goals
Discretionary component (within a range) to allow for adjustments based on business circumstances
Awards are capped
Three-year performance periods
New plan starts each year (plans overlap)
Minimum performance for each goal required
Minimum return on active patron stock investment of 11 percent and average total capital ratio of 11.5 percent must be achieved in each year of the plan for a full payout
No individual performance factor is considered in determining payouts
Individual performance is contemplated in determining participation in the plan
Clawback provision for the Bank's Management Executive Committee, including the CEO</td></tr>
<tr><td>Retirement Benefits</td><td>Provide for a source of income subsequent to retirement
Encourage longer-term retention of employees
Provide for competitive total compensation opportunities over the employee's career</td><td>Benefits vary based on date of hire
Senior officers hired prior to January 1, 2007 participate in a defined benefit plan and supplemental retirement plan
Senior officers hired on or after January 1, 2007 do not participate in a defined benefit plan but receive additional, non-elective employer contributions to the 401(k) retirement savings plan
Other retirement benefits include a 401(k) retirement savings plan and access to health care benefits. Substantially all participants pay the full premiums associated with postretirement health care benefits
Clawback provision for the Bank's Management Executive Committee, including the CEO</td></tr>
</table>

Salary

Overview

Salary Considerations

- Individual performance, competencies and experience
- Maintenance or expansion of responsibilities and scope of position
- Peer group data and internal equity
- Overall CoBank merit increase budget, as applicable, based on market and other factors

Salaries represent a foundational component of CoBank's total compensation program, as the value of other components is determined in relation to base salary. Senior officer salaries are market-based and established taking into consideration individual performance, the specific competencies and experience the senior officer brings to CoBank, the responsibilities and scope of the position, peer group data and internal equity. Salaries for senior officers are reviewed annually, and adjusted if necessary.

Short-Term (Annual) Incentives

Overview

Short-Term Incentive Plan (STIP)

- Corporate and individual performance weighted equally
- Corporate financial performance measures are balanced: profitability, loan quality and operating efficiency
- For nine Business Units, a portion of the STIP corporate performance measures are determined based on metrics specific to the unit's performance
- Board of Directors also provides subjective evaluation related to achievement of the Bank's strategic business objectives
- All employees are eligible to participate
- For 2022, CoBank performed at or above maximum award levels on three corporate performance goals, and between the target and the maximum award level on two corporate performance goals.
- For the nine Business Units, the corporate factor includes between two and four additional unit performance measures using metrics that may include transaction quality, transaction volume, and revenue and profitability, as appropriate. Business Units' performance varied within 5 percentage points of the overall corporate performance.
- The Board of Directors retains the discretion to apply a ten percent subjective upward or downward modification to the corporate performance factor.

Short-term incentive payments are based on a combination of annual corporate and individual performance. The short-term incentive plan aligns the interests of shareholders and employees through the establishment of a balanced scorecard of bank-wide and, in certain cases, Business Unit financial results and strategic business objectives. Under the terms of the plan, a minimum return on active patron stock investment must be achieved for the plan year in order for a payout to be approved, ensuring that shareholders are rewarded first. The return minimum was 11 percent for the years ended December 31, 2022, 2021 and 2020.

The actual short-term incentive award is determined as follows:

Salary × Individual Annual Short-Term Incentive Target × Corporate Performance Factor × Individual Performance Factor

Based on the formulaic outcomes of the corporate and individual performance factors, participants can earn from zero to 225 percent of their individual annual short-term incentive target. Payments are typically made during March, but always following the end of the year to which the award is applicable. Participants are not eligible to receive a short-term payout if they are no longer employed by CoBank at the time of the scheduled payout, unless otherwise provided for in an agreement. The key elements of the actual payout are described below.

- *Individual Annual Short-Term Incentive Target* — Annual short-term incentive targets are set for all employees at the beginning of the year. For the 2022 performance period, the target short-term incentive level for the CEO was 110 percent of salary. For the other senior officers, the targets ranged from 50-85 percent.

- *Corporate Performance Factor* — The corporate performance factor is determined at the end of the year based on annual actual business results relative to a balanced scorecard of financial measures and strategic business objectives, as established at the beginning of each year by the Board of Directors. The Board of Directors retains discretion to make adjustments to the corporate performance factor and to apply an upward or downward adjustment of up to ten percent to the corporate performance factor, where appropriate, in addition to providing a subjective performance result for the achievement of strategic business objectives. The Board of Directors also has discretion to adjust the corporate performance factor for the Business Units beyond ten percent should performance warrant it, not to exceed the cap of 150 percent.

