FORWARD TOGETHER

2019 ANNUAL REPORT

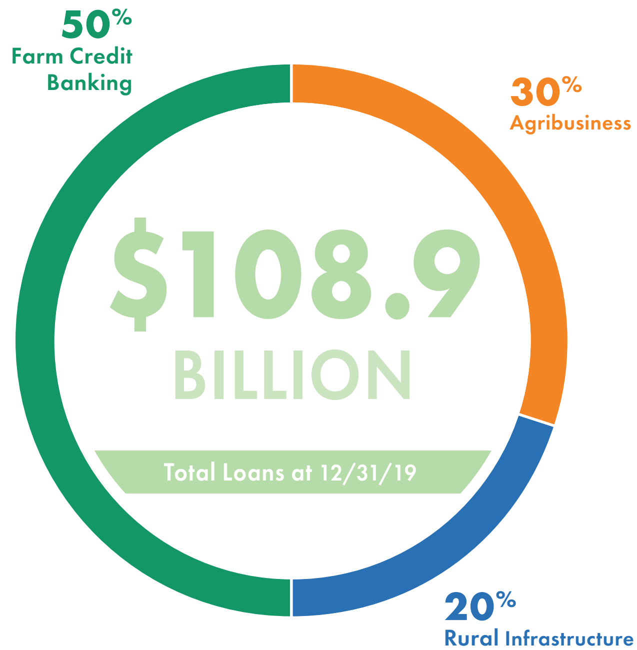
FINANCIAL HIGHLIGHTS

FOR THE YEAR ($ in millions)	2019	2018	2017
Net Interest Income	$ 1,399	$ 1,431	$ 1,393
Provision for Loan Losses	57	66	42
Net Income	1,091	1,191	1,125
Patronage Distributions	644	700	610

AT YEAR-END ($ in millions)	2019	2018	2017
Agribusiness	$ 33,168	$ 32,432	$ 30,304
Farm Credit Banking	54,459	50,695	47,948
Rural Infrastructure	21,227	21,367	21,014
Total Loans	$ 108,854	$ 104,494	$ 99,266
Allowance for Credit Losses	$ 747	$ 703	$ 671
Total Assets	145,004	139,016	129,211
Total Shareholders' Equity	10,567	9,535	9,060

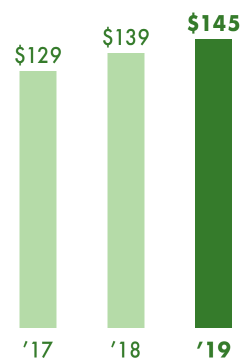
FINANCIAL RATIOS	2019	2018	2017
Return on Average Common Equity	11.63 %	14.60 %	14.20 %
Return on Average Assets	0.79	0.90	0.89
Return on Average Active Patron Investment	19.48	22.35	20.70
Net Interest Margin	1.02	1.09	1.12
Total Capital Ratio	15.86	15.58	15.24
Tier 1 Leverage Ratio	7.51	7.53	7.26

KEY METRICS



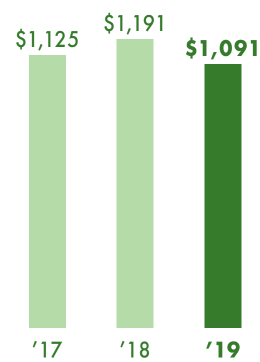
TOTAL ASSETS

($ in billions)



NET INCOME

($ in millions)



PATRONAGE DISTRIBUTIONS

($ in millions)

TOTAL SHAREHOLDERS' EQUITY

($ in billions)

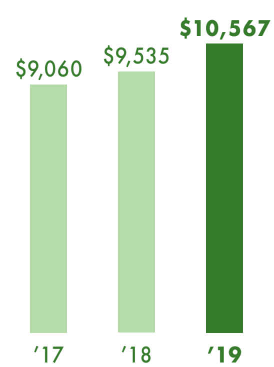


TABLE OF CONTENTS

"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 SIMILAR BUSINESSES FOR THE BENEFIT OF RURAL AMERICA."

LETTER TO SHAREHOLDERS

TO OUR CUSTOMERS AND OTHER STAKEHOLDERS

We're pleased to report that CoBank recorded another year of strong business performance in 2019 on behalf of our customer-owners and other stakeholders. The bank generated nearly $1.1 billion in net income—the third-highest level of earnings in the history of the business—and will distribute more than $640 million to stockholders in cash and stock patronage. Loan volume reached all-time highs. Credit quality in our loan portfolio remained solid, as did our levels of liquidity and capital. We ended the year in exceptionally sound financial and operational condition, and well positioned to continue fulfilling our mission in rural America.

For our board and executive team, these results are particularly gratifying given the considerable headwinds we face in the external marketplace environment. Competition in the financial services industry continues to intensify, exerting persistent downward pressure on lending margins. Low interest rates and the shape of the yield curve have combined to make it harder to generate revenue and earnings growth. Demand for credit continues to be influenced by a variety of factors beyond our control, including agricultural commodity prices and the overall level of growth in the rural economy. Meanwhile, technology is fundamentally changing the business of banking and how credit is priced and delivered, and at an accelerating rate. That includes the commercial and industrial lending space where CoBank operates. For that reason, it is imperative that we continue to invest in the business in order to ensure we have the right technology, products, services and human capital we will need to be competitive long into the future.

As detailed below, we believe we succeeded in 2019 in navigating these challenges and in balancing the many competing priorities we face as a mission-driven, customer-owned financial cooperative. We also believe we met our obligation to transparently communicate our

THOMAS HALVERSON
President & CEO

KEVIN G. RIEL
Board Chair

performance to stockholders through robust, thoughtful financial disclosure throughout the year. This report is an important part of that transparency. We urge our customers to carefully review this letter as well as the much more detailed information contained in the Management's Discussion & Analysis section beginning on page 31 and in the accompanying financial statements and footnotes. We hope the entire annual report is useful to you and that it provides you with a comprehensive understanding of CoBank's financial performance and the opportunities and challenges we face as we manage CoBank on behalf of our customer-owners.

Loan Volume

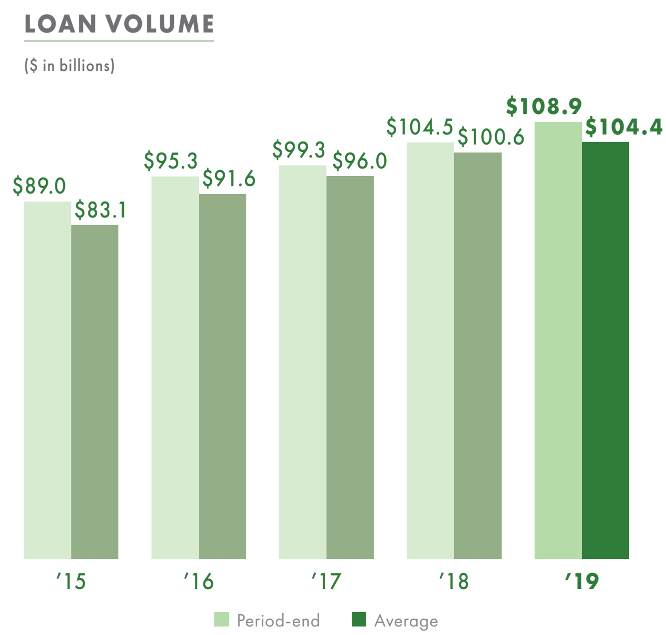
For the full-year 2019, CoBank's average loan and lease volume increased approximately 4%, to $104.4 billion. We ended the year with $108.9 billion in outstanding loans, a record high for CoBank.

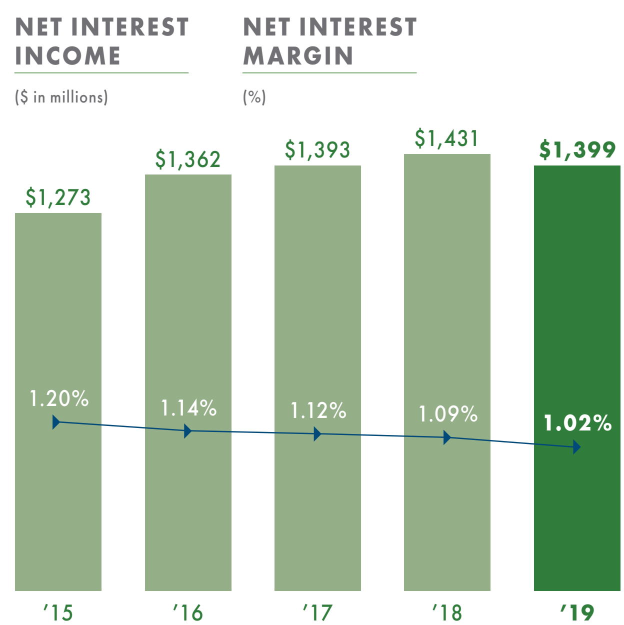
CoBank conducts its lending operations through three operating segments—Agribusiness, Farm Credit Banking and Rural Infrastructure. Each of these segments comprises a subset of individual businesses with differing economics and distinct customer profiles. Growth at the operating segment level can vary widely from year to year, impacting margins, net income, patronage, credit quality and other enterprise-wide financial performance measures.

In 2019, a substantial majority of CoBank's loan growth was generated in the Farm Credit Banking segment, which includes the wholesale loans we provide as a funding bank to 21 affiliated Farm Credit associations serving more than 70,000 farmers and ranchers across the country. Loans in this portion of our portfolio generally have lower spreads, commensurate with the lower risk profile of association borrowers and the lower regulatory capital requirements for these loans. As of year-end, the Farm Credit Banking segment accounted for approximately 50% of outstanding loans. Going forward, it will be important that we also commensurately grow our portfolio of higher-margin loans to Agribusiness and Rural Infrastructure customers. Our board and executive team are highly focused on these businesses and committed to expanding the breadth and depth of our commercial lending relationships across all the industries we serve.

Net Interest Income and Net Interest Margin

Despite the overall increase in average loan volume, CoBank's net interest income (NII) decreased by 2% in 2019,





to $1.399 billion. NII is the difference in interest we earn on loans to customers and other interest-earning assets and the interest we pay on the Farm Credit System debt issued to fund those assets. Given the nature of our business as a balance-sheet lender, NII is the single most important component of earnings for CoBank.

NII fell in 2019 primarily due to the combination of two factors that more than offset the benefit of loan growth. One factor was a decline in our treasury earnings related to balance sheet positioning activities and our liquidity investment portfolio, which were negatively impacted by continuing low interest rates as well as the shape of the yield curve. The other factor was a decrease in lending spreads, which declined due to higher funding costs and continuing strong marketplace competition for the business of our customers.

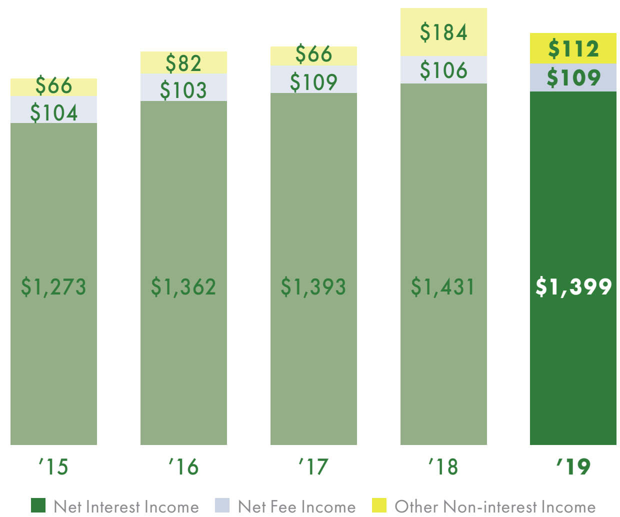
Net interest margin for the year was 1.02%, compared to 1.09% in 2018. Net interest margin expresses the relationship between interest-bearing assets and liabilities and is an important profitability ratio for CoBank, analogous to gross margin in other companies. CoBank's margins have been compressing for several years due to the factors noted above as well as the changing mix of our interest-earnings assets, in particular the growth of our Farm Credit Banking operating segment and in our liquidity investments. We remain focused on optimally managing our assets and liabilities and on positioning CoBank for the current and anticipated interest rate environment.

Net Income

Net income for CoBank declined 8% to $1.091 billion in 2019, from $1.191 billion in 2018. One of the principal reasons for the decrease in earnings was the reduction in net interest income outlined above. Even more significant, however, was the fact that we recorded a $68.7 million decline in noninterest income due primarily to the impact of non-recurring events in 2018, including the refund of excess insurance fund premiums from the Farm Credit System Insurance Corporation (FCSIC) as well as proceeds from the sales of investment securities acquired through our merger with U.S. AgBank in 2012. Though these non-recurring items gave a substantial boost to net income in 2018, they also exacerbated the year-over-year decline in net income in 2019. In addition, operating expenses increased approximately 11% in 2019 due to substantial investments in information technology, enterprise data management, digital banking services and other components of our operating platform.

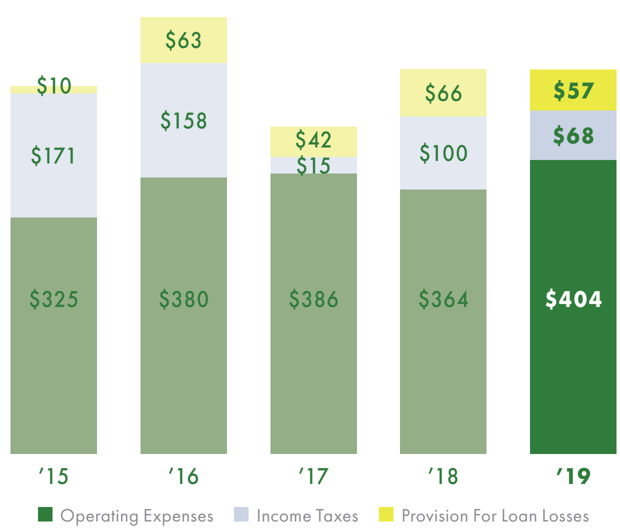
REVENUE

($ in millions)



OPERATING EXPENSES AND PROVISIONS FOR LOAN LOSSES AND TAXES

($ in millions)



An important fact for CoBank's customer-owners and other stakeholders to keep in mind is that non-recurring income has been a meaningful contributor to CoBank's earnings for several years. The accounting treatment of assets acquired in the AgBank merger generated $294 million in merger accretion income from 2012 to 2016. Federal tax reform legislation enacted at the end of 2017 added $142 million to net income in that year. In 2018 we benefited from the aforementioned FCSIC refund and investment securities sales. Under the guidance of our board, these non-recurring income gains have been thoughtfully deployed for the benefit of our customer-owners, including through incremental patronage distributions and increased investments in our operating platform.

Going forward, however, we expect to be almost entirely reliant on recurring earnings from core business operations to pay patronage, attract and retain talent, fund investments and capitalize the growth of our loan portfolio. We will run the business without expectations of non-recurring earnings. That will include a strong emphasis on operating efficiency and cost discipline to ensure that expense growth is aligned with revenue growth.

Credit Quality

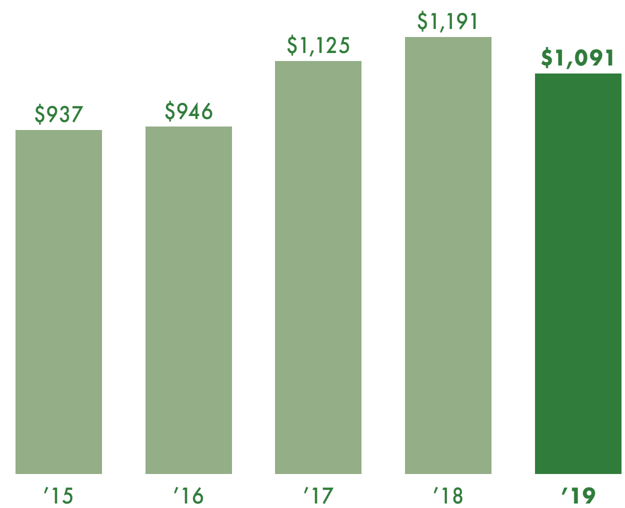
Overall portfolio loan quality remained strong for CoBank at the end of 2019, reflecting the generally strong credit profile of our customer base and the resilience our borrowers have demonstrated in the face of various headwinds in the rural economy.

We use many different measures to track credit quality. One of the most salient is the level of nonaccrual loans, meaning loans for which full collection of principal and interest by the bank is unlikely. Nonaccrual loans decreased to $240.7 million or 0.22% of total loans as of Dec. 31, 2019, compared to $326.3 million or 0.31% of total loans at the end of 2018. The 10-year trailing average for this metric is 0.24%. Another key data point is the percentage of loans in our commercial loan portfolio classified as "acceptable" (the highest category of loan quality). By that measure, credit quality declined modestly during the year, from 95.9% acceptable at the end of 2018 to 94.7% acceptable at the end of 2019. The 10-year trailing average for acceptable commercial loans is 95.3%.

The bank recorded a $57 million provision for loan losses for 2019, primarily reflecting deterioration in credit quality in our Agribusiness operating segment as well as growth in loan volume, compared to a $66 million provision in 2018.

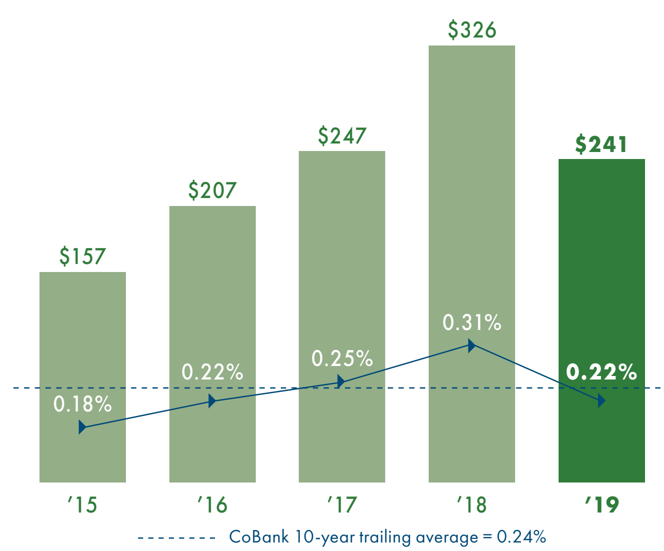
NET INCOME

($ in millions)

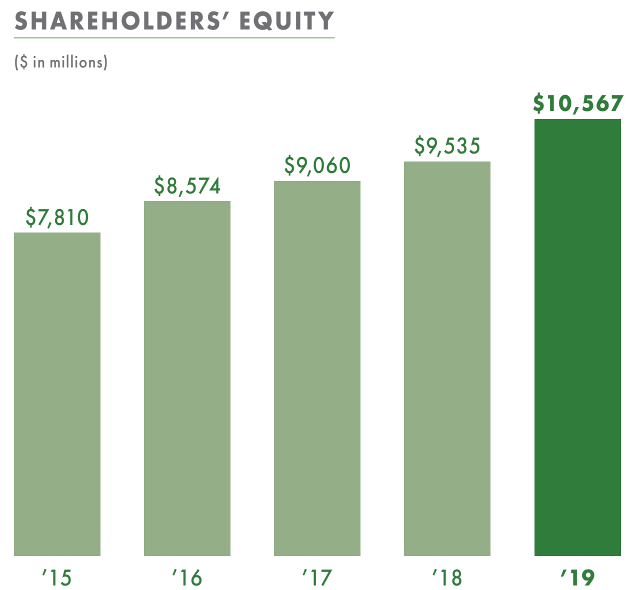


NON-ACCRUAL LOANS

($ in millions and % of total loans)



CoBank's allowance for credit losses, which protects the bank's capital base against losses inherent in our loan portfolio, totaled $747.1 million at year-end or 1.40% of nonguaranteed loans when loans to Farm Credit associations are excluded.



Capital and Liquidity

CoBank's capital and liquidity levels remain well in excess of regulatory minimums. As of Dec. 31, 2019, shareholders' equity was $10.6 billion, and the bank's total capital ratio was 15.86%, compared with the 8.0% minimum (10.5% inclusive of the capital conservation buffer) established by the Farm Credit Administration (FCA), the bank's independent regulator. At year-end, the bank held approximately $35.2 billion in cash and investments. The bank had 176 days of liquidity at the end of 2019, which substantially exceeded the FCA minimum of 90 days.

SHAREHOLDERS' EQUITY

($ in millions)	2015	2016	2017	2018	**2019**
Preferred Stock	$ 1,125	$ 1,500	$ 1,500	$ 1,500	**$ 1,500**
Common Stock	2,900	3,072	3,240	3,416	**3,622**
Retained Earnings	3,845	4,121	4,552	4,982	**5,351**
Other Comprehensive Income (Loss)	(60)	(119)	(232)	(363)	**94**
Total Shareholders' Equity	7,810	8,574	9,060	9,535	**10,567**

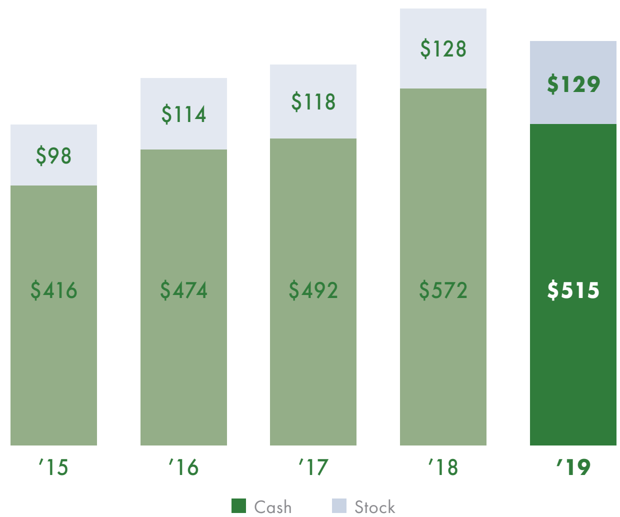
Managing capital to appropriate levels is a constant balancing and optimization process for CoBank, as it is for any financial institution. It is critical that we maintain a sufficient base of capital to fulfill our mission, support prudent levels of business risk and ensure our ability to meet the future borrowing needs of our customers. At the same time, we do not endeavor to hold capital not needed to support the business that could otherwise be returned to customer-owners. Our board and executive team are fundamentally aligned on this issue and fully committed to thoughtful, ongoing evaluation of our capital levels.

Patronage

One of our top strategic objectives each year is to deliver strong, reliable patronage returns to our customer-owners. Patronage is a central component of the CoBank value proposition and one of the most powerful tangible benefits we deliver to eligible borrowers as a member-owned financial cooperative.

PATRONAGE DISTRIBUTIONS

($ in millions)



For 2019, patronage will total $643.6 million, almost 60% of the bank's earnings for the year. That includes $603.8 million in regular cash and stock patronage, plus an additional $39.8 million all-cash special patronage payout authorized by our board in December 2019. The special patronage distribution, which our board approved unanimously, was made possible by our continuing strong financial performance and robust capital levels.

The adjacent table details 2019 patronage distributions by customer type under our various capital and patronage pools. Agribusiness, communications and project finance borrowers earned 107 basis points of patronage for the year, while rural electric and water customers earned 90 basis points. Affiliated Farm Credit associations received 40 basis points of all-cash patronage under their capital plan.

2019 PATRONAGE DISTRIBUTIONS BY POOL

($ in millions)	Regular Patronage	Special Patronage	Total Patronage	BPS*
Agribusiness, communications and project finance	$ 190	$ 18	$ 209	107
Rural electric and water	103	12	115	90
Farm Credit affiliates	185	N/A	185	40
Loans purchased from other Farm Credit institutions	110	10	120	107
Non-affiliated Farm Credit and other financing institutions	15	N/A	15	30

*Basis points of qualifying loan volume

Our Other Key Strategic Priorities

Overall, we are pleased with the bank's financial and operating performance in 2019. Financial strength and stability are vital to our ability to serve our mission and deliver value to customers in rural America. We believe our customer-owners and other stakeholders can continue to have confidence in our financial stewardship given the robust results we are delivering on their behalf.

Beyond maintaining our financial strength, our board and executive team are equally focused on a number of other key strategic business priorities that form the foundation of our business plan. Those priorities are:

- **Prudently identifying and managing risk.** As a financial institution we must ensure that the risks we assume via lending and other commercial activities are appropriate and aligned with our mission. CoBank's Risk Management Group is charged with independently overseeing the principal forms of risk inherent in our business, including credit risk, market risk, liquidity risk, operational risk, compliance risk and reputational risk. We constantly strive to improve our risk monitoring and assessment so the board and management have a clear understanding of our risk exposures while making decisions on behalf of our customer-owners and other stakeholders.
- **Building vibrant, broad and deep customer relationships and delivering a superior customer experience.** CoBank's business model is built on long-term relationships of trust and value creation between the bank and its customers. We continue to make meaningful investments in our suite of financial products and in the team of bankers and other professionals who deliver these products to our borrowers.
- **Enhancing our technology and operating platforms.** Banking is increasingly a technology business, as digitalization transforms the financial services industry and the expectations of consumers and businesses and their interactions with financial institutions. It's critical that CoBank keep pace with this trend, while also driving higher levels of efficiency in our operating platform.
- **Evolving our Farm Credit System business model.** As one of four banks in the Farm Credit System, CoBank benefits tremendously from the System's GSE (government-sponsored entity) status as well as the business relationships we have with our affiliated associations and other System institutions. System partnerships provide us with the lending capacity we need to serve customers with large borrowing needs and enhance the diversification of our portfolio. They are also an essential aspect of our broader mission to support rural communities and America's rural economy. We are committed to enhancing the value we deliver to other Farm Credit institutions as a commercial partner.

- **Investing in our people and culture.** We depend on our associates to deliver on our value proposition to customers and differentiate CoBank in the marketplace. We are relentlessly focused on building our base of human capital through recruitment, compensation, development and performance management programs. Our board and executive team are also committed to driving higher levels of diversity at all levels of the organization, and to creating an inclusive and ethical corporate culture that enables every associate to feel valued and highly engaged in their work.
- **Being a socially responsible corporate citizen.** Finally, we are deeply committed to honoring the cooperative principle of "concern for community" and are delivering on that principle through corporate philanthropy and related citizenship activities. CoBank invests in a wide range of giving programs each year that support rural communities, anti-hunger programs, disaster relief, health care, veterans' issues and a wide range of other beneficial causes. These investments are detailed in our separate annual Corporate Social Responsibility report, which we encourage you to read, and they are an essential component of CoBank-mission service.

As we move into the new year and decade, in an operating environment that remains uncertain, we are confident that CoBank will be strong and successful as we make progress against these objectives, while maintaining the financial disciplines that have underpinned our past success. We remain passionately committed to serving our customer-owners, and to the mission of CoBank and the Farm Credit System in rural America. And we remain enormously optimistic about the long-term future of our business given the inherent strength of the CoBank business model and the essential role our customer-owners play in rural communities across the country. 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 Riel

KEVIN G. RIEL
Board Chair

Tom Halverson

THOMAS HALVERSON
President and
Chief Executive Officer

2020 BOARD OF DIRECTORS

KEVIN G. RIEL // CHAIR
Occupation: Farming
Hometown: Yakima, Washington

JON E. MARTHEDAL // 1ST VICE CHAIR
Occupation: Farming
Hometown: Fresno, California

KEVIN A. STILL // 2ND VICE CHAIR
Occupation: Agribusiness Cooperative Management
Hometown: Danville, Indiana

ROBERT M. BEHR
Occupation: Agribusiness Cooperative Management
Hometown: Lakeland, Florida

MICHAEL S. BROWN
Occupation: Retired, Commercial Banking
Hometown: San Diego, California

RUSSELL G. BROWN
Occupation: Community Banking
Hometown: Warsaw, Virginia

STEPHEN EPPERSON
Occupation: Electric Cooperative Management
Hometown: Ulysses, Kansas

WILLIAM M. FARROW, III
Occupation: Retired, Commercial Banking
Hometown: Evanston, Illinois

BENJAMIN J. FREUND
Occupation: Farming
Hometown: East Canaan, Connecticut

DANIEL T. KELLEY
Occupation: Farming
Hometown: Normal, Illinois

DAVID J. KRAGNES
Occupation: Farming
Hometown: Felton, Minnesota

MICHAEL MARLEY
Occupation: Farming
Hometown: Roswell, New Mexico

GARY MILLER
Occupation: Electric Cooperative Management
Hometown: Douglasville, Georgia

CATHERINE MOYER
Occupation: Rural Communications Management
Hometown: Ulysses, Kansas

DAVID S. PHIPPEN
Occupation: Farming
Hometown: Ripon, California

SCHEHERAZADE S. REHMAN
Occupation: Professor,
International Business and Finance
Hometown: Washington, D.C.

EDGAR A. TERRY
Occupation: Farming
Hometown: Ventura, California

BRANDON J. WITTMAN
Occupation: Electric Cooperative Management
Hometown: Billings, Montana

AGRIBUSINESS PORTFOLIO

30%
OF TOTAL LOAN 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.

FOR THE YEAR ($ in millions)	2019	2018	2017
Period-end Loans	$ 33,168	$ 32,432	$ 30,304
Average Loans	32,119	31,604	29,241
Net Income	530	575	626

RURAL INFRASTRUCTURE PORTFOLIO

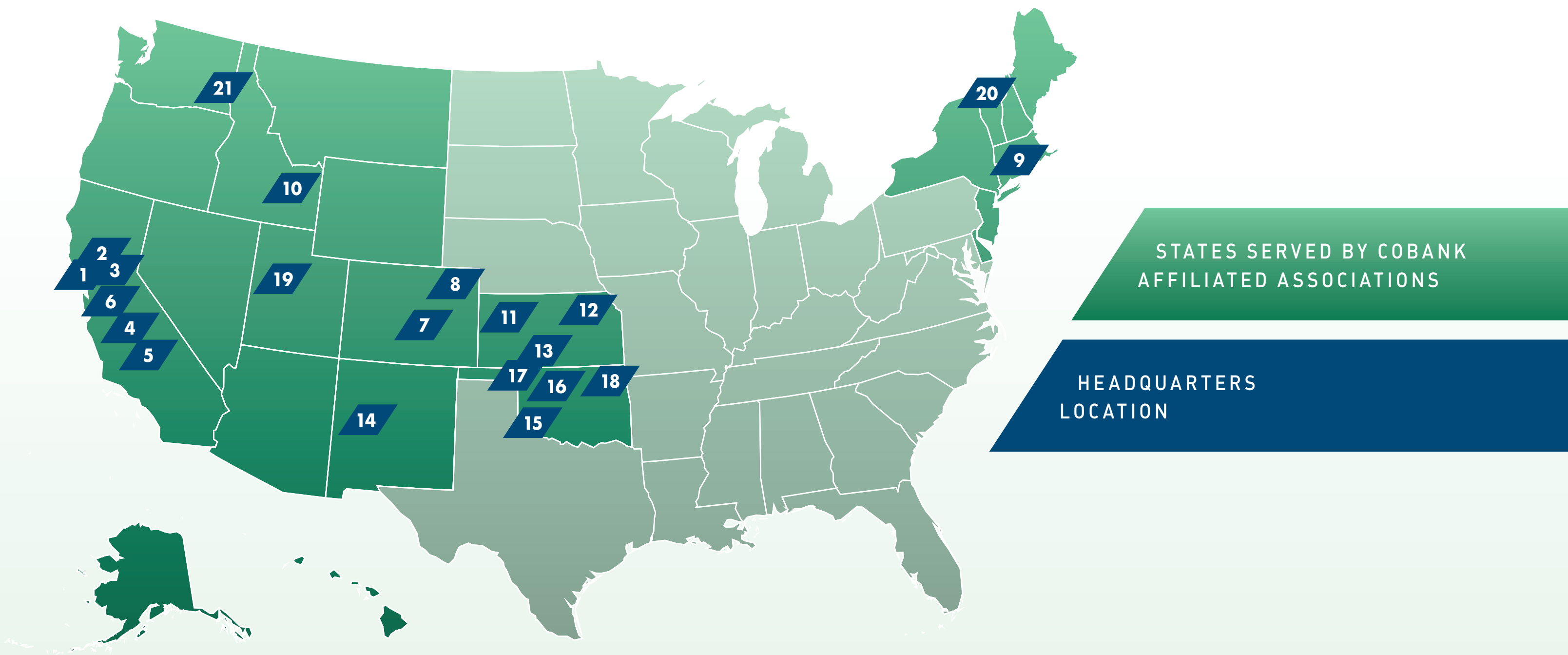
20%
OF TOTAL LOAN PORTFOLIO

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 wastewater companies; broadband, data centers, wireline, cable and wireless communications service providers; and rural health care and other community facilities.

FOR THE YEAR ($ in millions)	2019	2018	2017
Period-end Loans	$ 21,227	$ 21,367	$ 21,014
Average Loans	20,919	20,919	20,732
Net Income	338	347	238

FARM CREDIT BANKING GROUP

AFFILIATED FARM CREDIT ASSOCIATIONS



CALIFORNIA

1 American AgCredit
SANTA ROSA

2 Farm Credit Services of Colusa-Glenn
COLUSA

3 Farm Credit West
ROCKLIN

4 Fresno Madera Farm Credit
FRESNO

5 Golden State Farm Credit
KINGSBURG

6 Yosemite Farm Credit
TURLOCK

COLORADO

7 Farm Credit of Southern Colorado
COLORADO SPRINGS

8 Premier Farm Credit
STERLING

CONNECTICUT

9 Farm Credit East
ENFIELD

IDAHO

10 Idaho AgCredit
BLACKFOOT

KANSAS

11 Farm Credit of Western Kansas
COLBY

12 Frontier Farm Credit
MANHATTAN

13 High Plains Farm Credit
LARNED

NEW MEXICO

14 Farm Credit of New Mexico
ALBUQUERQUE

OKLAHOMA

15 AgPreference
ALTUS

16 Farm Credit of Enid
ENID

17 Farm Credit of Western Oklahoma
WOODWARD

18 Oklahoma AgCredit
BROKEN ARROW

UTAH

19 Western AgCredit
SOUTH JORDAN

VERMONT

20 Yankee Farm Credit
WILLISTON

WASHINGTON

21 Northwest Farm Credit Services
SPOKANE

FARM CREDIT PORTFOLIO

50%

OF TOTAL LOAN PORTFOLIO

In addition to providing loans to cooperatives and other commercial customers in all 50 states, CoBank serves as a funding bank for 21 affiliated Farm Credit associations across the country. Those associations provide loans and financial services to more than 70,000 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)	2019	2018	2017
Period-end Loans	$ 54,459	$ 50,695	$ 47,948
Average Loans	51,313	48,121	46,074
Net Income	223	269	262

REGIONAL AGRIBUSINESS

1 **ROBIN SAMPSON**
VP of Grain
Innovative Ag Services

2 **TIM KRAUSMAN**
VP of Agronomy
Innovative Ag Services

3 **RANDY SWENSON**
VP of Energy
Innovative Ag Services

4 **RICK VAUGHAN**
CEO
Innovative Ag Services

5 **MARCUS WILHELM**
Regional VP
Regional Agribusiness, CoBank

INNOVATIVE AG SERVICES

MONTICELLO, IOWA

Innovative Ag Services has followed a tried-and-true path for the U.S. grain and farm supply industry in recent years. Based in eastern Iowa, the farmer-owned cooperative has gained scale through consolidation with other area cooperatives and businesses, enabling it to enhance operating efficiency and offer better service to its farmer-members.