  CoBank utilizes a balanced scorecard for measuring short-term performance to emphasize overall success in executing our strategy and managing risks. The short-term incentive corporate scorecard establishes certain key performance indicators, of which 80 percent focus on the achievement of specified financial measures related to profitability, lending-related activities, transaction quality and operating efficiency, and 20 percent focus on the achievement of the strategic business objectives that are established at the beginning of each year by the Board of Directors. The final performance result, or corporate performance factor, is determined by comparing the actual performance of each measure to the targets established at the beginning of the year and taking into consideration any discretionary adjustments made by the Board of Directors. Each scorecard performance measure is weighted separately, and the factor is set such that if performance of each measure is within a range of 98 to 102 percent of target, the result is a performance factor of 100 percent. The formulaic results of the performance factor can vary from zero to 150 percent, depending on performance against the targets and without any application of the ten percent discretionary element available to the Board of Directors. The Committee approves the overall performance factors and funding of the STIP for actual performance relative to target. The 2022 short-term incentive corporate scorecard is as follows:

2022 Short-Term Incentive Corporate Scorecard

	Weight	
Performance Measure	**Senior Officers**	**Business Unit**
Net Income	20 %	12.5 %
Return on Common Equity (Excl AOCI)	15	12.5
Strategic Business Objectives	20	20
Loan Quality (Adverse Loans Ratio)	20	10
Operating Expense Ratio	25	15
Unit Specific Measures	N/A	30

For nine Business Units, 30 percent of the corporate performance factor is represented by unit specific performance measures for transaction quality, transaction volume, and revenue and profitability, as appropriate.

- *Individual Performance Factor* — At the beginning of each year, all CoBank employees, including the CEO and other senior officers, establish individual goals they seek to achieve that year in support of the business. These individual goals are anchored to the Bank's business and financial plan, as well as the Bank's strategic business objectives and also include key behavioral expectations appropriate for that employee. The CEO is responsible for administering the short-term incentive plan and approves the individual performance factors of the other senior officers. The Board of Directors approves the goals and individual performance factor of the CEO. The assessment of an individual's actual performance with respect to his or her annual goals is reflected as an individual performance factor and ranges from zero to 150 percent.

The actual short-term incentive awards for 2022, 2021 and 2020 for the CEO, other senior officers and any highly compensated employees are presented in the Summary Compensation Table on page 174.

Long-Term Incentives

Overview

Long-Term Incentive Plan (LTIP)

- Awards based upon corporate performance for overlapping three-year periods
- Corporate financial performance measures are balanced: profitability, loan quality and capital consideration
- Board of Directors also provides subjective evaluation related to the achievement of corporate strategic business objectives
- For the 2020 through 2022 performance period, CoBank performed at or above maximum award level on three corporate performance goals and between the target and maximum award level on one corporate performance goal
- The Board of Directors retains the discretion to apply a ten percent subjective upward or downward modification to the corporate performance factor.

CoBank utilizes a long-term incentive compensation plan that provides senior officers and specified other key employees with the opportunity for compensation tied to CoBank's sustained success. The long-term incentive plan provides accountability and balance for the annual outcomes measured in the short-term plan. Participants in the long-term plan directly influence the outcomes of actions and risks taken during each three-year performance period, which provides the proper balance between short-term results and long-term value creation. Eligibility for participation is limited to those individuals who clearly have the ability, potential and performance to drive the success of strategies and initiatives critical to long-term value creation for shareholders. The purpose of this plan is to encourage longer-term retention of plan participants, to promote the creation of sustainable and profitable growth in shareholder and customer value, and to enhance the ability of CoBank to serve its customers while providing proper balance to the risk profile of the Bank. The long-term incentive plan aligns the interests of shareholders with those of senior officers and key employees through the establishment of bank-wide financial targets and strategic business objectives, and reinforces a long-term focus on financial performance, strategic positioning and risk management.

Long-term incentive plan payouts are based on corporate performance in the achievement of key financial metrics and strategic business objectives over a three-year performance period, as defined by CoBank's long-term corporate scorecard. The Board of Directors, in connection with the annual business and financial plan, establishes the long-term performance metrics at the beginning of each three-year performance period and the strategic business objectives at the beginning of each year of the three-year performance period. A minimum return on active patron stock investment of 11 percent, ensuring that shareholders are rewarded first, as well as a minimum total regulatory capital ratio of 11.5 percent must be achieved in each year of the three-year performance period for a full payout to be approved.

The actual long-term incentive award is determined as follows:

Individual Long-Term Incentive Dollar Target x Corporate Performance Factor

Based on the corporate performance factor, participants can earn from zero to 150 percent of their individual long-term incentive target. Payments are typically made during March of each year following the end of the three-year performance period to which the award is applicable. Participants are eligible to receive a prorated award at the time of the scheduled payout if they are no longer employed at CoBank at the time of payment and their termination meets plan eligibility requirements for reasons related to retirement, death or disability, or if otherwise provided for in an agreement. Participants are not eligible to receive any payment at the time of the scheduled payout if they are no longer employed by CoBank and do not otherwise meet the eligibility requirements for payment. The key elements of the actual payout are described below.