IAS operates more than 30 grain and farm supply facilities in Iowa and western Wisconsin, as well as an ethanol plant. The cooperative serves approximately 5,300 farmer-members who grow corn and soybeans as well as raising swine, beef, dairy and poultry. It operates in the grain, agronomy, feed, energy and building supply markets. Formed in 2005, IAS has grown primarily through acquisitions and mergers until its most recent consolidation in 2011. Since then, IAS has focused on growing its market share while keeping a keen eye out for strategic partnerships.

"Our strategic consolidations were critical to keeping up with what's going on in the industry," says Rick Vaughan, CEO of IAS. "Now, bringing more production volume from our customers to the table each year is just as valuable to our ongoing expansion and to helping us remain relevant to our members."

Such growth is necessary to meet the demands of ever larger customers; it's also critical in working with the vendors who are a key component of IAS's business. "We need to stay on our vendors' radar screens so that as they're designing new programs, we're in a position to offer input that will ultimately benefit our members," says Vaughan.

CoBank has supported IAS and its predecessor organizations with credit facilities for almost 40 years. CoBank provides seasonal financing for operating capacity and term funding for material capital expenditures, along with leasing through Farm Credit Leasing. IAS also uses cash management services to manage everyday customer and vendor transactions.

"CoBank is a one-stop shop where we can get our regular financing needs met, additional financial services and access to their industry expertise," says CFO Brenda Hoefler.

IAS's diversification is also a strategic solution to meeting both customer needs and growth plans. Many customers use more than one IAS business line, requiring strong coordination and communication among the IAS team to maintain the overall relationship, which IAS views as an opportunity.

"We strive to build strong customer relationships across business lines and through each interaction we have, so our members will want to continue to do business with us," says Hoefler.

"IAS has a very solid leadership team that understands the industry and their territory, and it has the size and scale to remain a big player in their marketplace," says Mike Hechtner, CoBank central regional president. "They're poised to continue their decades of growth, and we look forward to continuing to support them."

1 JULIE HARDY
Sr. Credit Officer
Regional Agribusiness, CoBank

2 SCOTT MEYER
Commercial Grain Merchandiser
Ursa Farmers Cooperative

3 ROGER HUGENBERG
General Manager
Ursa Farmers Cooperative

4 KENT BUCKERT
Operations Manager
Ursa Farmers Cooperative

5 TED KNORR
Board President
Ursa Farmers Cooperative

6 KAREN VOSS
Finance & Admin Manager
Ursa Farmers Cooperative

7 KENT ERHARDT
Sr. Relationship Manager
Regional Agribusiness, CoBank

URSA FARMERS COOPERATIVE

URSA, ILLINOIS

In 2020, Ursa Farmers Coop will celebrate its 100th year serving farmers in western Illinois and eastern Missouri. Founded along the Mississippi River during the final year of Woodrow Wilson's presidency, the Illinois-based cooperative originally had just one grain elevator to serve its members, with enough capacity to store 23,000 bushels of grain. A century later, Ursa now operates facilities in 10 locations with more than 15 million bushels of storage.

Roger Hugenberg, who started with Ursa in 1994 and became general manager in 2014, notes that Ursa's member farmers produce close to 30 million bushels during the fall harvest. That has forced Ursa to become extremely efficient at unloading, moving and shipping its members' grain.

"With increased customer production and competition for their grain, we need to keep our facilities updated so we can unload our members' trucks quickly," says Hugenberg. "And we'll need to keep evolving as our customers continue to grow and implement technology to harvest their fields faster, so we continue to capture market opportunities."

Ursa has been a CoBank customer since the 1950s. The cooperative relies on a number of CoBank's financial services, including seasonal lines of credit, term loans, leasing and cash management. Recently Ursa added interest rate risk management with a rate cap through CoBank to reduce its interest rate risk exposure.

"Our business requires large amounts of capital and rides seasonal cash fluctuations, and although we believe in doing business locally, the local providers don't have the size and expertise to handle our needs as CoBank does," says Hugenberg. "I and my board take comfort in knowing that we have a strong lender in CoBank, which offers multiple products, and that we ultimately share in the bank's success through patronage."

"We've worked with Ursa through some difficult times in the commodity markets and through easier times when prices are strong," says Derrick Waggoner, eastern region president with CoBank's Regional Agribusiness Banking Group. "Our goal is always to offer the right products to benefit Ursa, wherever they are in the industry and economic cycle."

CORPORATE FINANCE

1 JAMES ANDERSON
Corporate Controller
California Dairies, Inc.

2 BRAD ANDERSON
President and CEO
California Dairies, Inc.

3 MICHAEL TOUSIGNANT
Sector VP/Managing Director
Corporate Agribusiness, CoBank

4 ANDREI MIKHALEVSKY
Retired President and CEO
California Dairies, Inc.

5 MATTHEW MAXSON
Director, Financial Planning and Analysis, California Dairies, Inc.

6 PHILIP GIRARD
Senior VP and CFO
California Dairies, Inc.

CALIFORNIA DAIRIES, INC.

VISALIA, CALIFORNIA

The U.S. dairy industry is going through tough times: Demand for fluid milk from consumers has softened even as the nation's dairy farmers continue to churn out lots of supply.

As a farmer-owned dairy cooperative, California Dairies, Inc. is committed to finding solutions to these marketplace challenges. In 2019, CDI worked with CoBank to acquire the assets of a state-of-the-art nutritional milk powder manufacturing plant in Turlock, California. The new plant integrates advanced processing technology to produce a wide range of high quality milk powders, mainly for the export market.

"When we looked at the next year to five years down the road, we wanted to find ways to improve our aging infrastructure and increase processing capacity for our members," says Phil Girard, CDI's chief financial officer. "The new plant in Turlock accomplishes both of those goals and will be a great asset for us well into the future."

CDI is the largest milk marketing cooperative in California and the second largest in the U.S., manufacturing butter, milk powder, nutritional milk powder and fluid milk products. It operates seven plants throughout California, all strategically placed within 100 miles of its nearly 400 member farms. The plants generate $4 billion in annual product sales.

To finance the Turlock plant acquisition, CDI turned to CoBank, its longtime primary lender. "When we were approached with this opportunity, we required a very tight turnaround and asked CoBank to help us close the deal within 45 days, which is unheard of for a deal of this magnitude," says Girard. "We can now garner a premium return for our members from a very high specification of nutritional milk powder, and CoBank's help was instrumental in helping us accomplish this goal. If we had tried to build a plant like this, it would have taken three to four years. This deal would not have gotten done without CoBank's partnership."

CDI has also incorporated cash management and interest rate risk management into its relationship with CoBank in 2019.

"Having CoBank as our primary lender, our provider of interest rate management and cash management has brought value back to our members," says Girard. "The flexibility of CoBank to help us with our financing needs has allowed us to realign some of our priorities and opportunities."

"CDI is squarely focused on their membership, which is healthy and growing," says Michael Tousignant, managing director of CoBank's Corporate Finance division. "The deal in Turlock is an example of their management team always looking for ways to profitably market their membership's milk, and we are proud to partner with CDI."

1 ROBERT ECKERT
CFO, North America
Louis Dreyfus Company

2 MICHAEL TOUSIGNANT
Sector VP/Managing Director,
Corporate Agribusiness, CoBank

3 ADRIAN ISMAN
Regional CEO
Louis Dreyfus Company

4 SEAN COLVIN
Treasurer, North America
Louis Dreyfus Company

5 KEVIN BENSON
Sr. Relationship Manager
Capital Markets, CoBank

LOUIS DREYFUS COMPANY NORTH AMERICA

WILTON, CONNECTICUT

In 1851, a 16-year-old entrepreneur named Léopold Louis-Dreyfus began trading grain on behalf of his family farm in northeastern France, quickly establishing a successful agricultural enterprise. Today, the company that bears his family name is a global leader in ag commodities, operating in more than 100 countries and employing more than 18,000 people worldwide.

"We look on our history, long-term dedication and focus on agribusiness as a source of strength to inform our future," says Sean Colvin, Louis Dreyfus Company's treasurer for North America. "Running a business as diverse as ours requires focus, flexibility and strong relationships within the industry."

Headquartered in the Netherlands, Louis Dreyfus' diversified business covers a wide variety of commodity types, including grains and oilseeds, rice, sugar, coffee and cotton. The company's portfolio of assets spans multiple layers of the agricultural value chain, from production and processing to storage, shipping, merchandizing and distribution.

Louis Dreyfus Company North America has turned to CoBank to finance its U.S. export-related operations. The relationship includes significant loan facilities participated across the Farm Credit System. Louis Dreyfus also works with CoBank's agriculture export finance division and most recently, CoBank's interest rate risk management team.

"It is important to have a financial partner that understands the cyclicality and sometimes volatility of our industry, the challenges we face and the future we are moving toward," says Colvin. "We can rely on CoBank and the Farm Credit System to stick with us through those challenges and partner with us to find the right financial solutions."

The business of providing competitive prices for producers, domestic processing and access to global markets requires the ability to think big and focus on improving the industry as a whole. With that in mind, in addition to achieving its general business objectives, Louis Dreyfus Company has a strong focus on sustainability. Its 17 sustainable development goals are focused on improving everything from the health of various supply chains to basic human rights. Some of these policies have helped transform entire industries in the countries where it does business.

"Louis Dreyfus Company is an industry leader for a reason," says Antony Bahr, executive vice president of CoBank's Corporate Agribusiness Group. "Its vision and execution are not only a reaction to market forces, they shape the entire market, and its continued leadership on the global stage is something we are proud to support."

FARM CREDIT BANKING GROUP

1 TINA SCHOFIELD
Sr. Credit Analyst
Farm Credit East

2 WILL BAILDON
Regional VP
Regional Agribusiness, CoBank

3 JEFF MEYER
President and CEO
Baillie Lumber

4 JUSTIN BROWN
VP, Capital Markets
Farm Credit East

5 DON EICHLER
CFO
Baillie Lumber

BAILLIE LUMBER

HAMBURG, NEW YORK

Baillie Lumber started in 1923 as a wholesale lumber brokerage with a single employee. Today, the New York-based company exports U.S.-grown hardwood to 60 countries and operates in 24 states with 21 sawmills, 26 distribution facilities and a flooring manufacturer.

"We've grown slowly and intentionally while maintaining our company's culture through various business segments," says Jeff Meyer, president and CEO of Baillie. "Our focus on honesty, excellence and risk taking has made the difference over the years."

A significant part of Baillie's growth strategy is acquisition of existing hardwood businesses. In 2014 the company acquired American Hardwood Industries, along with its 10 hardwood manufacturing operations in Mississippi, Pennsylvania, Tennessee and Virginia.

Farm Credit East, one of CoBank's affiliated associations, has been the source of financing for multiple M&A transactions. "We can involve Farm Credit early in our acquisition plans because they understand the ups and downs of our business cycles and the importance of our entire business model, from lumber yards to manufacturing," says Meyer. "When a lender like Farm Credit understands how these businesses connect and how they are essential pieces to our success, it makes each deal seamless."

As it acquires new businesses, Baillie has maintained strong relationships with its customers because most of them still operate independently. It cultivates relationships over time through honesty and caring about others' success.

"Farm Credit and Baillie Lumber are both very relationship driven and share similar values, so we start our conversations from the same point of view. This really facilitates each new transaction," says Tina Schofield, Farm Credit East senior credit analyst. "Through their smart acquisitions strategy and management structure, Baillie has a distinct market advantage both here and abroad by bringing size, scope and diversity of products to a large market."

CoBank has joined Farm Credit East as a partner on multiple transactions with Baillie Lumber, providing balance sheet capacity as well as substantial experience in loan syndications and export finance. Bill Davis, executive vice president and manager of CoBank's Farm Credit Banking Group, says the combination has provided Baillie with substantial financial flexibility to pursue market opportunities as they arise.

"Our relationship with Baillie, which is possible through our strong relationship with Farm Credit East, is a great example of the Farm Credit System growing with the customer," Davis says. "It is a privilege for us to serve them and to be a part of their long-term success."

1 **DEREK CHASE**
Chase Farms

2 **CODY WHITE**
Sr. Relationship Manager
Regional Agribusiness, CoBank

3 **KORTNEY CHASE**
Chase Farms

4 **ROBERT CHASE**
Chase Farms

5 **MACK CHASE**
Chase Farms

6 **DELANEY CROUCH**
Chase Farms

7 **CHANCE CHASE**
Chase Farms

8 **GERENE DIANNE CHASE FERGUSON**
Chase Farms

9 **DALLAS CROUCH**
Chase Farms

10 **RICHARD CHASE**
Chase Farms

11 **LANDON RENEAU**
Relationship Manager
CoBank Farm Credit Leasing

12 **AMY MUNSON**
Sr. Relationship Officer
Farm Credit of New Mexico

JAYCE CROUCH
Chase Farms
Not Pictured

CHASE PECAN
We're serious about our nuts.

CHASE FARMS

ARTESIA, NEW MEXICO

It takes 10 years for a single pecan tree to reach its full production value. By definition, therefore, succeeding as a pecan grower requires a long-term mindset.

But Chase Farms in southeast New Mexico has demonstrated what's possible when patience and vision are combined with hard work and steady investment. Starting with a single small farm in the 1980s, the Chase family has built the largest pecan growing operation in the world, with 8,000 acres of pecan trees producing 20 million pounds of in-shell nuts annually.

"It's been an incredible ride," says Richard Chase, owner of Chase Farms. "We've seen the ups and downs of the industry, we've helped it grow from just a domestic market to an international market and we've helped build an industry-wide organization that advocates for pecan growers and processors."

Since the 1990s, Chase Farms has been a customer of Farm Credit of New Mexico, one of CoBank's affiliated associations. Credit provided by the association, as well as CoBank, has helped to finance land acquisitions, equipment and a pecan processing facility that processes 125,000 pounds of pecans per day.

"Farm Credit of New Mexico and CoBank have been instrumental in helping us expand our operations," says Chase. "Because they understand our capital needs for equipment, inputs and land, we know we can easily go to them for help."

Today, the family is focused on developing new markets for their nuts. Domestically, they're working to get consumers to "think outside the pie" into new products, and internationally, the company has developed relationships in 45 countries.

"The Chase family has done an outstanding job of growing in the right way," says Amy Munson, Farm Credit of New Mexico's relationship manager for the Chase family.

"It's exciting to be part of a growing industry and to partner with one of the most successful families in the pecan industry," says Bill Davis, executive vice president of CoBank's Farm Credit Banking Group. "The vision of both the Chase family and Farm Credit New Mexico has helped pushed the pecan industry forward and I can't wait to see where it will head next."

ELECTRIC DISTRIBUTION

1 JUSTIN BROWN-VAUGHN
Sr. Credit Analyst
Electric Distribution, CoBank

2 JULIANA PUERTA
Sr. Accountant
SECO Energy

3 JAMES DUNCAN
CEO
SECO Energy

4 KURT MORRIS
VP
Electric Distribution, CoBank

5 GENE KANIKOVSKY
CFO
SECO Energy

6 ROSA RAETTIG
Sr. Accountant
SECO Energy

7 TOM McDANIEL
Controller
SECO Energy

SECO ENERGY

SUMTERVILLE, FLORIDA

In an era when many rural electricity providers are experiencing slow growth in demand, SECO Energy faces an unusual challenge.

The Florida-based electric distribution cooperative serves one of the fastest-growing counties in the country, thanks in large part to a steady influx of senior citizens to The Villages, a 32-square-mile, multi-site retirement community spread across three of the seven counties that SECO serves. The community accounts for a large number of the 6,000 new meters SECO adds each year.

"Our customers place a high value on both reliability and affordability of their electrical power," says Gene Kanikovsky, SECO's chief financial officer. "It's our job to deliver that, both for existing customers and new people moving into the area."

Another challenge to SECO's reliability goals are periodic threats from hurricanes, a common occurrence in Florida. Its proactive response to getting affected customers back online quickly is to stage crews in advance who stand ready to begin restoring power as soon as the danger has passed. "As a member-owned, member-focused organization, it's important that we're ready to respond to any outages as quickly as possible," says Kanikovsky.

With many customers on fixed incomes, cost is also a key concern, so SECO supports customers' distributed generation and energy efficiency efforts, even providing free energy efficiency audits to help customers reduce their energy usage. It also works to keep its cost of funds low, which ultimately benefits its members. This year, the cooperative worked with CoBank to access a new source of low-cost funds: a $20 million long-dated loan placement through which CoBank's Capital Markets team secured an institutional investor for financing. This new approach supplemented the more traditional loans and leases SECO has accessed through CoBank since becoming a customer in 2008, a lending relationship that now stands at $81.6 million in loan commitments and includes leasing of their entire fleet.

"This was a new financing solution for us. Without CoBank it would have been very complicated and the benefits more difficult to achieve," says Kanikovsky.

"SECO consistently makes sound financial decisions, diversifying and staying within their risk profile," says Bill LaDuca, sector vice president and manager of CoBank's Electric Distribution division. "They have also recognized new financing options to further strengthen their balance sheet and provide flexibility to pursue their goals."

WATER & COMMUNITY FACILITIES

1 JULIA McCUSKER
Regional VP
Water and Community Facilities, CoBank

2 RONALD DUNSBERGEN
Board President
Iowa Regional Utilities Assoc.

3 JIM LaPLANT
CEO
Iowa Regional Utilities Assoc.

4 MATTHEW MAHLER
Deputy CEO
Iowa Regional Utilities Assoc.

5 SHARON KENINGER
Accountant
Iowa Regional Utilities Assoc.

6 DANIEL BRANDT
Board VP
Iowa Regional Utilities Assoc.

IOWA REGIONAL UTILITIES ASSOCIATION

NEWTON, IOWA

Iowa Regional Utilities Association was founded in the late 1970s to deliver water to a single rural county. Today, IRUA is a much larger enterprise, providing regional water and wastewater service to 19 counties in central and northeast Iowa, including 67 communities and 15,000 farms as well as rural residents and multiple industrial parks.

IRUA's strategy has been based on the concept of "regionalization"—combining small local water systems to gain efficiencies and economies of scale. The utility has been highly effective at building partnerships with adjoining communities and nearby residents to meet the demand for its services.

"Regional water and wastewater systems like IRUA are the only way folks living in rural Iowa can receive safe, potable water and wastewater services at an affordable price," says Jim LaPlant, IRUA CEO. "These services are critically important to the vitality of rural America and are essential to rural economic development."

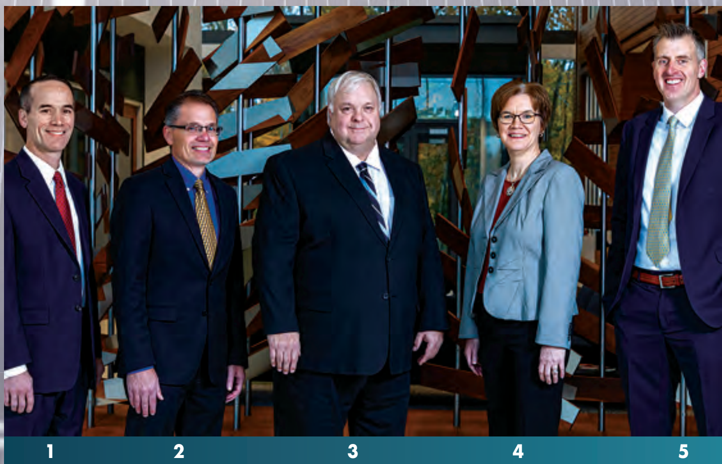
IRUA is focused on keeping its rates affordable by maintaining an adequate customer base as it faces the ongoing shift of population from rural to urban areas. In addition to actively seeking to team up with customers and communities adjacent to its current boundaries, IRUA invests in more densely populated rural areas—those that surround larger cities and suburbs—within its existing service territory.

For 30 years, CoBank has financed IRUA's delivery of clean, safe and reliable water—which has been recognized as the best tasting water in the country by the National Rural Water Association. Beginning with a $9 million construction loan in the early 1990s, CoBank today provides $49 million in commitments for lines of credit and term loans, including a 2019 $7.7 million refinancing that is expected to deliver a substantial interest savings over the remaining loan term. CoBank also provides cash management services so that excess cash is directed to the line of credit account every day to reduce interest expense.

"CoBank is our key financial partner in developing new projects, sometimes on a very short timeline to meet EPA compliance schedules and to enable us to meet all the conditions to close state or federal loans," says LaPlant. "The CoBank water team understands our business and works with us to develop and use the right financial products for our needs."

"IRUA's leadership has been extremely savvy in leading their system to tremendous growth even as the population they traditionally serve is shrinking," says Chris Shaffner, CoBank senior vice president of Water and Community Facilities. "By building relationships and collaborations, they've overcome previous boundaries to deliver an essential service to their rural communities."

POWER, ENERGY & UTILITIES



1 NOIEL FONTAINE
Regional Manager
CoBank Farm Credit Leasing

2 JEFF CONRAD
COO
Wabash Valley Power Alliance

3 JAY BARTLETT
CEO
Wabash Valley Power Alliance

4 THERESA YOUNG
CFO
Wabash Valley Power Alliance

5 JOSH BATCHELDER
VP
Power Supply, CoBank

WABASH VALLEY POWER ALLIANCE

INDIANAPOLIS, INDIANA

Indiana-based Wabash Valley Power Alliance relies on a range of power sources to generate electricity for rural communities in three states, from coal and nuclear to renewables and natural gas. For president and CEO Jay Bartlett, continuing to diversify WVPA's "fuel mix" is a top strategic priority.

"It's incredibly important for us to build a diverse power supply portfolio," Bartlett says. "Doing so reduces our power supply risk, should regulatory changes or other events affect one of our generation channels, such as stronger carbon restrictions on coal plants. It also leads to stable, competitive pricing to our members."

Founded in 1963, WVPA is a G&T co-op that provides electrical power to 23 member electric distribution co-ops. Those co-ops in turn deliver power to more than 300,000 homes, schools, farms and businesses in all or parts of 60 rural counties in Indiana and nearly 40 in parts of Illinois and Missouri.

In response to demand from customers, WVPA has doubled the share of renewables* in its power portfolio over the last two years, to 14% in 2020. Community solar arrays—all located within electric distribution members' service territories and with the electricity generated available for purchase by their customers—are a cornerstone of their renewable strategy.

"Adding more renewables to our portfolio expands our diversification, delivers on our customers' interest and makes sense for the environment," says Bartlett.

In 2019, WVPA began a second community solar array venture, an $8 million project financed with CoBank. Through its leasing subsidiary, CoBank enabled WVPA to take advantage of federal tax credits to meaningfully reduce the installation costs.

CoBank has provided loan financing to WVPA for decades, and currently has $347 million in loan commitments to WVPA held directly or syndicated to other Farm Credit institutions. These credit facilities have financed general liquidity, generation infrastructure, and more recently, WVPA's expansion into transmission, a strategy designed to build more reliability in its delivery network.

"We believe CoBank is a very forward-thinking institution that's focused on managing risk while also innovating on behalf of its members," says Bartlett. "We appreciate their financing and also look to them as a valued and knowledgeable industry partner."

"WVPA's diverse power portfolio and expansion into transmission have strengthened their ability to deliver cost-effective, reliable power," says Todd Telesz, senior vice president of CoBank's Power, Energy and Utilities division. "We applaud their strategic approach, and look forward to supporting them as they move forward."

*Renewables: WVPA invests in the development of renewable projects in a variety of ways. WVPA has constructed several smaller solar arrays near the communities it serves and it contracts with energy producers for the electricity output from wind farms and large-scale solar arrays. WVPA also purchases electricity from biogas created by large dairy farms in its service territory and finally, it captures the methane gas that escapes from landfills and turns that gas into electricity. However, because WVPA sells the majority of the renewable attributes associated with the electricity produced by these renewable power sources to third parties, it cannot "claim" those kilowatts that are generated as renewable within its supply portfolio. By selling these attributes, commonly referred to as "RECS", WVPA not only enables other organizations to meet their renewable energy goals, but also the revenue generated from these sales helps it to lower wholesale power costs to its 23 member distribution cooperatives.

COMMUNICATIONS

1 JACKIE BOVE
Sector VP
Communications, CoBank

2 ALLEN ARVIG
CEO
Arvig

3 STACI MALIKOWSKI
CFO
Arvig

4 DAVID ARVIG
COO
Arvig

ARVIG

PERHAM, MINNESOTA

Simply surviving as a service provider in the rural communications industry is no mean feat. What was once a slow-moving utility business focused only on telephony voice services is now a fast-paced, rough-and-tumble industry that changes constantly with technology.

Nonetheless, Minnesota-based Arvig has found a way to not only survive, but to thrive in this challenging market environment. The family- and employee-owned company has done so by holding fast to a disciplined expansion strategy, completing 20 acquisitions over the past two decades.

"If you just sit still, you won't survive very long because competitors will take advantage of any opportunities you pass up," CEO Allen Arvig says.

"All of our acquisitions have been carefully pursued to enhance our existing expertise," says Staci Malikowski, Arvig's CFO. "In this industry, companies really need to identify what they're good at and then spend their resources in those areas."

Beginning in 1950 as a small, family-owned local telephone company, Arvig now serves 40,000 phone, 50,000 internet and 21,800 video customers in Iowa, Minnesota, North Dakota and South Dakota. It delivers broadband, fiber transport and backhaul, residential and business telephone, television and managed IT services.

Three generations of Arvigs fill key roles in the organization, including CEO Allen and COO David. The company has also established an employee stock ownership program, which today puts 40% of the company's equity in employees' hands.

Arvig remains committed to its acquisition strategy. Its most recent transaction—a $235 million purchase of a large fiber asset—was completed in late 2018. CoBank, Arvig's longtime primary lender, financed the project, along with a number of syndication partners in the Farm Credit System. The deal also enabled Arvig to refinance existing debt and provided additional liquidity.

"CoBank delivers the capital we need and helps us keep our financing within Farm Credit, so we receive the additional benefit of patronage," says Malikowski. "They're also an important strategic partner with deep industry knowledge and insight that we rely on."

In addition to acquisitions, Arvig continues to build out its member base, and to maintain and enhance its network so it can continue to deliver best-in-class broadband and entertainment services to its customers.

"Arvig understands that continued growth and diversification are essential to remaining viable in this quickly changing industry," says Ted Koerner, senior vice president of CoBank's Communications division. "Their strategic investments in fiber infrastructure and acquisitions have positioned them to continue to grow. We look forward to continuing to provide them financial support."

PROJECT FINANCE

1 **KYLE HARBAUGH**
Sr. Vice President, IT and Product Mgmt.
CPower

2 **MICHAEL ABRAMSON**
CFO
CPower

3 **MICHAEL GEE**
Managing Director
Project Finance, CoBank

4 **SHELLEY SCHOP**
Sr. Vice President, Operations
CPower

5 **JOHN HORTON**
President and CEO
CPower

6 **GLENN BOGARDE**
Sr. Vice President, Sales
CPower

7 **BRIAN GOLDSTEIN**
Sr. Vice President, Project Finance
CoBank

8 **CONSTANTINE DAMASKOS**
Sr. Vice President,
Market Development
CPower

CPOWER

BALTIMORE, MARYLAND

CPower Energy Management serves a diverse base of customers across the United States, from large retailers, industrial companies and data centers to hospitals, schools and government facilities. But as varied as its customers are, they all share a common objective: to reduce the cost and consumption of electricity.

Based in Maryland, CPower helps customers take advantage of "demand-side energy management" programs offered by utilities to maintain balance in the power grid. Customers are paid by utilities for meeting these programs' goals, and CPower receives a portion of the resulting revenues.

"We're passionate about helping our customers reduce energy usage and costs, while also helping the power grid become more reliable, more sustainable and cost effective," says John Horton, CPower's CEO.

CPower has delivered strong business and financial performance since its founding in 2014. The company has been adding an average of 150 new customers annually and last year increased earnings by 40%.

In 2019, CPower was acquired by longtime CoBank customer LS Power, a New York-based electricity generation and transmission company with a substantial renewable power portfolio. CoBank supported the transaction as a joint lead arranger for a $150 million credit facility. "We are excited to work with a long-standing partner, CoBank, to support the ongoing growth of CPower's unmatched energy management platform," says LS Power CEO Paul Segal.

"CoBank took the time to understand us, how we operate and the value we deliver to our customers," says Horton. "We appreciate their expertise in the power sector, and are proud to be a value-added partner in delivering reliable electricity service to communities throughout the country."

"By helping to reduce energy load at the source, CPower is an important contributor to reliability in the national energy grid, and to expanding sustainability efforts," says Brian Goldstein, senior vice president in CoBank's Project Finance group. "We're excited to support this dedicated and successful company as it continues to grow and deliver value to its customers."

VALUE PROPOSITION

"CoBank is a financially strong, **DEPENDABLE**, 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 an efficient operating platform, 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."

TABLE OF CONTENTS

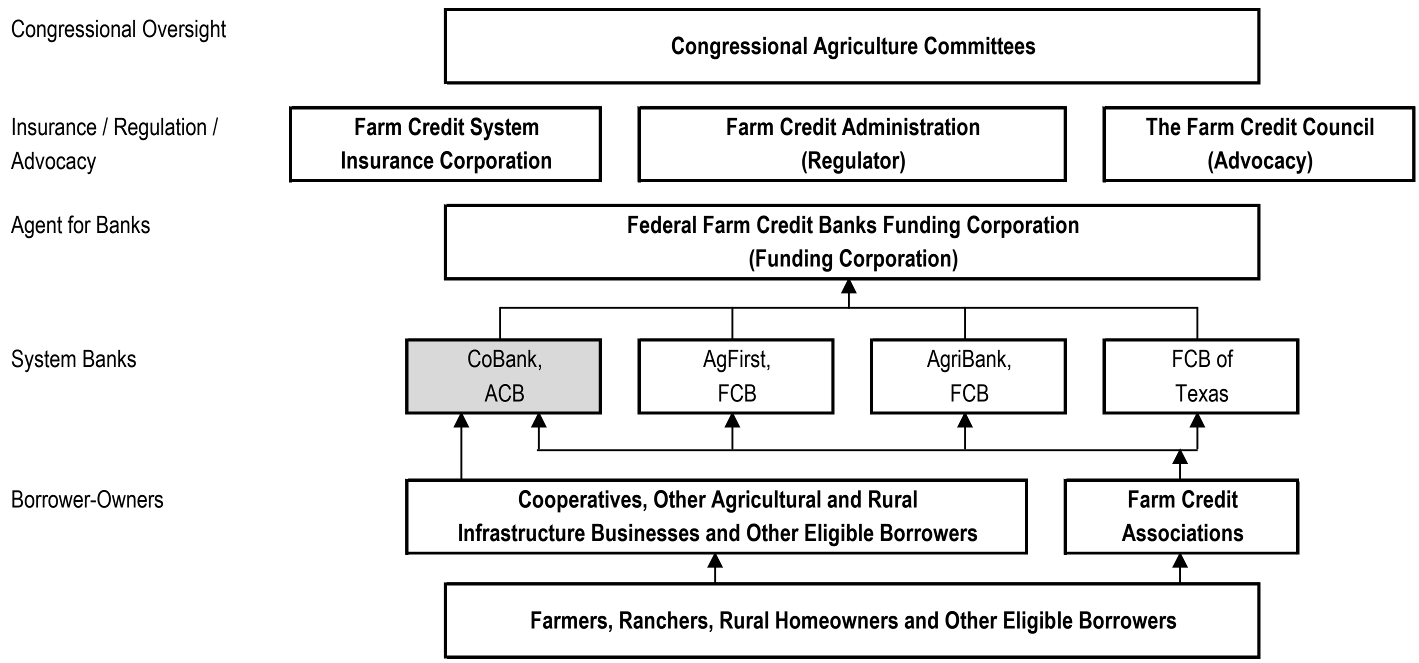
COBANK 2019 FINANCIAL REPORT

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 Federal Farm Credit Banks Funding Corporation (Funding Corporation). Such securities are the joint and several obligations of the four System banks.

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.” Additional information about our affiliated Associations is contained in Note 19 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.

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” beginning on page 59.

Financial Condition and Results of Operations

Overview

CoBank’s loans outstanding grew 4 percent to $108.9 billion as of December 31, 2019, compared to $104.5 billion at the end of 2018. Our average loan volume was $104.4 billion during 2019, an increase of 4 percent compared to $100.6 billion in 2018. The increases in both year-end and average loan volume resulted primarily from growth in lending to Associations in our Farm Credit Banking operating segment and to customers in our Agribusiness operating segment.

Our net income decreased 8 percent to $1.091 billion in 2019 compared to $1.191 billion in 2018. This decrease primarily resulted from decreases in noninterest income and net interest income, as well as an increase in operating expenses. These items were somewhat offset by lower provisions for income taxes and loan losses in 2019.

While our overall loan quality measures remain strong, we experienced deterioration in certain credit quality metrics in 2019. Special Mention loans and accrued interest, excluding wholesale loans to Associations, increased to 2.67 percent of total loans and accrued interest at December 31, 2019 from 1.88 percent at December 31, 2018. Adversely classified loans and accrued interest increased to 1.30 percent of total loans and accrued interest at December 31, 2019 compared to 1.21 percent at December 31, 2018. These increases primarily resulted from deterioration in credit quality in our Agribusiness and Rural Infrastructure operating segments. Nonaccrual loans improved to $240.7 million at December 31, 2019 from $326.3 million at December 31, 2018 primarily due to payment activity on existing nonaccrual loans, somewhat offset by credit quality deterioration impacting a small number of customers in our Agribusiness operating segment. Nonaccrual loans were 0.22 percent of total loans at December 31, 2019 compared to 0.31 percent of total loans at December 31, 2018.

Our capital and liquidity positions remain strong as of December 31, 2019. Shareholders’ equity increased to $10.6 billion at year-end 2019, compared to $9.5 billion at year-end 2018. Our total capital ratio was 15.86 percent as of December 31, 2019, compared to the regulatory minimum requirement of 8.00 percent (10.50 percent inclusive of the fully phased-in capital conservation buffer). As of year-end 2019, we held a total of $35.2 billion in investments, federal funds sold and other overnight funds, and cash primarily as a liquidity reserve, and our days liquidity was 176 days.