- *Individual Long-Term Incentive Dollar Target —* Long-Term Incentive Dollar Target amounts are determined by the CEO based on the value expected to be delivered during the incentive plan period. Nominations are reviewed and agreed upon by the Management Executive Committee and approved by the CEO. Participants are considered based on the value they are expected to create for the Bank and its shareholders.

- *Corporate Performance Factor* — Corporate performance is determined at the end of a designated three-year period based on actual business results relative to a balanced scorecard of bank-wide financial measures established at the beginning of the three-year performance period, and strategic business objectives, as established at the beginning of each year of the three-year performance period by the Board of Directors. The Board of Directors retains the right to make adjustments to the corporate performance factor by applying an upward or downward adjustment of ten percent to the corporate performance factor, where appropriate, in addition to providing a subjective performance result for the achievement of strategic business objectives.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

CoBank utilizes a balanced scorecard for measuring long-term corporate performance to emphasize overall success in executing our strategy and managing risks. The long-term incentive corporate scorecard establishes certain key performance indicators, of which 80 percent focus on the achievement of specified financial measures established at the beginning of the three-year performance period related to profitability, loan quality and capital consideration, and 20 percent focus on the achievement of the strategic business objectives that are established at the beginning of each year of the three-year performance period by the Board of Directors. The final performance result, or corporate performance factor, is determined by comparing the actual performance of each measure to the financial targets established at the beginning of each three-year performance period and using an average of strategic business objective results during each year in the three-year performance period, as well as taking into consideration any discretionary adjustments made by the Board of Directors. Each scorecard performance measure is weighted separately and performance within a range of 98 to 102 percent of target for the financial measures is recognized at a performance factor of 100 percent. The corporate performance factor can vary from zero to a maximum of 150 percent depending on performance against the targets and without any application of the ten percent discretionary element available to the Board of Directors. The Committee approves the corporate performance factor and funding of the long-term incentive plan based on actual performance relative to target. The long-term incentive corporate scorecards for the three-year performance periods 2020 through 2022, and 2021 through 2023 and 2022 through 2024 are as follows:

Long-Term Incentive Corporate Scorecards:
2020 – 2022, 2021 – 2023 and 2022 – 2024 Periods

Performance Measure	Weight
Net Income	27.5 %
Return on Common Equity (Excl AOCI)	27.5 %
Strategic Business Objectives	20 %
Adverse Loans Ratio	25 %

The actual long-term incentive awards for 2022, 2021 and 2020 for the CEO and other senior officers are presented in the Summary Compensation Table on page 174

Employment Agreement

As of December 31, 2022, no employees were employed subject to the terms of an employment agreement.

Retirement Benefits

Overview

We have employer-funded qualified defined benefit pension plans, which are noncontributory and cover employees hired prior to January 1, 2007. Depending on the date of hire, benefits are determined either by a formula based on years of service and final average pay, or by the accumulation of a cash balance account with interest credits and contribution credits based on years of service and eligible compensation. We also have noncontributory, unfunded, nonqualified supplemental executive retirement plans (SERPs) covering one senior officer employed at December 31, 2022, as well as specified other senior managers. For 2022, there were no new executive retirement plans in place. All employees are also eligible to participate in a 401(k) retirement savings plan, which includes employer matching contributions. Employees hired on or after January 1, 2007 receive additional, non-elective employer contributions to the 401(k) retirement savings plan. All retirement-eligible employees under age 65, including senior officers, are also currently eligible for other postretirement benefits, which primarily include access to health care benefits. Substantially all participants pay the full premiums associated with the post-retirement health care benefits.

Defined Benefit Pension Plans

One senior officer participates in the defined benefit pension plan. Pursuant to this plan, the benefits are determined based on years of service and final average pay. Eligible compensation for this senior officer, as defined under the final average pay formula, is the highest 60 consecutive-month average, which includes salary and incentive compensation measured over a period of one year or less, and excludes long-term incentive awards, expense reimbursements, taxable fringe benefits, relocation allowance, short- and long-term disability payments, nonqualified deferred compensation distributions, lump sum vacation payouts and all severance payments. Retirement benefits under this plan are calculated assuming payment in the form of a single life annuity with five years certain and retirement at age 65. However, the actual form and timing of retirement benefit payments are based on participant elections. The plans require five years of service to become vested. The senior officer participating in the defined benefit pension plan has been employed for more than five years and, as such, is fully vested in the plan. The benefit formula is the sum of 1.5 percent of eligible compensation up to Social Security covered compensation plus 1.75 percent of eligible compensation in excess of Social Security covered compensation, multiplied by the years of eligible benefit service. Social Security covered compensation is the 35-year average of the Social Security taxable wage bases up to the participant's Social Security retirement age.

Federal laws limit the amount of compensation we may consider when determining benefits payable under the qualified defined benefit pension plans. We maintain SERPs that pay the excess pension benefits that would otherwise have been payable under our qualified defined benefit pension plans.