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,	**2019**	**2018**	**2017**	**2016**	**2015**
Consolidated Statement of Income Data					
Net Interest Income	**$ 1,398,559**	$ 1,431,296	$ 1,392,825	$ 1,361,778	$ 1,273,335
Provision for Loan Losses	**57,000**	66,000	42,000	63,000	10,000
Noninterest Income	**220,913**	289,660	175,233	184,885	169,773
Operating Expenses	**403,502**	363,807	385,673	379,702	325,315
Provision for Income Taxes	**67,742**	100,374	15,064	158,285	171,120
Net Income	**$ 1,091,228**	$ 1,190,775	$ 1,125,321	$ 945,676	$ 936,673
Net Income Distributed					
Patronage Distributions:					
Common Stock	**$ 128,428**	$ 127,910	$ 118,570	$ 114,258	$ 98,117
Cash	**475,341**	475,571	491,856	473,853	415,982
Special Cash	**39,839**	96,187	-	-	-
Total Patronage Distributions	**643,608**	699,668	610,426	588,111	514,099
Preferred Stock Dividends	**87,537**	86,938	84,704	77,232	59,179
Total Net Income Distributed	**$ 731,145**	$ 786,606	$ 695,130	$ 665,343	$ 573,278
Consolidated Balance Sheet Data					
Total Loans	**$ 108,854,253**	$ 104,493,855	$ 99,265,505	$ 95,258,281	$ 89,040,580
Less: Allowance for Loan Losses	**654,764**	621,591	576,927	558,974	486,144
Net Loans	**108,199,489**	103,872,264	98,688,578	94,699,307	88,554,436
Investment Securities, Federal Funds Sold and Other Overnight Funds	**34,235,944**	32,591,720	27,905,378	28,515,188	24,504,448
Cash and Cash Equivalents	**948,669**	1,368,075	1,313,620	1,660,517	3,113,101
Other Assets	**1,619,961**	1,183,598	1,303,237	1,255,614	1,298,581
Total Assets	**$ 145,004,063**	$ 139,015,657	$ 129,210,813	$ 126,130,626	$ 117,470,566
Debt Obligations with Maturities ≤ 1Year	**$ 60,398,618**	$ 58,797,868	$ 52,568,630	$ 50,788,645	$ 45,904,672
Debt Obligations with Maturities > 1Year	**71,831,548**	68,834,315	65,837,653	64,796,055	61,968,079
Reserve for Unfunded Commitments	**92,302**	81,649	93,865	103,496	115,444
Other Liabilities	**2,114,702**	1,766,892	1,650,588	1,868,672	1,671,902
Total Liabilities	**134,437,170**	129,480,724	120,150,736	117,556,868	109,660,097
Preferred Stock	**1,500,000**	1,500,000	1,500,000	1,500,000	1,125,000
Common Stock	**3,621,577**	3,415,654	3,240,445	3,072,232	2,899,728
Unallocated Retained Earnings	**5,350,891**	4,982,383	4,551,600	4,121,409	3,845,728
Accumulated Other Comprehensive Income (Loss)	**94,425**	(363,104)	(231,968)	(119,883)	(59,987)
Total Shareholders' Equity	**10,566,893**	9,534,933	9,060,077	8,573,758	7,810,469
Total Liabilities and Shareholders' Equity	**$ 145,004,063**	$ 139,015,657	$ 129,210,813	$ 126,130,626	$ 117,470,566
Key Financial Ratios					
For the Year:					
Return on Average Common Shareholders' Equity	**11.63 %**	14.60 %	14.20 %	12.40 %	13.57 %
Return on Average Total Shareholders' Equity	**10.77**	13.14	12.75	11.25	12.34
Return on Average Assets	**0.79**	0.90	0.89	0.78	0.86
Net Interest Margin	**1.02**	1.09	1.12	1.14	1.20
Net Charge-offs / Average Loans	**0.01**	0.03	0.04	0.00	0.01
Patronage Distributions / Total Average Common Stock Owned by Active Borrowers	**19.48**	22.35	20.70	21.32	19.76
At Year-end:					
Debt / Total Shareholders' Equity (: 1)	**12.72**	13.58	13.26	13.71	14.04
Total Shareholders' Equity / Total Assets	**7.29 %**	6.86 %	7.01 %	6.80 %	6.65 %
Allowance for Credit Losses(1) / Total Loans	**0.69**	0.67	0.68	0.70	0.68
Common Equity Tier 1 Capital Ratio(2)	**12.70**	12.38	11.67	n/a	n/a
Tier 1 Capital Ratio(2)	**14.83**	14.57	13.97	n/a	n/a
Total Capital Ratio(2)	**15.86**	15.58	15.24	n/a	n/a
Tier 1 Leverage Ratio(2)	**7.51**	7.53	7.26	n/a	n/a
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio(2)	**3.24**	3.19	2.96	n/a	n/a
Permanent Capital Ratio	**14.95**	14.69	14.29	15.47	14.95

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

(2) On January 1, 2017, CoBank implemented revised regulatory capital requirements, as required by the FCA. As a result, this ratio is not applicable for periods ending prior to this date.

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,	2019			2018			2017		
($ 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	$ 104,351	3.53 %	$ 3,688	$ 100,644	3.33 %	$ 3,349	$ 96,047	2.71 %	$ 2,603
Investment Securities, Federal Funds Sold and Other Overnight Funds	32,690	2.39	780	30,081	2.27	682	28,851	1.86	538
Total Interest-earning Assets	$ 137,041	3.26	$ 4,468	$ 130,725	3.08	$ 4,031	$ 124,898	2.51	$ 3,141
Interest-bearing Liabilities									
Bonds and Notes	$ 114,807	2.43 %	$ 2,787	$ 107,523	2.19 %	$ 2,356	$ 100,690	1.60 %	$ 1,607
Discount Notes	10,658	2.39	255	12,448	1.81	225	13,242	0.96	127
Subordinated Debt	-	-	-	-	-	-	226	2.21	5
Other Notes Payable	821	3.29	27	1,005	1.89	19	1,120	0.80	9
Total Interest-bearing Liabilities	$ 126,286	2.43	$ 3,069	$ 120,976	2.15	$ 2,600	$ 115,278	1.52	$ 1,748
Interest Rate Spread		0.83			0.93			1.00	
Impact of Equity Financing	$ 10,135	0.19		$ 9,068	0.16		$ 8,837	0.12	
Net Interest Margin and Net Interest Income		1.02 %	$ 1,399		1.09 %	$ 1,431		1.12 %	$ 1,393

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)]

	2019			2018		
($ 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	$ 118	$ 221	$ 339	$ 18	$ 728	$ 746
Investment Securities, Federal Funds Sold and Other Overnight Funds	60	38	98	3	141	144
Total Interest Income	178	259	437	21	869	890
Total Interest Expense	84	385	469	(183)	1,035	852
Changes in Net Interest Income	$ 94	$ (126)	$ (32)	$ 204	$ (166)	$ 38

(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 decreased $32.7 million, or 2 percent, to $1,399 million in 2019, compared to $1,431 million in 2018. The decrease in net interest income was primarily driven by lower earnings on balance sheet positioning and lower overall spreads in our loan and investment portfolios, partially offset by higher average loan volume and an increase in earnings on invested capital. Average loan volume increased $3.8 billion, or 4 percent, to $104.4 billion in 2019 primarily as a result of growth in lending to Associations in our Farm Credit Banking operating segment and to customers in our Agribusiness operating segment. Average investment securities, federal funds sold and other overnight funds increased to $32.7 billion in 2019 from $30.1 billion in 2018.

Net interest margin declined to 1.02 percent in 2019 from 1.09 percent in 2018, and interest rate spread decreased to 0.83 percent in 2019 from 0.93 percent in 2018. The reduction in our net interest margin included the impact of lower earnings on balance sheet positioning, lower loan and investment spreads and changes in asset mix, including increased lending to affiliated Associations and agricultural export finance customers and higher levels of investment securities, all of which have lower spreads commensurate with lower risk. Loan spreads also decreased due to higher funding costs and continued competition for the business of our customers. These drivers were somewhat offset by an increase in earnings on invested capital which benefitted net interest margin.

Net interest income increased $38.5 million, or 3 percent, to $1,431 million in 2018, compared to $1,393 million in 2017. The increase in net interest income was primarily driven by higher average loan volume, including an increase in lending in our Agribusiness operating segment, and an increase in earnings from our invested capital. These items were partially offset by lower earnings on balance sheet positioning, slightly lower spreads in our loan portfolio and lower fair value accretion income resulting from merger accounting. Average loan volume increased $4.6 billion, or 5 percent, to $100.6 billion in 2018 primarily as a result of growth in lending to grain and farm supply cooperatives in our Agribusiness operating segment and Associations in our Farm Credit Banking operating segment. Average investment securities, federal funds sold and other overnight funds increased to $30.1 billion in 2018 from $28.9 billion in 2017.

Net interest margin declined to 1.09 percent in 2018 from 1.12 percent in 2017, and interest rate spread decreased to 0.93 percent in 2018 from 1.00 percent in 2017. The reduction in our net interest margin included the impact of lower earnings on balance sheet positioning, lower fair value accretion income and slightly lower spreads in our loan portfolio, reflective of strong competition for the business of our customers. These drivers were somewhat offset by an increase in earnings on invested capital.

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 66. The table on page 39 summarizes the activity in our allowance for credit losses, by operating segment, for the past five years.

We recorded a $57.0 million provision for loan losses in 2019. The provision primarily reflects deterioration in credit quality in our Agribusiness operating segment in addition to growth in average loan volume. The $57.0 million total provision for loan losses included a $53.0 million provision in our Agribusiness operating segment and a $4.0 million provision in our Rural Infrastructure operating segment.

We recorded a $66.0 million provision for loan losses in 2018. The provision largely reflects increases in specific reserves associated with a small number of customers in our Agribusiness and Rural Infrastructure operating segments and growth in average loan volume. The $66.0 million total provision for loan losses included a $54.0 million provision in our Agribusiness operating segment and a $12.0 million provision in our Rural Infrastructure operating segment.

Adversely classified loans and accrued interest increased to 1.30 percent of total loans and accrued interest at December 31, 2019, compared to 1.21 percent at December 31, 2018 and 1.00 percent at December 31, 2017. The increases in adversely classified loans and accrued interest in 2019 and 2018 were primarily driven by deterioration in credit quality associated with a small number of customers in our Agribusiness and Rural Infrastructure operating segments.

Total nonaccrual loans improved by $85.6 million to $240.7 million, or 0.22 percent of total loans, at December 31, 2019 from $326.3 million, or 0.31 percent of total loans, at December 31, 2018 primarily due to payment activity on existing nonaccrual loans, somewhat offset by credit quality deterioration impacting a small number of customers in our Agribusiness and Rural Infrastructure operating segments. Total nonaccrual loans increased to $326.3 million, or 0.31 percent of total loans, at December 31, 2018 from $246.8 million, or 0.25 percent of total loans, at December 31, 2017 primarily resulting from credit quality deterioration impacting a small number of customers in our Agribusiness and Rural Infrastructure operating segments. We recorded loan charge-offs, net of recoveries, of $13.2 million in 2019 compared to $33.6 million and $33.7 million in 2018 and 2017, respectively. The charge-offs in 2019 and 2018 related to a small number of customers in our Agribusiness and Rural Infrastructure operating segments while the charge-offs in 2017 related to a small number of customers in our Agribusiness operating segment only.

Our allowance for credit losses was $747.1 million at December 31, 2019, compared to $703.2 million and $670.8 million as of December 31, 2018 and 2017, respectively. The allowance for credit losses represented 0.69 percent of total loans as of the end of 2019, compared to 0.67 percent and 0.68 percent of total loans at December 31, 2018 and 2017, respectively. At December 31, 2019, our allowance for credit losses represented 1.40 percent of non-guaranteed loans excluding wholesale loans to Associations, compared to 1.33 percent at December 31, 2018 and 2017.

Refer to “Enterprise Risk Profile – Credit Risk Management” beginning on page 43 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,	**2019**	**2018**	**2017**
Net Fee Income	**$ 108,708**	$ 106,247	$ 109,160
Patronage Income	**91,428**	75,835	63,970
Prepayment Income	**17,221**	14,754	18,585
Losses on Early Extinguishments of Debt	**(16,619)**	(15,021)	(42,088)
Gains on Sales of Investment Securities	**892**	49,074	9,387
Return of Excess Insurance Funds	**13,789**	35,045	-
Other, Net	**5,494**	23,726	16,219
Total Noninterest Income	**$ 220,913**	$ 289,660	$ 175,233

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

Total noninterest income decreased in 2019 to $220.9 million, or by 24 percent, from $289.7 million in 2018. The decline in noninterest income resulted largely from a decrease in gains on sales of investment securities and a lower level of excess insurance funds returned from the Farm Credit System Insurance Corporation (Insurance Corporation) related to the Farm Credit Insurance Fund (Insurance Fund). Other net noninterest income also decreased in 2019 due to a sales tax reserve recorded in 2019 and proceeds received in 2018 related to the disposition of warrants which had been obtained in a previous loan restructuring. These decreases in noninterest income were somewhat offset by a higher level of patronage income.

Our net fee income, which includes arrangement fees and unused commitment fees, among others, increased to $108.7 million in 2019 compared to $106.2 million in 2018 primarily due to a higher level of arrangement and other fee income in our Rural Infrastructure operating segment.

Patronage income, which represents patronage received from other System institutions for loans we sold to them, increased to $91.4 million in 2019 compared to $75.8 million in 2018. This increase reflects greater levels of loans sold to affiliated Associations and other System institutions as well as higher levels of patronage paid by System institutions.

Prepayment income increased to $17.2 million in 2019 from $14.8 million in 2018. Losses on early extinguishments of Systemwide Debt Securities were $16.6 million in 2019 compared to $15.0 million in 2018. During 2019, we extinguished $207.8 million of Systemwide Debt Securities compared to $1,831 million in 2018. The 2018 debt extinguishments included $1,471 million in Systemwide Debt Securities sold at market value to other Farm Credit Banks. While it is our general practice to extinguish debt to offset the current and prospective impact of prepayments in our loan and investment portfolios, the availability in the market of similarly–tenored debt, coupled with the timing of prepayments, do not always allow us to fully offset the impact of prepayments.

During 2019, we sold investment securities for total proceeds of $2.3 billion for gains totaling $0.9 million. In 2018 and 2017, sales of investment securities resulted in gains totaling $49.1 million and $9.4 million, respectively. The sale of investment securities is discussed in "Liquidity and Capital Resources" beginning on page 60.

Other net noninterest income decreased to $5.5 million in 2019 from $23.7 million in 2018 primarily due to a sales tax reserve recorded in 2019 and proceeds received in 2018 related to the disposition of warrants which had been obtained in a previous loan restructuring.

In 2018, total noninterest income increased to $289.7 million, or by 65 percent, from $175.2 million in 2017. The higher level of noninterest income was primarily driven by an increase in gains on sales of investment securities, the return of $35.0 million in excess insurance funds from the Insurance Fund in 2018, a decrease in losses on early extinguishments of debt, net of prepayment income, and an increase in patronage 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,	**2019**	**2018**	**2017**
Employee Compensation	**$ 203,952**	$ 184,853	$ 172,540
General and Administrative	**30,110**	27,482	29,331
Information Services	**46,189**	38,138	35,776
Insurance Fund Premium	**52,810**	52,100	83,686
Travel and Entertainment	**18,966**	18,418	18,247
Farm Credit System Related	**16,284**	15,569	15,823
Occupancy and Equipment	**16,718**	16,055	16,020
Purchased Services	**18,473**	11,192	14,250
Total Operating Expenses	**$ 403,502**	$ 363,807	$ 385,673
Total Operating Expenses/ (Net Interest Income + Net Fee Income)	**26.8 %**	23.7 %	25.7 %
Operating Expenses, Excluding Insurance Fund Premium/ (Net Interest Income + Net Fee Income)	**23.3**	20.3	20.1

Total operating expenses increased 11 percent in 2019 to $403.5 million, compared to $363.8 million for 2018. The higher level of operating expenses was primarily driven by increases in employee compensation, information services and purchased services expenses.

Employee compensation expense, which includes salaries, incentive compensation and employee benefits, increased to $204.0 million in 2019 from $184.9 million in 2018 primarily due to an increase in the number of employees to support increased investments in our operating and technology platforms and other new business initiatives as well as to maintain high levels of customer service. Employee compensation expense also increased due to annual merit increases, compensation expenses related to lease originations that are no longer deferred and amortized under the new lease accounting standard and a reduction in reimbursements related to our digital banking activities. As of December 31, 2019, we had 1,115 employees, compared to 1,050 and 1,002 at December 31, 2018 and 2017, respectively.

General and administrative expenses increased to $30.1 million in 2019, compared to $27.5 million in 2018. General and administrative expenses include contributions and other support provided to civic, charitable and other organizations that benefit the residents, communities and industries we serve in rural America, consistent with our overall corporate social responsibility program and the fulfillment of our mission.

Information services expense, which includes the cost of hardware, software, network infrastructure and related support services, increased to $46.2 million in 2019 from $38.1 million in 2018 due to greater expenditures to enhance our service offerings, technology platforms and digital banking capabilities.

Insurance Fund premium expenses were $52.8 million in 2019, compared to $52.1 million in 2018. Insurance Fund premium rates are set by the Insurance Corporation and were 9 basis points of average outstanding adjusted insured debt obligations for 2019 and 2018. The Insurance Corporation announced a premium rate of 8 basis points of average outstanding adjusted insured debt obligations for the first half of 2020. 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 $19.0 million in 2019 from $18.4 million in 2018 due to a greater level of expenditures for customer-facing activities and other business travel.

Farm Credit System related expenses increased to $16.3 million in 2019 compared to $15.6 million in 2018. 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 (a System bank and its affiliated Associations) and the level of bank assets.

Occupancy and equipment expenses increased to $16.7 million in 2019 from $16.1 million in 2018. Occupancy and equipment expenses include rent, maintenance and repairs related to our corporate headquarters and other banking center offices.

Purchased services expenses increased to $18.5 million in 2019 from $11.2 million in 2018 primarily due to increased consulting fees related to enhancement of our data and enterprise information management capabilities as well as a higher level of professional fees.

Total operating expenses as a percent of net interest income plus net fee income were 26.8 percent in 2019 compared to 23.7 percent in 2018 and 25.7 percent in 2017. Excluding the impact of Insurance Fund premium expense, operating expenses as a percent of net interest income plus net fee income were 23.3 percent in 2019, compared to 20.3 percent in 2018 and 20.1 percent in 2017.

The $21.9 million decrease in total operating expenses in 2018 compared to 2017 was primarily driven by a decrease in Insurance Fund premium expenses. Insurance Fund premium rates were 9 basis points of average outstanding adjusted insured debt obligations for 2018 compared to 15 basis points for 2017. This item was partially offset by an increase in employee compensation expense, which grew in 2018 due to an increase in the number of employees to support new business initiatives and maintain high levels of customer service, annual merit increases and a higher level of incentive compensation reflective of strong business and financial performance.