Nonqualified Deferred Compensation Plan

We have a nonqualified deferred compensation plan that allows senior officers and other eligible key employees to defer all or a portion of their incentive compensation. Additionally, the Bank makes contributions to this plan on behalf of participants whose benefits under the 401(k) retirement savings plan are limited by federal law or who defer short-term incentive plan payments. The Bank's contributions are made at the same employer contribution percentages as provided under the 401(k) retirement savings plan. The compensation that is deferred and the employer contributions are invested in the available investment options selected by the participants. These investment options are similar to those available to all participants in the Bank's 401(k) retirement savings plan. The participant is subject to all risks and returns of amounts invested. The election to defer is irrevocable and the deferred amounts are paid pursuant to the participant's elections made in accordance with applicable law. If the death of a participant occurs before the entire benefit has been distributed, the undistributed portion will be paid to the participant's beneficiary.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

Compensation Risk Management

The Committee considers potential risks when reviewing and approving compensation programs. The Board of Directors approves the total compensation philosophy and programs to ensure there is a proper balance and alignment between the overall acceptable risk profile of the Bank and the manner in which prudent risk taking is reflected in the design of the underlying program. We have designed our compensation programs, including our incentive compensation plans, with specific features to address potential risks while rewarding employees for achieving short-term and long-term financial and strategic objectives through prudent business judgment and appropriate risk taking. The objective is to motivate employees to take prudent risk within Board-approved parameters while ensuring employees are also accountable for the long-term outcomes of their actions. The following elements have been incorporated in our compensation programs available for our senior officers:

- *A Balanced Mix of Compensation Components* – The target compensation mix for our senior officers is composed of salary, short-term incentive, long-term incentive and retirement benefits, representing a mix that is weighted toward long-term performance and service with CoBank.

- *No Separate Production Based Incentive Plans* – The STIP and LTIP are the only incentive plans within CoBank and are funded based upon a balanced scorecard of the Bank's financial and business results. There are no additional "production" or "sales" based incentives tied to number of customers, number of loans, number of products, loan volume or any other metric that solely measures top-line results.

- *Multiple Performance Factors* – Our incentive compensation plans include balanced scorecards of organization-wide financial performance, Business Unit performance and integration with individual performance assessments through our performance management system.
  - Incentive plans include a Board-determined subjective evaluation of our achievement of strategic business objectives
  - The short-term incentive is dependent on multiple performance metrics, including a subjective measure of performance against strategic business objectives and an assessment of individual performance
  - The long-term incentives are cash-based, with three-year performance metrics to complement our annual short-term incentives
  - Board of Directors retains discretion to adjust performance factors
  - Targets and ranges of performance for each metric are approved by the Board of Directors prior to the beginning of the performance period

- *Multiple Year Performance Measurement* – Our long-term incentives include a three-year performance measurement period that requires sustained corporate performance complemented by a required minimum level of shareholder return and capital threshold in order for the plan to be fully funded.

- *Caps on Incentive Payments* – Our incentive compensation plan payments are subject to caps that limit the maximum award that may be paid.

- *Threshold Performance Requirements for Each Metric* – Our incentive compensation plan payments are contingent upon achieving minimum performance levels for each financial performance goal.

- *Threshold Individual Performance Requirements* – Our incentive compensation plans require a minimum individual performance level before a payment may be made for any given performance year.

- *Compensation and Human Resources Committee Discretion* – The Committee subjectively evaluates the Bank's achievement of strategic business objectives and approves all incentive plan funding following a review of the Bank's performance against plan performance criteria established and approved prior to the beginning of each year of an incentive plan performance period.

- *Clawback Policy* – Provides for recoupment/recovery of compensation in the event of a financial restatement or other actions (see “Recoupment of Compensation (Clawback)” below).

- *Shareholder Return* – A minimum return on active patron stock investment must be achieved for incentive compensation payments to be approved.

- *Fixed Director Compensation Benchmarked to Market Norms* – The director compensation program provides fixed pay levels with no performance incentives to align with common board compensation practices and avoid any potential conflict of interest when the Board of Directors establishes performance goals for Bank incentive programs and evaluates performance of the Bank.

Additionally, the Compensation and Human Resources Committee considers an assessment of compensation-related risks for all of our employees, annually. The assessment includes a review of multiple facets of our compensation program including governance practices, program documentation, incentive plan design, processes, employment practices, benefits program, and cultural considerations. Reviews of various aspects of our programs are also conducted by independent auditors, whose reports are provided to our Board of Directors. Based on this assessment, the Committee concluded that our compensation plans do not create risks that are reasonably likely to have a material adverse impact on CoBank. In making this conclusion, the Committee reviewed the key design elements of our compensation programs in relation to industry “best practices” as presented by the Consultant, as well as the design features and administrative processes that mitigate any potential risks, such as through our internal controls and oversight by management and the Board of Directors.