Provision for Income Taxes

Our provision for income taxes decreased to $67.7 million in 2019 from $100.4 million in 2018, and the effective tax rate declined to 5.8 percent for 2019 compared to 7.8 percent in 2018. The provisions for income taxes in both periods were impacted by non-recurring adjustments. The 2019 provision for income taxes included a $30.2 million favorable adjustment reflecting amendments to our 2015 through 2017 federal and state tax returns to realize the benefit of certain equipment leasing transactions. The 2019 provision for income taxes also contained a net benefit of $6.2 million primarily resulting from a change in methodology related to state income tax rates. Our 2018 provision for income taxes included a $15.8 million tax benefit which resulted from a change in accounting estimate to reflect the full effects of the enactment of federal tax legislation in late 2017.

Excluding the aforementioned non-recurring adjustments, the provision for income taxes was $104.1 million in 2019 compared to $116.2 million in 2018 and the effective tax rate was 9.0 percent in both periods. The favorable impact on the 2018 provision for income taxes of a higher level of special patronage in 2018, as discussed on page 64, was offset by lower state income tax expense in the 2019 provision for income taxes.

Our provision for income taxes was $15.1 million in 2017 and our effective tax rate was 1.3 percent for that period. The 2017 provision for income taxes included the benefit of $142.3 million in net deferred tax adjustments recorded in 2017 resulting from the enactment of federal tax legislation which, among other things, lowered the federal corporate tax rate from 35 percent to 21 percent beginning in 2018. In accordance with accounting principles generally accepted in the United States of America (GAAP), the change to the lower corporate tax rate led to a remeasurement of our deferred tax liabilities and deferred tax assets in the period of enactment (2017). Our primary deferred tax liabilities relate to timing differences generated by our leasing subsidiary, which is included in our Agribusiness operating segment. Our primary deferred tax assets relate to our allowance for credit losses and employee benefit plans, which impact both our Agribusiness and Rural Infrastructure operating segments. The $142.3 million net adjustment included a $253.5 million benefit from the remeasurement of deferred tax liabilities, the substantial majority of which, as noted above, related to our leasing subsidiary. This impact to deferred tax liabilities was somewhat offset by a $111.2 million expense from the remeasurement of deferred tax assets, of which $80.2 million relates to the allowance for credit losses.

Excluding the impact of the nonrecurring adjustments related to the new tax legislation, our provision for income taxes was $116.2 million in 2018 compared to $157.4 million in 2017, and our effective tax rate was 9.0 percent in 2018 compared to 13.8 percent in 2017. These decreases were primarily due to the reduction in the federal corporate tax rate beginning in 2018.

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.

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 over 100 financial institutions, including System institutions. In 2019, we syndicated or sold approximately $22.7 billion of loan commitments 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, commercial credit card and merchant card processing 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 15 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,	2019	2018[(1)]	2017[(1)]
Operating Segment:			
Agribusiness	**$ 530,219**	$ 574,563	$ 625,604
Farm Credit Banking	**222,561**	268,957	261,728
Rural Infrastructure	**338,448**	347,255	237,989
Total	**$ 1,091,228**	$ 1,190,775	$ 1,125,321

(1) Previous to 2019, certain corporate and other information to reconcile total reportable segments with total consolidated results were separately disclosed as "Corporate/Other". Such amounts are now allocated to operating segments and prior-year amounts have been reclassified to conform to the current presentation

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

December 31,	2019	2018	2017	2016	2015
Agribusiness	**$ 33,168**	$ 32,432	$ 30,304	$ 28,660	$ 26,131
Farm Credit Banking	**54,459**	50,695	47,948	45,994	43,358
Rural Infrastructure	**21,227**	21,367	21,014	20,604	19,552
Total Loans	**$ 108,854**	$ 104,494	$ 99,266	$ 95,258	$ 89,041

Average Loan Portfolio by Operating Segment ($ in Millions)

Year Ended December 31,	2019	2018	2017	2016	2015
Agribusiness	**$ 32,119**	$ 31,604	$ 29,241	$ 27,563	$ 24,872
Farm Credit Banking	**51,313**	48,121	46,074	43,924	40,414
Rural Infrastructure	**20,919**	20,919	20,732	20,092	17,770
Total Average Loans	**$ 104,351**	$ 100,644	$ 96,047	$ 91,579	$ 83,056

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

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

	2019	2018	2017	2016	2015
Beginning of Year	**$ 703,240**	$ 670,792	$ 662,470	$ 601,588	$ 596,836
Charge-offs:					
Agribusiness	**(8,782)**	(33,575)	(35,675)	(4,276)	(2,668)
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**(7,500)**	(2,135)	-	(324)	(5,597)
Total Charge-offs	**(16,282)**	(35,710)	(35,675)	(4,600)	(8,265)
Recoveries:					
Agribusiness	**2,492**	1,927	1,644	747	1,977
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**616**	231	353	1,735	1,040
Total Recoveries	**3,108**	2,158	1,997	2,482	3,017
Net Charge-offs	**(13,174)**	(33,552)	(33,678)	(2,118)	(5,248)
Provision (Reversal) Charged (Credited) to Earnings:					
Agribusiness	**53,000**	54,000	43,650	71,000	(30,800)
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**4,000**	12,000	(1,650)	(8,000)	40,800
Total Provision (Reversal) Charged (Credited) to Earnings	**57,000**	66,000	42,000	63,000	10,000
End of Year	**$ 747,066**	$ 703,240	$ 670,792	$ 662,470	$ 601,588
Components:					
Allowance for Loan Losses	**$ 654,764**	$ 621,591	$ 576,927	$ 558,974	$ 486,144
Reserve for Unfunded Commitments	**92,302**	81,649	93,865	103,496	115,444
Total Allowance for Credit Losses (ACL)	**$ 747,066**	$ 703,240	$ 670,792	$ 662,470	$ 601,588
ACL/Total Loans	**0.69 %**	0.67 %	0.68 %	0.70 %	0.68 %
ACL/Non-guaranteed Loans (Excluding Loans to Associations)	**1.40**	1.33	1.33	1.37	1.36
ACL/Impaired Loans	**296**	214	271	264	382
ACL/Nonaccrual Loans	**310**	216	272	320	384
Net Charge-offs / Average Loans	**0.01**	0.03	0.04	0.00	0.01

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

December 31,	2019	2018	2017	2016	2015
Agribusiness	**$ 548,966**	$ 502,256	$ 479,904	$ 470,285	$ 402,814
Farm Credit Banking	**-**	-	-	-	-
Rural Infrastructure	**198,100**	200,984	190,888	192,185	198,774
Total Allowance for Credit Losses	**$ 747,066**	$ 703,240	$ 670,792	$ 662,470	$ 601,588

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 portion of Agribusiness loan volume finances seasonal grain inventories, through the use of lines of credit, for agricultural cooperatives. 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.

Our Agribusiness customers face challenges including widely fluctuating supplies of commodities in global markets and the attendant price volatility, evolving domestic and global market demand, changing U.S. trade policy and agreements, increasing regulation and the ongoing impact from currency fluctuations. These trends, along with the need to attract high-quality leadership, manage risk, and remain competitive, have led some 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, 2019, the AEFD had $5.9 billion in loans outstanding, 20 percent of which were guaranteed by the U.S. government under the GSM program, compared to $5.8 billion in loans outstanding as of December 31, 2018, 18 percent of which were guaranteed under the GSM program. Over the last five 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 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, 2019 and 2018, FCL had $3.6 billion and $3.4 billion, respectively, in leases outstanding.

2019 Performance

Agribusiness loans outstanding totaled $33.2 billion at December 31, 2019, compared to $32.4 billion at December 31, 2018. The increase in Agribusiness loans outstanding resulted from increased lending in farm supply and grain marketing, and higher lease volume. Average loan volume increased 2 percent to $32.1 billion in 2019 from $31.6 billion in 2018. The increase in average Agribusiness volume resulted primarily from increased lending to agricultural export finance customers and food and agribusiness 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,	2019	2018	2017	2016	2015
Commodity					
Corn:					
High	**$ 4.55**	$ 4.12	$ 4.05	$ 4.39	$ 4.43
Low	**3.40**	3.30	3.29	3.01	3.47
Soybeans:					
High	**9.40**	10.71	10.80	12.09	10.62
Low	**7.91**	8.11	9.00	8.52	8.44
Wheat:					
High	**5.58**	5.93	5.75	5.24	6.15
Low	**4.18**	4.13	3.95	3.60	4.59

Our Agribusiness segment generated $530.2 million in net income for 2019, a $44.4 million decrease from $574.6 million in net income for 2018. This decrease was primarily due to an increase in operating expenses, decreases in noninterest income and net interest income, partially offset by a lower provision for income taxes.

Net interest income in our Agribusiness segment decreased $5.5 million in 2019 as compared to 2018 primarily due to lower earnings on balance sheet positioning and lower overall spreads in our Agribusiness loan portfolio reflective of continued competition for the business of our customers. The impact of spread reduction was somewhat offset by growth in average loan volume.

We recorded a $53.0 million provision for loan losses in our Agribusiness operating segment in 2019, compared to $54.0 million in 2018. The 2019 provision reflects deterioration in overall credit quality and growth in loan volume. The 2018 provision resulted primarily from increases in specific reserves associated with a small number of customers and growth in loan volume.

While overall Agribusiness credit quality remains strong, we experienced deterioration in 2019. We believe further deterioration could result from market factors impacting our customers, including an ongoing volatile agricultural commodity price environment, trade disputes between the United States and its trading partners, declining farm income and weather related events. 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 were $220.4 million at December 31, 2019 as compared to $288.1 million at December 31, 2018. Agribusiness recorded loan charge-offs, net of recoveries, of $6.3 million in 2019 as compared to $31.6 million for 2018. Charge-offs largely related to several agribusiness customers who experienced financial distress in 2019 and 2018, respectively.

Noninterest income in our Agribusiness segment decreased by $23.7 million in 2019 largely due to a lower level of excess insurance funds returned from the Insurance Corporation and a sales tax reserve recorded in 2019. This decrease was somewhat offset by higher levels of patronage income received from other System institutions on loan participations we sold to them.

Operating expenses in our Agribusiness segment increased by $24.1 million in 2019, primarily due to increases in employee compensation, information services, purchased services and general and administrative expenses, as described on pages 36 and 37.

Agribusiness income tax expense decreased to $35.6 million in 2019, as compared to $43.6 million in 2018 primarily due to the favorable tax adjustment booked in 2019 to reflect amendments to 2015-2017 federal and state tax returns as discussed on page 37.

Farm Credit Banking

Overview

The Farm Credit Banking operating segment includes wholesale loans from the direct funding relationships we have with our 21 affiliated Association customer-owners and our wholesale funding relationships with other System institutions. Our affiliates include 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.

2019 Performance

As of December 31, 2019, loans in the Farm Credit Banking operating segment totaled $54.5 billion, compared to $50.7 billion at December 31, 2018. Average loan volume increased 7 percent to $51.3 billion in 2019 compared to $48.1 billion in 2018. The increase in outstanding and average loan volume primarily resulted from greater overall lending to agricultural producers and processers by our affiliated Associations. At year-end 2019 and 2018, these loans included $49.6 billion and $45.8 billion, respectively, in wholesale loans to our affiliated Associations and $4.9 billion of participations in wholesale loans made by other System banks to certain of their affiliated Associations. Such participations included $3.9 billion as of December 31, 2019 and 2018 in loans made by the Farm Credit Bank of Texas (FCBT). The balance of participations of $1.0 billion as of December 31, 2019 and 2018 represent wholesale loans made by AgFirst Farm Credit Bank.

Farm Credit Banking net income totaled $222.6 million in 2019, compared to $269.0 million for 2018. The decrease primarily resulted from lower noninterest income and net interest income.

Farm Credit Banking net interest income decreased to $259.1 million for 2019, from $275.0 million for 2018 primarily due to lower earnings on balance sheet positioning somewhat offset by the impact of 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 downgraded credit quality classifications of three affiliated Association wholesale loans and a participation in a wholesale loan made by FCBT to one of its affiliated Associations as discussed beginning on page 46, 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 decreased to $6.4 million in 2019 from $34.4 million in 2018 resulting from significantly higher gains recognized on the sale of investment securities attributed to the Farm Credit Banking operating segment in the 2018 period. The operating results of Farm Credit Banking in 2019 and 2018 did not benefit from the previously mentioned returns of excess insurance funds from the Insurance Corporation because these amounts were passed on directly to our Association customers since premium assessments are also directly passed on to them.

Operating expenses in 2019 increased to $43.0 million from $40.4 million in 2018 primarily due to increases in employee compensation, information services, purchased services and general and administrative expenses, as described on pages 36 and 37.

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 water industries as well as to community facilities in rural America. Primary products and services provided include term loans, bonds, revolving lines 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, 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 when needed for credit purposes and refinances USDA loans. These activities target rural water and wastewater systems, 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.

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, 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, make environmental upgrades 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 and 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 presence in this competitive but growing industry.

Water industry customers include rural water and waste water 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. 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 investments in certain Rural Business Investment Companies (RBICs). Our investments in RBICs focus on small and middle market companies that create jobs and prosperity in rural America.

2019 Performance

Rural Infrastructure loans outstanding decreased slightly to $21.2 billion at December 31, 2019 compared to $21.4 billion at December 31, 2018. Average loan volume remained consistent at $20.9 billion in 2019 and 2018. Loan volume reflects increases to rural power, energy, communications, and water and community facilities borrowers and decreases in electric distribution loans resulting from loan sales to Farmer Mac. During February 2019, we entered into a master participation agreement with Farmer Mac under which each party may purchase from the other participation interests in eligible loans. In connection with the agreement, we sold $776.5 million of non-patronage, electric distribution loans to Farmer Mac in 2019. We remain the servicer of these loans.

Rural Infrastructure net income decreased to $338.4 million for 2019 from $347.3 million for 2018. The decrease was primarily driven by decreases in noninterest income and net interest income as well as an increase in operating expenses. These items were partially offset by lower provisions for income taxes and loan losses.

Net interest income decreased $11.4 million in 2019 as compared to 2018, primarily due to interest income recognized in 2018 related to a nonaccrual loan which was paid off in 2018, lower earnings on balance sheet positioning and spread compression in certain portfolio sectors resulting from continued competition for our customers' business from other financial service providers.

Rural Infrastructure recorded a provision for loan losses of $4.0 million in 2019 compared to $12.0 million in 2018. The 2019 provision primarily reflects deterioration in credit quality driven by downgrades of a limited number of power and energy customers partially offset by credit quality improvements in our communications portfolio. The 2018 provision primarily reflected increases in specific reserves associated with a small number of customers, somewhat offset by lower reserves in the balance of the portfolio.

Nonaccrual loans in Rural Infrastructure improved to $20.3 million at December 31, 2019 compared to $38.2 million at December 31, 2018 primarily due to a communications loan that was paid off during 2019. 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 loan charge-offs, net of recoveries, of $6.9 million in 2019 as compared to $1.9 million in 2018. Charge-offs largely related to rural energy customers in both 2019 and 2018.

Noninterest income decreased by $17.0 million in 2019 primarily due to receipt of a lower level of excess insurance funds returned from the Insurance Corporation and proceeds received in 2018 from the disposition of warrants obtained in a previous loan restructuring. This was somewhat offset by higher levels of patronage income received from other System institutions on loan participations we sold to them and an increase in fee income.

Rural Infrastructure operating expenses increased by $13.1 million in 2019 primarily due to increases in employee compensation, information services, purchased services and general and administrative expenses, as described on pages 36 and 37.

Rural Infrastructure income tax expense decreased to $32.2 million in 2019 as compared to $56.8 million in 2018 primarily due to the favorable tax adjustment booked in 2019 to reflect amendments to 2015-2017 federal and state tax returns as discussed on page 37.

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 and 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 and operations 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 is led by the Chief Risk Officer (CRO) and includes the Credit Management, Enterprise Risk Management, Compliance & Financial Crimes, and Enterprise Security Divisions. The Risk Management Group provides independent oversight and support in the establishment of a risk management framework across the organization. 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 credit-worthiness of investment obligors or counterparties who insure or guarantee certain investment securities, 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 manages the credit approval process within obligor and concentration limits established for the loan portfolio pursuant to Board policies. The Credit Management Division reviews and approves transactions in accordance with certain delegated approval authorities to ensure conformity with our 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 establishment of concentration and portfolio limits, 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.

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 Banking, and Executive Vice President of Infrastructure Banking, 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 grades and establishing maximum country limits, as well as the approval of individual country risk grades 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 on page 124.

Management assigns a risk rating to each borrower based on two 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 primarily determined by the financial characteristics of the borrower and reflects the probability of default driven by several factors, 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, Probability of Default (PD), Loss Given Default (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 pricing, costs and supply chains affecting our 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; 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; and currency exchange rates. Market prices for food products 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.

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 of commodities or products used or sold by our borrowers or their access to markets. 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 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. In addition, biological or disease risk in human, livestock or crop populations can impact the supply of and demand for agricultural products. Certain customers also have exposure to counterparties in the commodities exchange markets.

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.

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 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. Constraints on carbon emissions and other environmental standards could also adversely impact power customers.

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, 2019			December 31, 2018		
	Wholesale Loans[(1)]	Commercial Loans[(2)]	Total Bank	Wholesale Loans[(1)]	Commercial Loans[(2)]	Total Bank
Acceptable	**94.50 %**	**94.73 %**	**94.61 %**	98.95 %	95.86 %	97.37 %
Special Mention	**5.50**	**2.67**	**4.09**	0.93	1.88	1.42
Substandard	**-**	**2.56**	**1.28**	0.12	2.25	1.20
Doubtful	**-**	**0.04**	**0.02**	-	0.01	0.01
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

While our overall loan quality measures remain strong at December 31, 2019, we experienced deterioration in certain credit quality metrics in 2019. Special Mention loans and accrued interest, excluding wholesale loans to Associations, increased to 2.67 percent of total loans and accrued interest at December 31, 2019 from 1.88 percent at December 31, 2018. The level of adversely classified loans ("Substandard", "Doubtful" and "Loss") and related accrued interest as a percent of total loans and accrued interest increased to 1.30 percent at December 31, 2019 compared to 1.21 percent at December 31, 2018. These increases primarily resulted from deterioration in credit quality in our Agribusiness and Rural Infrastructure operating segments.

At December 31, 2019, Special Mention loans included three affiliated Association wholesale loans totaling $2.5 billion and a $470.9 million participation in a wholesale loan made by FCBT to one of its 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 these Associations, some of which were material weaknesses, as a result of the collateralization and other mitigants described above, we do not anticipate any losses related to these wholesale loans. As of December 31, 2019, 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.

Summary of High-Risk Assets ($ in Thousands)

December 31,	2019	2018	2017	2016	2015
Nonaccrual Loans	**$ 240,683**	$ 326,288	$ 246,837	$ 207,247	$ 156,805
Accruing Loans 90 Days or More Past Due	**5,691**	1,685	670	804	754
Accruing Restructured Loans	**6,192**	-	-	42,575	-
Total Impaired Loans	**252,566**	327,973	247,507	250,626	157,559
Other Property Owned	**3**	3	3	19	-
Total High-Risk Assets	**$ 252,569**	$ 327,976	$ 247,510	$ 250,645	$ 157,559

Total nonaccrual loans improved to $240.7 million at December 31, 2019 compared to $326.3 million at December 31, 2018. The improvement was primarily due to payment activity on existing nonaccrual loans, somewhat offset by credit quality deterioration impacting a small number of customers in our Agribusiness and Rural Infrastructure operating segments. As noted previously, 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 0.22 percent as of December 31, 2019 compared to 0.31 percent at December 31, 2018. Over the past 10 years, nonaccrual loans have averaged 0.24 percent of the total loan portfolio.

Total loan charge-offs, net of recoveries, were $13.2 million in 2019 compared to $33.6 million in 2018. Gross charge-offs were $16.3 million in 2019 compared to $35.7 million in 2018. 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 $747.1 million and represented 0.69 percent of total outstanding loans at the end of 2019, compared to 0.67 percent at December 31, 2018. At December 31, 2019 and 2018, our allowance for credit losses represented 1.40 percent and 1.33 percent, respectively, of non-guaranteed loans outstanding, excluding wholesale loans to Associations.

As part of our overall assessment of risk in the loan portfolio and the allowance for credit losses as of December 31, 2019, we have considered a wide variety of factors, including volatile commodity prices and supplies; 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 66 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 2019, 61 percent of our $32.4 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 33 percent of our investment portfolio consisted of securities issued by a U.S. Agency, including MBS issued by the Federal National Mortgage Association (Fannie Mae) and U.S. Agency debt issued by 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 $98.7 million at December 31, 2019.

Credit risk in our investment portfolio primarily exists in the remaining 6 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which include certificates of deposit, corporate bonds and asset-backed securities (ABS) backed by pools of prime auto loans. Excluding certificates of deposit with commercial banks carrying the highest short-term credit rating, these securities collectively total $1.4 billion of our total investment portfolio as of December 31, 2019. Credit risk in our investment portfolio also arises from counterparties to short-term investments, which include our overnight bank deposits and federal funds sold.

We recorded no other-than-temporary impairment losses on our investment securities in 2019, 2018 and 2017. The credit quality of our investment portfolio as of December 31, 2019 is more fully discussed in “Liquidity and Capital Resources” beginning on page 60.

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 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). 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 swaps, 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 swap 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, 2019 and 2018, the notional amount of our cleared derivatives was $15.7 billion and $12.7 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 taken into account in establishing counterparty limits.

The fair value of our derivatives to all of our dealer counterparties was a liability at December 31, 2019, and was offset by the collateral we posted to our dealer counterparties. At December 31, 2018 and 2017, the fair value of our derivatives to certain dealer counterparties was an asset and offset by collateral held by us. The remainder of the fair value of our derivatives to dealer counterparties was a liability at December 31, 2018 and 2017 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. 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 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 (e.g., interest rates).

Customer derivative transactions are typically secured through our loan agreements. The notional amount of our derivatives and related exposure to customer counterparties were $10.9 billion and $258.5 million, respectively, at December 31, 2019 compared to $9.2 billion and $66.3 million, respectively, at December 31, 2018.

The FCA and various other federal agencies, known as the Prudential Regulators under the Dodd-Frank Act, jointly adopted final rules which will subject many non-cleared swaps to margin requirements. Such requirements become effective over the next several years. The Prudential Regulators also issued an interim final rule excluding swaps that qualify for certain exemptions from the scope of the final margin rules. CoBank is eligible for certain regulatory exemptions related to, among other things, transactions with end users and with customer-owners. Accordingly, we do not currently anticipate that adoption of these rules will have a material impact on our use of derivatives or our overall financial position.

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 and differences in the timing between the contractual maturities, repricing characteristics, and prepayments of our assets and the liabilities funding these assets. This 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 risks may be accentuated during the London Inter-Bank Offered Rate (LIBOR) transition to the

Secured Overnight Financing Rate (SOFR). See further discussion regarding the transition to SOFR beginning on page 58. Our asset/liability management objective is to manage the mix of 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.

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 53 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 26 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. This funding can be called in lower-rate environments, thus allowing liabilities to reprice to a lower rate. Approximately 77 percent of our fully prepayable loan portfolio is funded with callable debt, which lowers prepayment risk.

The remaining 74 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 to manage the risk of prepayments in the loan portfolio.

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.

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 adversely affect investment portfolio income in a falling interest rate environment because investments are predominately 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 moderate based 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 prepayment 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.

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 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 moderate based on the type and average life of securities purchased. In the same way PAC bands protect 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 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. Further, reform and regulation which impacts LIBOR and other benchmark interest rates could introduce additional basis risks. See further discussion regarding the transition to SOFR beginning on page 58.

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, 2019. 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, 2019 ($ 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	$ 46,552	$ 4,925	$ 29	$ 38	$ -	$ 51,544
Administered-rate Loans	10,479	-	-	-	-	10,479
Fixed-rate Loans:						
Fixed-rate Loans(1)	1,152	3,975	4,134	11,536	12,708	33,505
Fixed-rate Loans, Prepayable(2)	387	1,626	1,682	5,181	4,209	13,085
Nonaccrual Loans	-	-	-	-	241	241
Total Loans	58,570	10,526	5,845	16,755	17,158	108,854
Federal Funds Sold and Other Overnight Funds	1,810	-	-	-	-	1,810
Investment Securities	10,470	3,347	2,035	11,813	4,761	32,426
Total Interest-earning Assets(3)	$ 70,850	$ 13,873	$ 7,880	$ 28,568	$ 21,919	$ 143,090
Interest-bearing Liabilities:						
Callable Bonds and Notes	$ 782	$ 1,764	$ 4,688	$ 4,542	$ 1,567	$ 13,343
Noncallable Bonds and Notes	61,732	9,646	8,137	22,698	15,666	117,879
Bonds, Medium Term Notes and Discount Notes	62,514	11,410	12,825	27,240	17,233	131,222
Effect of Interest Rate Swaps, Forwards, Futures, etc.	12,098	(1,097)	(2,369)	(7,673)	(959)	-
Cash Investment Services Payable and Other Interest-bearing Liabilities	759	-	-	155	94	1,008
Total Interest-bearing Liabilities	$ 75,371	$ 10,313	$ 10,456	$ 19,722	$ 16,368	$ 132,230
Interest Rate Sensitivity Gap (Total Interest-earning Assets less Total Interest-bearing Liabilities)	$ (4,521)	$ 3,560	$ (2,576)	$ 8,846	$ 5,551	$ 10,860
Cumulative Gap	$ (4,521)	$ (961)	$ (3,537)	$ 5,309	$ 10,860	
Cumulative Gap/Total Interest-earning Assets	(3.16) %	(0.67) %	(2.47) %	3.71 %	7.59 %	

(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, 2019.

Our cumulative gap position between interest-earning assets and interest-bearing liabilities was positive at December 31, 2019. As detailed on page 52, our net interest income will generally be favorably impacted in the near term in rising interest rate environments.

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 2.8 months at December 31, 2019 and 2.5 months at December 31, 2018.

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 each of the periods presented, we perform a shock equal to one-half the three-month Treasury rate. This resulted in downward shocks of -78 basis points, -120 basis points, and -69 basis points at December 31, 2019, 2018 and 2017, 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

December 31,	2019	2018	2017
Scenario:			
- 300 bp shock	**n/a**	n/a	n/a
- 200 bp shock	**n/a**	n/a	n/a
- 120 bp shock	**n/a**	(0.8) %	n/a
- 100 bp shock	**1.2 %**	(1.1)	n/a
- 78 bp shock	**1.0**	n/a	n/a
- 69 bp shock	**n/a**	n/a	(1.9) %
+ 100 bp shock	**0.3**	1.6	2.0
+ 200 bp shock	**1.3**	3.1	3.8
+ 300 bp shock	**2.2**	4.5	5.4
- 300 bp ramp	**n/a**	n/a	n/a
- 200 bp ramp	**n/a**	n/a	n/a
- 100 bp ramp	**1.3**	(0.2)	n/a
+ 100 bp ramp	**(0.1)**	1.3	0.6
+ 200 bp ramp	**0.3**	2.0	1.2
+ 300 bp ramp	**0.7**	2.7	1.6

Market Value of Equity at Risk

December 31,	2019	2018	2017
Scenario:			
- 300 bp shock	**n/a**	n/a	n/a
- 200 bp shock	**n/a**	n/a	n/a
- 120 bp shock	**n/a**	4.4 %	n/a
- 100 bp shock	**4.0 %**	3.9	n/a
- 78 bp shock	**3.2**	n/a	n/a
- 69 bp shock	**n/a**	n/a	2.8 %
+ 100 bp shock	**(5.1)**	(4.8)	(4.6)
+ 200 bp shock	**(10.3)**	(9.5)	(9.3)
+ 300 bp shock	**(15.3)**	(14.0)	(13.9)

Our net interest income over the next 12 months is not materially impacted by increases or decreases in interest rates as measured at December 31, 2019. Our equity positioning strategy is designed to reduce volatility of net interest income.

Our market value of equity as measured at December 31, 2019 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, 2019, 2018 and 2017, 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 independent interest rate forecasts, including 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 obtain independent interest rate projections designed around economic forecasts that estimate the most likely path of interest rates for the planning horizon and alternate views of an expanding economy and a slowing economy. We 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, 2019, are shown in the following table. We also discuss derivatives in Note 11 to the accompanying consolidated financial statements.

Derivative Financial Instruments at December 31, 2019 ($ in Millions)

Derivative Product	Notional Amount	Weighted Average Receive Rate	Weighted Average Pay Rate	Fair Value
Receive Fixed Swaps	$ 17,676	2.15 %	1.76 %	$ 77
Receive Fixed Amortizing Swaps	5,248	2.35	1.85	165
Pay Fixed Swaps	5,167	1.58	1.94	(83)
Pay Fixed Amortizing Swaps	5,248	1.85	2.21	(78)
Interest Rate Options	6,745	-	-	39
Foreign Currency Spots and Forwards	192	-	-	(2)
Total	$ 40,276	2.05 %	1.88 %	$ 118

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

Notional Amounts of Derivative Financial Instruments by Strategy ($ in Millions)

December 31,	2019	2018	2017
Liquidity Management	**$ 10,298**	$ 9,587	$ 9,502
Equity Positioning	**2,212**	952	1,351
Options Risk Management[1]	**5,824**	3,862	4,647
Customer Transactions	**21,755**	18,443	15,989
Foreign Currency Risk Management[2]	**187**	80	172
Total	**$ 40,276**	$ 32,924	$ 31,661

(1) Excludes $921 million, $498 million and $476 million of interest rate options at December 31, 2019, 2018 and 2017, respectively, which are classified as customer transactions.

(2) Excludes $5 million, $5 million and $11 million of foreign currency spot and forward contracts at December 31, 2019, 2018 and 2017, 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 LIBOR or similar short-term rates. 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. 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.

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 agreements 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 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, 2019, our liquidity was 176 days, compared to 177 days at December 31, 2018. During 2019, we averaged 177 days of liquidity compared to an average of 176 days in 2018.

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 resulting from the tier one through tier three 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 65 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, 2019 ($ in Millions)

	Book Value	Par Value
1 Day	$ 719	$ 719
2-7 Days	1,165	1,165
8-30 Days	6,733	6,736
31-90 Days	11,043	11,051
91-180 Days	13,849	13,859
181-365 Days	26,890	26,923
1-5 Years	52,179	52,072
Over 5 Years	19,652	19,599
Total	$ 132,230	$ 132,124

See Notes 5 and 16 to the accompanying consolidated financial statements for information regarding interest rates and maturities of Systemwide Debt Securities, and contingencies.

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, 2019, commitments to extend credit and commercial letters of credit were $27.8 billion and $39.6 million, respectively. In addition, we provide standby letters of credit, which guarantee payment or performance of an obligation. As of December 31, 2019, the maximum amount of future payments that could potentially be required under standby letters of credit was $1.3 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 10 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. We are required by FCA regulations to exclude from our liquidity reserve certificates of deposit that no longer carry one of the two highest short-term credit ratings, ABS that are no longer rated triple-A 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, 2019 and 2018, $472.7 million and $250.4 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 $1.1 billion, $1.4 billion and $1.1 billion in 2019, 2018 and 2017, 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, 2020, 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.

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 Senior Vice President of Internal Audit reports annually 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 responsible for the maintenance and development of the model 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 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 review current governance practices and make recommendations for changes to those practices to ensure a strong and equitable governance structure is maintained. In 2014, a Board restructuring committee was convened to examine key aspects of governance at CoBank, including board size, director terms, voting methods, the number and geography of voting regions, and eligibility requirements for director candidates. In 2015, CoBank shareholders approved bylaw amendments implementing a plan to reduce the size of the Board of Directors. Pursuant to the plan, which began to take effect in 2016, a total of 10 Board seats have been eliminated, reducing the number of elected directors on the Board from 24 to 14 in 2020. The Board will also have up to four appointed directors and will continue to have two outside directors with no customer or System affiliations.

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 regular access to members of the Board of Directors and management through numerous 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. 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 170, 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.

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. We have a Regulatory function that reports to the Chief Legal Officer and General Counsel and a Compliance function that reports to the Chief Risk Officer. These functions, together with the CRO and CCO roles, act as an integrated second line of defense. CoBank's Legal and Regulatory Group monitors and comments on emerging regulatory requirements. Our Compliance Group provides assistance to business lines with the implementation of new requirements, and performs internal reviews of the Bank's compliance with legal and regulatory requirements on an as-needed basis or to address complex compliance areas. The Bank's management of regulatory risk is under the supervision of the Chief Legal Officer and General Counsel to address potential litigation risk that may arise from ongoing business activities. Our Fraud and Anti-Money Laundering program utilizes a risk-based approach to monitor transactional activity. 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

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, 2019, we were primarily liable for $131.2 billion of Systemwide Debt Securities. Additionally, each System bank is contingently liable for Systemwide Debt Securities of the other System banks. At December 31, 2019, the total aggregate principal amount of the outstanding Systemwide Debt Securities was $293.5 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 $5.2 billion as of December 31, 2019, 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, 2020, 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.

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, 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 House of Representatives Committee on Agriculture and thus have not been the subject of this specific congressional scrutiny. However, there could be some risk that further efforts to reform GSEs would impact the System's status or erode some of the GSE-related benefits, including favorable funding costs and funding flexibility.

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 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, which continues to drive their AAA long-term debt rating of the System. Any future 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. 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, particularly with respect to our investments in ABS and corporate bonds, which together represent approximately 5 percent of our investment securities held for liquidity as of December 31, 2019. 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 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 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. Collateral is exchanged between parties 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. As of December 31, 2019, we posted $115.5 million in cash as collateral with our counterparties. Additionally, initial margin and settlement payments totaling $62.5 million and $136.9 million, respectively, were held by our CCP for our cleared derivatives as of December 31, 2019.

Uncertainty Surrounding the Future of LIBOR

CoBank recognizes the discontinuance of LIBOR presents significant risks and challenges that could have an impact on its businesses. Accordingly, CoBank established a LIBOR governance and implementation program that includes senior management involvement.

In 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced its intention to stop persuading or compelling the group of major banks that sustains LIBOR to submit rate quotations after 2021. As a result, it is uncertain whether LIBOR will continue to be quoted after 2021.

We have exposure to various LIBOR-indexed financial instruments that mature after 2021. This exposure includes loans that we make to our customers, investment securities that we purchase, Systemwide Debt Securities that are issued by the Funding Corporation, 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 and borrowers relating to the transition are also possible. Due to the uncertainty regarding the transition from LIBOR-indexed financial instruments, including when it will happen, 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, 2019 ($ in Millions)	Due in 2020	Due in 2021	Due in 2022 and After	Total
Commercial Loans [(1)]	$ 14,540	$ 3,966	$ 16,892	$ 35,398
Wholesale Loans [(2)]	10,519	-	-	10,519
Investment Securities	-	245	4,174	4,419
Debt	29,930	18,970	1,846	50,746
Derivatives (Notional Amounts)	6,006	7,494	26,584	40,084
Preferred Stock [(3)]	-	-	1,300	1,300

[(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 $225 million that pays a dividend currently indexed to 3-month USD LIBOR plus a spread as of December 31, 2019. Dividends on an additional $400 million, $300 million, and $375 million of preferred stock convert from a fixed rate to 3-month USD LIBOR plus a spread in 2022, 2025, and 2026, respectively.