Recoupment of Compensation (Clawback)

CoBank has an incentive compensation recovery (“clawback”) policy to encourage the highest ethical standards, to further ensure incentive plans do not encourage excessive risk-taking and to ensure the alignment of compensation with accurate financial data. The policy provides that in the event of a restatement of the financial statements, the Bank may seek recovery from members of the Bank’s Management Executive Committee of incentive compensation and nonqualified retirement benefits that would not otherwise have been paid if the correct financial information had been used to determine the amount payable. The policy includes circumstances under which the “clawback” policy could be enforced to include ethical misconduct, theft, misappropriation, violation of Bank policy, or materially imprudent judgment that caused financial or reputational harm to the Bank, including where the covered executive knowingly failed to take corrective action with regard to other employees under his or her direct control who engaged in such behavior. The Board of Directors may only seek recovery or reduction of compensation under this policy within the three-year period following the date the Bank filed the incorrect report.

Summary Compensation Table

The following table summarizes compensation earned by our CEO as well as aggregate compensation earned by our other senior officers for the years ended December 31, 2022, 2021 and 2020. Our current Board policy regarding reimbursements for travel, subsistence and other related expenses states that all employees, including senior officers, shall be reimbursed for actual reasonable travel and related expenses that are necessary and that support our business interests. A copy of our policy is available to shareholders of CoBank and of our affiliated Farm Credit Associations upon request.

Summary Compensation Table[1] ($ in Thousands)

Name of Individual or Number in Group[2]	Year	Salary	Annual Short-Term Incentive Compensation[3]	Annual Long-Term Incentive Compensation[3]	Change in Pension Value[4]	Deferred/ Perquisites[5]	Other[6]	Total
CEO:								
Thomas E. Halverson	2022	**$ 880**	**$ 2,049**	**$ 3,203**	**$ -**	**$ 288**	**$ -**	**$ 6,420**
Thomas E. Halverson	2021	880	1,831	2,404	-	290	-	5,405
Thomas E. Halverson	2020	876	1,758	1,705	-	237	-	4,576
Aggregate Number of Senior Officers (excluding the CEO):								
10	2022	**$ 3,743**	**$ 4,626**	**$ 3,500**	**$ 13**	**$ 949**	**$ 177**	**$ 13,008**
9	2021	3,466	4,414	2,965	258	901	100	12,104
10	2020	3,439	3,685	2,940	3,063	958	487	14,572

(1) Disclosure of the total compensation paid during 2022 to any designated senior officer is available to shareholders of CoBank and of our affiliated Farm Credit Associations upon request. Compensation amounts do not include earnings or losses on nonqualified deferred compensation, as such earnings or losses are not considered above-market or preferential.

(2) The senior officers are those officers defined by FCA regulation §619.9310.

(3) Incentive compensation amounts represent amounts earned in the reported fiscal year, which are paid in March of the subsequent year to persons who continue to be employed by CoBank or unless otherwise provided for as part of normal retirement. The short-term incentive compensation amounts are calculated based on relevant performance factors for the reported fiscal year, while the long-term incentive compensation amounts are calculated based on the relevant performance factors for the three-year performance period ended in the reported fiscal year.

(4) The Change in Pension Value increased in 2020 primarily due to the additional service and eligible pay of participants, the form of pension benefit elected by two senior officer participants who left the Bank in 2020, as well as a change in the discount rate.

(5) Represents company contributions to a qualified retirement savings plan and nonqualified deferred compensation plan, as well as payment of tax return preparation and financial planning expenses, relocation, certain travel-related costs, wellness benefits, life insurance benefits, long-term disability benefits and associated income tax impact.

(6) For 2022, represents amount paid to a senior officer who left the Bank in 2022 for separation pay pursuant to the terms of an agreement. For 2021, amount represents $50 paid to two senior officers who joined the Bank in 2021. For 2020, $75 represents an amount paid to a senior officer who joined the Bank in 2020 and $412 represents amounts paid to two senior officers who left the Bank in 2020 for separation pay and certain other benefits pursuant to the terms of an agreement.

Pension Benefits

The following table presents certain pension benefit information by plan for the senior officer group as of December 31, 2022. The CEO does not participate in the defined benefit pension plan.

Pension Benefits Table ($ in Thousands)

Number in Group[1]	Plan Name	Number of Years of Credited Service	Actuarial Present Value of Accumulated Benefits	Payments During Last Fiscal Year[2]
Aggregate Number of Senior Officers				
1	CoBank, ACB Retirement Plan	20.67	$ 867	$ -
1	Supplemental Executive Retirement Plan	20.67	2,198	-
Total			$ 3,065	$ -

(1) The senior officers included in the pension benefits disclosure are those defined by FCA regulations §619.9310 and §620.6.

(2) Represents post-retirement benefit payments made during the last fiscal year.

Report on Compensation
CoBank, ACB

Members of the Compensation and Human Resources Committee of the Board of Directors are appointed by the Board chair in consultation with the Board officers and committee chairs. All members of the Compensation and Human Resources Committee (Committee) qualify as independent directors as defined by Board policy.

The Committee approves the overall compensation philosophy at the Bank utilizing an independent, Committee-appointed, executive compensation consultant, which includes establishing the compensation philosophy which guides program design including pay mix comprised of base pay, short- and long-term incentive compensation plans and employee benefits. In so doing, the Committee has developed and implemented compensation policies and programs that support the Bank's core values and links compensation to overall Bank and individual performance, ensuring a proper balance with the risk profile of the Bank, thereby contributing to the value of the shareholders' investment in the Bank.

The Committee is responsible for establishing the performance standards for the President and Chief Executive Officer and the compensation structure for other Bank employees. The Committee reviews the Board's performance evaluation of the President and Chief Executive Officer, approves an overall performance rating, and recommends for full Board approval all aspects of compensation (base salary, performance-based compensation including all incentives, benefits, and perquisites) for the President and Chief Executive Officer, consistent with the business and financial objectives of the Bank, the results achieved by the executive, Board directed performance objectives, and competitive compensation practices. The Committee carefully evaluates incentive-based compensation programs and payments thereunder to ensure they are reasonable and appropriate to the services performed by senior officers. The Committee monitors the terms and provisions of the incentive-based compensation programs for senior officers and assesses the balance of financial rewards to senior officers against the risks to the institution. The Committee carefully evaluates whether senior officer compensation, incentive, and benefit programs are designed to support the Bank's long-term business strategy and mission as well as promote safe and sound business practices. The Committee reviews the institution's projected long-term obligations for compensation and retirement benefits. The Committee operates under a written charter, adopted by the Committee and the Board of Directors, which more fully describes the Committee's responsibilities.

The Committee has reviewed and discussed the Senior Officers Compensation Discussion and Analysis with management. Based on this review and discussion, the Committee recommended to the Board of Directors, and the Board approved, that the Senior Officers Compensation Discussion and Analysis be included in the Annual Report for the year ended December 31, 2022.

Members of the 2023 Compensation and Human Resources Committee:

Catherine Moyer, Chair
Robert M. Behr
Kevin A. Still
Brandon J. Wittman

March 1, 2023

Code of Ethics
CoBank, ACB

CoBank sets high standards for honesty, ethics, integrity, impartiality and conduct. Each year, every associate certifies compliance with the letter, intent and spirit of our Associate Responsibilities and Conduct Policy, which establishes the ethical standards of our organization, and each senior officer is required to disclose additional information. Additionally, our president and chief executive officer, chief banking officer, chief operating officer, chief risk officer, chief credit officer, general counsel, chief financial officer and other senior financial professionals certify compliance with the letter, intent and spirit of our Code of Ethics. Our Code of Ethics supplements our Associate Responsibilities and Conduct Policy and establishes additional responsibilities specifically related to the preparation and distribution of our financial statements and related disclosures. Details about our Code of Ethics are available at www.cobank.com. At your request, we will provide you with a copy of our Code of Ethics, free of charge. Please contact:

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Denver, CO 80217
(303) 740-4061

The Bank also has a confidential hotline maintained by a third party and a special website through which complaints about business ethics or standards of conduct, financial reporting irregularities, internal controls or violations of law can be reported anonymously by directors, officers, employees, customer-owners and external parties. The confidential hotline can be reached by calling 1-888-525-5391 and the online reporting site is found at www.cobank.ethicspoint.com.

Young, Beginning, and Small Farmers
CoBank, ACB

Under the Farm Credit Act, CoBank does not have authority to lend directly to young, beginning, and small farmers. Rather, we recognize that Associations serve young, beginning, and small farmers, which we support through wholesale funding, partnering on Association programs as they deem appropriate, and completing reporting required by regulations. We believe the future of agriculture and rural America is well served when loan programs are developed by Associations to aid ambitious and capable young, beginning, and small farmers. Therefore, we have adopted a written policy that encourages the board of directors at each of our affiliated Associations to establish a program to provide sound and constructive credit and other services to young, beginning, and small farmers and ranchers and producers or harvesters of aquatic products (YBS farmers and ranchers). Each affiliated Association provides us annually with a report measuring achievement with respect to these programs for YBS farmers and ranchers. A summary of the combined reports for our affiliated Associations and certain participations CoBank purchased from Associations follows.

YBS Farmers and Ranchers ($ in Thousands)

	Loan Numbers		Loan Volume	
	Number	Percent of Portfolio	Dollars	Percent of Portfolio
Loans and Commitments Outstanding at December 31, 2022:				
Young	21,954	16.55 %	$ 8,504,227	7.39 %
Beginning	34,962	26.36	15,137,199	13.15
Small	47,227	35.61	9,568,528	8.31
Gross New Loans and Commitments Made During 2022:				
Young	5,159	17.29 %	$ 2,490,515	7.76 %
Beginning	8,367	28.04	4,510,263	14.06
Small	10,375	34.77	2,368,310	7.38

Small Farmers and Ranchers

Number / Volume of Loans Outstanding by Loan Size at December 31, 2022

Number / Volume	$0 – $50,000	$50,001 – $100,000	$100,001 – $250,000	$250,001 and greater
Total Number of Loans to Small Farmers and Ranchers	13,600	9,901	13,649	10,077
Total Loan Volume to Small Farmers and Ranchers ($ in Thousands)	$ 362,311	$ 753,116	$ 2,235,427	$ 6,217,674

Key definitions are as follows:

Young Farmer or Rancher – A farmer, rancher or producer or harvester of aquatic products who is age 35 or younger as of the date the loan was originally made.

Beginning Farmer or Rancher – A farmer, rancher or producer or harvester of aquatic products who had 10 years or less of experience at farming, ranching or producing or harvesting aquatic products as of the date the loan was originally made.

Small Farmer or Rancher – A farmer, rancher or producer or harvester of aquatic products who normally generated less than $250,000 in annual gross sales of agricultural or aquatic products at the date the loan was originally made.

The Young, Beginning, and Small farmer and rancher categories are not mutually exclusive, therefore, certain farmers and ranchers may be classified in more than one category in the tables above.

Beyond providing appropriate wholesale lending for Association YBS farmers and ranchers programs and submitting reports to our regulator, CoBank has partnered with Associations on successful financing programs designed to attract quality farm operations, meeting the intended purpose of providing vital capital to start-up farming operations and promoting the flow of capital into rural areas. CoBank also has its own programs to serve the credit needs of agribusiness cooperatives and rural infrastructure providers of all sizes as well as rural communities using our mission-related investments authorities. CoBank has also reached out to non-traditional forms of agricultural production, such as local foods, community supported agriculture, and urban agriculture, to better understand their financing needs and provide support within the legal constraints of CoBank lending authorities.

Unincorporated Business Entities
CoBank, ACB

CoBank holds investments in various unincorporated business entities (UBEs), as defined by FCA regulation. We hold these investments for two primary purposes: to acquire and manage unusual or complex collateral associated with loan workouts and to make mission-related investments.

Our UBEs are displayed in the table below.

Unincorporated Business Entities

Name	Entity Type	Level of Ownership	Scope of Activities
CoBank - Farm Credit Holdings, LLC	Limited Liability Company	100 %	Holds acquired property
Farm Credit FCB Holdings, LLC	Limited Liability Company	100	Holds acquired property
FarmStart, LLP	Limited Liability Partnership	45	Provides needed funding to operations with farm resources, farm-related expertise and good business plans, but limited access to capital in the Northeast.
Midwest Growth Partners, LLLP	Limited Liability Limited Partnership	49	Invests in entities with operations located in rural areas in the upper Midwest that are seeking to either launch a new business, grow an existing business or recapitalize an existing business.

FCL Titling Trust Assets

CoBank, ACB

CoBank's wholly-owned leasing subsidiary, Farm Credit Leasing Services Corporation (FCL), has purchased beneficial interests in leases and assets through a motor vehicle titling trust. Participation in these trusts is obtained through the purchase of beneficial interests in a designated series of titling trusts backed by eligible motor vehicle leases, as approved by the FCA and subject to certain conditions.

The following table presents the asset amount by trust/subtrust as of December 31, 2022.

FCL Titling Trust Assets ($ in Thousands)

Titling Trust	Amount
Altec Titling Trust	$ 21,181

CERTIFICATION

I, Thomas E. Halverson, President and Chief Executive Officer of CoBank, ACB (CoBank or the Bank), a federally chartered instrumentality under the Farm Credit Act of 1971, as amended, certify that:

(1) I have reviewed this annual report of CoBank;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations, and cash flows of CoBank as of, and for, the periods presented in this report;

(4) CoBank's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting for CoBank and have:

a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Bank, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. evaluated the effectiveness of the Bank's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. disclosed in this report any change in the Bank's internal control over financial reporting that occurred during the Bank's most recent fiscal quarter (the Bank's fourth fiscal quarter in the case of this annual report) that has materially affected, or is reasonably likely to materially affect, the Bank's internal control over financial reporting; and

(5) CoBank's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Bank's auditors and the audit committee of the Bank's Board of Directors (or persons performing the equivalent functions):

a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Bank's ability to record, process, summarize, and report financial information; and

b. any fraud, whether or not material, that involves management or other employees who have a significant role in the Bank's internal control over financial reporting.

Tom Halverson

Thomas E. Halverson
President and Chief Executive Officer

Dated: March 1, 2023

CERTIFICATION

I, David P. Burlage, Chief Financial Officer of CoBank, ACB (CoBank or the Bank), a federally chartered instrumentality under the Farm Credit Act of 1971, as amended, certify that:

(1) I have reviewed this annual report of CoBank;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations, and cash flows of CoBank as of, and for, the periods presented in this report;

(4) CoBank's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting for CoBank and have:

  a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Bank, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

  b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

  c. evaluated the effectiveness of the Bank's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

  d. disclosed in this report any change in the Bank's internal control over financial reporting that occurred during the Bank's most recent fiscal quarter (the Bank's fourth fiscal quarter in the case of this annual report) that has materially affected, or is reasonably likely to materially affect, the Bank's internal control over financial reporting; and

(5) CoBank's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Bank's auditors and the audit committee of the Bank's Board of Directors (or persons performing the equivalent functions):

  a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Bank's ability to record, process, summarize, and report financial information; and

  b. any fraud, whether or not material, that involves management or other employees who have a significant role in the Bank's internal control over financial reporting.

David P. Burlage
Chief Financial Officer

Dated: March 1, 2023

Customer Privacy

Your financial privacy and the security of your other non-public information are important to us. We, therefore, hold your financial and other non-public information in strictest confidence. Federal regulations allow disclosure of such information by us only in certain situations. Examples of these situations include law enforcement or legal proceedings or when such information is requested by a Farm Credit System institution with which you do business. In addition, as required by Federal laws targeting terrorism funding and money laundering activities, we collect information and take actions necessary to verify your identity.

CoBank's 2023 Quarterly and Annual Reports to Shareholders are available free of charge on request by calling or visiting one of our banking center locations and through our website at www.cobank.com. Copies of financial reports of our affiliated Associations and the System are available on their respective websites. CoBank's 2023 Quarterly and Annual Reports to Shareholders will be available on approximately May 10, 2023, August 9, 2023, November 9, 2023, and February 29, 2024 (Annual Report).

OFFICE LOCATIONS

COBANK NATIONAL OFFICE

6340 South Fiddlers Green Circle
Greenwood Village, CO 80111
303-740-4000
800-542-8072

FARM CREDIT LEASING SERVICES CORPORATION

1665 Utica Avenue South, Suite 400
Minneapolis, MN 55416
952-417-7800
800-444-2929

WASHINGTON, D.C., OFFICE

50 F Street, N.W., Suite 900
Washington, DC 20001
202-650-5860

U.S. REGIONAL OFFICES

ATLANTA BANKING CENTER*

2300 Windy Ridge Parkway
Suite 370S
Atlanta, GA 30339
770-618-3200
800-255-7429
FCL: 770-618-3226

AUSTIN BANKING CENTER

4801 Plaza on the Lake Drive
Austin, TX 78746
855-738-6606

ENFIELD BANKING CENTER*

240B South Road
Enfield, CT 06082-4451
860-814-4043
800-876-3227
FCL: 860-814-4049

FARGO BANKING CENTER

4143 26th Avenue South
Suite 101
Fargo, ND 58104
701-277-5007
866-280-2892

LOUISVILLE BANKING CENTER*

2000 High Wickham Place
Suite 101
Louisville, KY 40245
502-423-5650
800-262-6599
FCL: 800-942-3309

LUBBOCK BANKING CENTER*

5715 West 50th
Lubbock, TX 79414
806-788-3700
FCL: 806-788-3705

MINNEAPOLIS BANKING CENTER*

1665 Utica Avenue South
Suite 400
Minneapolis, MN 55416
952-417-7900
800-282-4150
FCL: 800-444-2929

OMAHA BANKING CENTER*

18205 Capitol Avenue
Suite 325
Omaha, NE 68022
402-492-2000
800-346-5717

SACRAMENTO BANKING CENTER*

3755 Atherton Road
Rocklin, CA 95765
916-380-3524
800-457-0942
FCL: 800-289-7080

SPOKANE BANKING CENTER

601 West Riverside Avenue
Suite 650
Spokane, WA 99201
509-363-8700
800-378-5577

STERLING BANKING CENTER

229 South 3rd Street
Sterling, CO 80751
970-521-2774

ST. LOUIS BANKING CENTER*

635 Maryville Centre Drive
Suite 130
St. Louis, MO 63141
314-835-4200
800-806-4144
FCL: 800-853-5480

WICHITA BANKING CENTER*

245 North Waco
Suite 130
Wichita, KS 67202
316-290-2000
800-322-3654
FCL: 800-322-6558

* Farm Credit Leasing office within this CoBank location

INTERNATIONAL REPRESENTATIVE OFFICE

350 Orchard Road
#15-07 Shaw House
Singapore 238868
65-6534-526

DESIGN: Watermark (wmkagency.com)

6340 South Fiddlers Green Circle
Greenwood Village, Colorado 80111
800.542.8072