In the United States, efforts to identify a set of alternative U.S. dollar reference interest rates include proposals by the Alternative Reference Rates Committee (ARRC) of the Federal Reserve Board and the Federal Reserve Bank of New York. Specifically, the ARRC has proposed SOFR as the recommended alternative to LIBOR and the Federal Reserve Bank of New York began publishing SOFR in April of 2018. As of December 31, 2019, we had $150 million in SOFR-indexed investment securities and $200 million in SOFR-indexed debt.

On September 11, 2018 the FCA issued guidance for System institutions to follow as they prepare for the expected phase-out of LIBOR. Pursuant to the guidance, we have developed a LIBOR transition plan. The FCA identified the following as important considerations in the development of transition plans:

- a governance structure to manage the transition,
- an assessment of exposures to LIBOR,
- an assessment of the fallback provisions in contracts and the impact of a LIBOR phase-out under those provisions,
- the establishment of strategies for reducing each type of LIBOR exposure,
- assessment of operational processes that need to be changed,
- communication strategies with customers and stakeholders,
- the establishment of a process to stay abreast of industry developments and best practices,
- the establishment of a process to ensure a coordinated approach, to the extent possible, across the Bank, and
- a timeframe and action steps for completing key objectives.

On September 5, 2019, the Financial Accounting Standards Board issued a proposed accounting standards update (ASU), "Reference Rate Reform (Topic 848)", to ease the potential burden in recognizing the effects of the LIBOR transition in accounting and financial reporting. The proposal would simplify the accounting evaluation of a contract modification and allow for that modification to be considered a continuation of the contract for accounting purposes. This accounting relief could be applied to loans, investments, debt, derivatives or any other type of contracts affected by the LIBOR transition. With respect to hedge accounting, the proposal would also simplify the assessment of hedge effectiveness and allow hedging relationships affected by reference rate reform to continue, as opposed to de-designated or terminated. The proposed accounting relief for the LIBOR transition could be applied up until January 1, 2023. The public comment period on this proposed ASU ended on October 7, 2019.

We continue to analyze potential risks associated with the LIBOR transition, including financial, market, accounting, operational, legal, tax, reputational and compliance risks. At this time, we are unable to predict whether or when LIBOR will cease to be available or if the SOFR or any other alternative reference rate will become the benchmark to replace LIBOR. Because we routinely engage in transactions involving financial instruments that reference LIBOR, these developments could have a material impact on us, our borrowers, investors, customers and counterparties.

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.

During 2019, we sold $776.5 million of non-patronage, electric distribution loans to Farmer Mac, as more fully explained on page 42. At December 31, 2017, we held $78.0 million of agricultural MBS guaranteed by Farmer Mac. During 2018, we sold all of our remaining agricultural MBS guaranteed by Farmer Mac as described on page 61.

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 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 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. To date, 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 further cyber-attacks, which could result in material losses. Our risk and exposure to cyber-attacks remain high due to the evolving nature of such attacks. 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, we cannot ensure their security protocols are sufficient to withstand a cyber-attack or other security breach.

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 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.

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 Notes 5 and 6 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, 2019, Systemwide Debt Securities were rated AAA by Moody's and Fitch, 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 $1.1 billion to $32.4 billion at December 31, 2019 compared to $31.3 billion at December 31, 2018. The following tables summarize our investment securities and related unrealized gains/losses by asset class.

Investment Securities ($ in Millions)

December 31, 2019	Amortized Cost	Fair Value	Unrealized Gains (Losses)
Certificates of Deposit	$ 400	$ 400	$ -
U.S. Treasury Debt	15,908	16,062	154
U.S. Agency Debt	2,804	2,854	50
Residential Mortgage-Backed:			
Ginnie Mae	2,310	2,337	27
U.S. Agency	4,355	4,385	30
Commercial Mortgage-Backed:			
U.S. Agency	4,951	4,946	(5)
Corporate Bonds	363	373	10
Asset-Backed and Other	1,068	1,069	1
Total	$ 32,159	$ 32,426	$ 267

Investment Securities ($ in Millions)

December 31, 2018	Amortized Cost	Fair Value	Unrealized Gains (Losses)
Certificates of Deposit	$ 975	$ 975	$ -
U.S. Treasury Debt	15,424	15,268	(156)
U.S. Agency Debt	2,257	2,239	(18)
Residential Mortgage-Backed:			
Ginnie Mae	2,969	2,940	(29)
U.S. Agency	5,613	5,528	(85)
Non-Agency	12	13	1
Commercial Mortgage-Backed:			
U.S. Agency	2,882	2,867	(15)
Corporate Bonds	120	119	(1)
Asset-Backed and Other	1,342	1,343	1
Total	$ 31,594	$ 31,292	$ (302)

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 gains on our investment securities of $266.9 million in 2019 compared to unrealized losses of $302.4 million in 2018. The unrealized gains and losses recorded in both periods primarily related to the impact of market interest rate changes on the valuations of fixed-rate securities.

Approximately 94 percent of our investment securities carry an explicit or implicit government guarantee. Credit risk in our investment portfolio primarily exists in the remaining 6 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which include our certificates of deposit, corporate bonds and ABS. Excluding certificates of deposit with counterparties that carry the highest short-term credit rating, these securities collectively total $1.4 billion of our total investment securities as of December 31, 2019. Credit risk in our investment portfolio also arises from counterparties to short-term investments, which include our overnight bank deposits and federal funds sold. We recorded no other-than-temporary impairment losses for our investment securities in 2019, 2018 and 2017.

In 2019, we sold fourteen U.S. Treasury debt securities and our remaining non-agency MBS and home equity ABS portfolios for total proceeds of $2.3 billion resulting in gains of $0.9 million. We sold these securities to manage liquidity and credit exposure, and to take advantage of favorable market conditions.

In 2018, we sold five U.S. Treasury debt securities for total proceeds of $1.4 billion which approximated their combined book value. The U.S. Treasury debt securities were primarily sold to manage liquidity. We also sold all of our remaining FHA/VA non-wrapped reperformer MBS for total proceeds of $262.1 million and eight non-agency debt securities for total proceeds of $30.1 million resulting in gains of $37.8 million and $11.1 million, respectively. These MBS and non-agency debt securities were acquired in our 2012 merger with U.S. AgBank and were credit-impaired. We sold these securities to manage credit exposure and take advantage of favorable market conditions. Lastly, we sold our Farmer Mac MBS for total proceeds of $61.0 million resulting in gains of $0.1 million. The Farmer Mac securities were also acquired in the 2012 merger with U.S. AgBank.

In 2017, we sold nine U.S. Agency debt securities for total proceeds of $1.6 billion as well as six non-agency MBS for total proceeds of $34.1 million resulting in gains of $1.7 million and $7.7 million, respectively. The U.S. Agency debt securities were sold to better position our overall investment portfolio. The non-agency MBS had been previously impaired and were excluded from our liquidity reserve, and were sold due to favorable market conditions.

Derivatives

We use derivatives for the purposes described on page 53. Derivatives are recorded at fair value as assets or liabilities in the accompanying consolidated balance sheets. Changes in the fair value of these 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 recorded in the accompanying consolidated statements of income resulted in total gains of $1.3 million and $5.1 million for 2019 and 2018, respectively. Changes in the fair value of derivatives recorded as other comprehensive income (loss) totaled a loss of $38.0 million in 2019 and a gain of $28.8 million in 2018.

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 $10.6 billion, $9.5 billion and $9.1 billion at December 31, 2019, 2018 and 2017, respectively. Growth in shareholders' equity in 2019 resulted from $1,091 million in earnings as well as $457.4 million in other comprehensive income, partially offset by $515.2 million in cash patronage (including $39.8 million of special cash patronage) and $87.5 million in preferred stock dividends. Other comprehensive income for 2019 was primarily driven by increases in unrealized gains on investment securities driven by market interest rate changes.

Under the FCA's regulatory capital requirements (the Capital Regulations), common equity tier 1 (CET1), 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" on the following page 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 had no subordinated debt outstanding at December 31, 2019, 2018 and 2017. For regulatory capital purposes under the Capital Regulations, subject to certain limitations, our subordinated debt was included in tier 2 capital and permanent capital through the redemption date of June 15, 2017. On June 15, 2017, we redeemed all of our outstanding floating-rate subordinated notes due 2022 totaling $500.0 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. On April 15, 2016, we redeemed all of our outstanding 7.875 percent subordinated 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. See Note 16 to the accompanying consolidated financial statements for information relating to a complaint filed by a number of investors who had held the subordinated notes due in 2018 alleging CoBank impermissibly redeemed the subordinated notes.

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 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 established 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 established 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. The Capital Regulations established a three-year phase-in of the capital conservation buffer beginning January 1, 2017. There is no phase-in of the leverage buffer.

Proposed Capital Regulation

On September 23, 2019, the FCA issued a proposed rule to address changes to its capital regulations and certain other regulations in response to the Current Expected Credit Losses (CECL) accounting standard. The proposed rule identifies which credit loss allowances under CECL 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 would be 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 would not be eligible for inclusion in a System institution's tier 2 capital. In addition, the proposed regulation does not include a transition phase-in period for the CECL day 1 cumulative effect adjustment to retained earnings on a System institution's regulatory capital ratios. The public comment period ended on November 22, 2019.

As shown in the following table, our capital and leverage ratios exceeded regulatory minimums at December 31, 2019, 2018 and 2017. 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

	Regulatory Minimums	December 31, 2019 Actual	December 31, 2019 Actual Buffer	December 31, 2018 Actual	December 31, 2018 Actual Buffer	December 31, 2017 Actual	December 31, 2017 Actual Buffer	Required Buffer
Common Equity Tier 1 Capital Ratio	4.5 %	**12.70 %**	**8.20 %**	12.38 %	7.88 %	11.67 %	7.17 %	2.5 % [1]
Tier 1 Capital Ratio	6.0	**14.83**	**8.83**	14.57	8.57	13.97	7.97	2.5 [1]
Total Capital Ratio	8.0	**15.86**	**7.86**	15.58	7.58	15.24	7.24	2.5 [1]
Tier 1 Leverage Ratio	4.0	**7.51**	**3.51**	7.53	3.53	7.26	3.26	1.0
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio	1.5	**3.24**	**n/a**	3.19	n/a	2.96	n/a	n/a
Permanent Capital Ratio	7.0	**14.95**	**n/a**	14.69	n/a	14.29	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.

See pages 131 through 140 for more information on required regulatory capital disclosures, including the components of the ratios displayed above.

Previous Capital Regulations

FCA regulations in effect through December 31, 2016 included requirements to maintain regulatory capital at or above minimum levels for our permanent capital ratio, total surplus ratio, core surplus ratio, and net collateral ratio. Our capital and collateral ratios calculated in accordance with the FCA regulations effective through December 31, 2016 are summarized as follows:

- The permanent capital ratio is quarterly average permanent capital (generally shareholders' equity and subordinated debt subject to certain limitations, excluding accumulated other comprehensive income (loss) and other deductions) as a percentage of quarterly average risk-adjusted assets.
- The total surplus ratio is quarterly average total surplus (quarterly average permanent capital, net of purchased stock) as a percentage of quarterly average risk-adjusted assets.
- The core surplus ratio is quarterly average core surplus (generally URE, non-cumulative preferred stock and a portion of common stock) as a percentage of quarterly average risk-adjusted assets.
- The net collateral ratio is net collateral (generally net loans, cash and investments) divided by total liabilities, as adjusted to exclude subordinated debt (subject to certain limitations) and the fair value of certain derivatives.

Pursuant to FCA guidance effective through December 31, 2016, a portion of our common stock was included in core surplus, subject to certain conditions. Through December 31, 2016, the FCA required us to also calculate our core surplus ratio excluding common stock and had established a 3.0 percent minimum for such ratio. As of December 31, 2016, our core surplus ratio excluding common stock was 9.55 percent. As displayed in the following table, at December 31, 2016 and 2015 we exceeded the minimum regulatory capital requirements effective through December 31, 2016, which are noted parenthetically.

Previous Regulatory Capital Requirements and Ratios

December 31,	2016	2015
Permanent Capital Ratio (7.0%)	15.47 %	14.95 %
Total Surplus Ratio (7.0%)	14.52	14.07
Core Surplus Ratio (5.59%)[1]	11.02	10.29
Net Collateral Ratio (104.0%)[2]	106.94	106.82

[1] Through December 31, 2016, the regulatory minimum core surplus ratio was 3.5 percent, but the FCA required the higher 5.59 percent during a period in which we included a portion of our common stock as core surplus.

[2] Through December 31, 2016, the regulatory minimum net collateral ratio was 103.0 percent, but the FCA required the higher 104.0 percent during a period in which we had subordinated debt outstanding.

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 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 (provided we remain within the regulatory capital minimums) 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 of 4 percent of their average outstanding loan balance. 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, which may increase or decrease such payments based upon the Bank's current or projected business performance and capital levels. In addition, 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 2019 in the first quarter of 2020.

Patronage Distributions ($ in Thousands)

Year Ended December 31,	2019	2018	2017
Common Stock	**$ 128,428**	$ 127,910	$ 118,570
Cash	**475,341**	475,571	491,856
Special Cash	**39,839**	96,187	-
Total Patronage Distributions	**$ 643,608**	$ 699,668	$ 610,426
Patronage Distributions/ Total Average Common Stock Owned by Active Borrowers	**19.48 %**	22.35 %	20.70 %

In December 2019, the Bank's Board of Directors approved a special cash patronage distribution of $39.8 million to eligible customer-owners payable in March 2020. The distribution for 2019 reflected the Bank's continuing strong financial performance and robust capital levels. In September 2018, we made a special cash patronage distribution of $96.2 million to eligible customer-owners. The 2018 distribution reflected the Bank's plan to share with eligible borrowers and other key stakeholders the benefits of federal tax reform legislation effective in 2018, along with earnings from significant nonrecurring items. The special patronage distributions were incremental to regular patronage distributions the Bank typically makes in March of each year.

Our capital plans govern the level of capital investment required by customer-owners. We made changes to our capital plans that went into effect on January 1, 2018 which included, among other things, the creation of two separate capital plans for cooperative and other eligible direct borrowers. Pursuant to these new plans, agribusiness, communications and project finance customers are in one plan, while rural electric and water customers are in a separate plan. The targeted patronage levels and cash/equity splits under these new plans are more equitably balanced between the earnings generated by different customer portfolios and the use of the Bank by its patronage-eligible members. In addition, target patronage levels for all customers and partners were reduced under the new plans. No changes were made to target equity requirements for any borrower or commercial partner and the capital plan for financial service members remains unchanged.

Capital plans in effect during 2017 included a plan for cooperative and other eligible direct borrowers, a plan for loan participations purchased from System institutions, a plan for affiliated Associations, a plan for nonaffiliated entities, and a plan for financial service members.

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	Equity Requirement(1)	Target Patronage(2) 2019 Plan	2018 Plan	2017 Plan	Cash / Equity Split(3) 2019 - 2018 Plan	2017 Plan
Agribusiness, Communications and Project Finance	**8 %**	**95 bps**	95 bps	100 bps	**75 / 25 %**	75 / 25 %
Rural Electric and Water	**8**	**80**	80	100	**60 / 40**	75 / 25
Loans Purchased from Farm Credit Institutions	**8**	**95**	95	100	**75 / 25**	75 / 25
Affiliated Associations	**4**	**40**	45	45	**100 / 0**	100 / 0
Nonaffiliated Farm Credit and Other Financing Institutions	**4**	**30**	35	45	**20 / 80**	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 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.

For agribusiness, communications and project finance customers, rural electric and water customers and loans purchased from other Farm Credit institutions, the new target patronage levels took effect for 2018. Affiliated Associations and nonaffiliated Farm Credit entities and other financing institutions are transitioning to their new targeted patronage levels over a multi-year period ending in 2020. Patronage distributions, if approved by the Board of Directors in its sole discretion, are made in March following the calendar year to which they relate.

The targeted equity level for the agribusiness, communications and project finance capital plan is 8 percent of the 10-year historical average loan volume. 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 the 2019 and 2018 plan years and 100 basis points for the 2017 plan year. The cash portion of patronage was 75 percent for all agribusiness, communications and project finance plan members with the remaining portion of 25 percent paid in common stock.

The targeted equity level for the rural electric and water capital plan is 8 percent of the 10-year historical average loan volume. 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 the 2019 and 2018 plan years and 100 basis points for the 2017 plan year. Pursuant to the capital plans in effect during 2019 and 2018, the cash portion of patronage was 60 percent for all rural electric and water capital plan members with the remaining portion of 40 percent paid in common stock. For plan year 2017, the cash portion of patronage was 75 percent with the remaining portion of 25 percent paid in common stock.

The capital plan for loan participations purchased from System entities is similar to the agribusiness, communications and project finance capital plan described above.

The targeted equity level for the affiliated Association capital plan is 4 percent of the one-year historical average loan volume. Pursuant to the capital plan in effect during 2019, the targeted patronage rate for the affiliated Association capital plan was 40 basis points of the current year average loan volume, with all patronage being paid in cash. For the 2018 and 2017 capital plan years, the targeted patronage rate was 45 basis points of the current year average loan volume, with all patronage being paid in cash. Patronage for affiliated Associations is targeted at 36 basis points for 2020.

The targeted equity level for the nonaffiliated Farm Credit and other financing institutions capital plan is 4 percent of the ten-year historical average loan volume. Additionally, when these borrowers’ loans are paid in full, stock is retired over a ten-year loan base period beginning in the year following loan payoff, subject to Board approval and compliance with minimum regulatory capital requirements. Pursuant to the capital plan in effect during 2019, the targeted patronage rate for the nonaffiliated Farm Credit and other financing institutions capital plan was 30 basis points of the current year average loan volume. For the 2018 and 2017 capital plan years, the targeted patronage rate was 35 and 45 basis points, respectively, of the current year average loan volume. The cash portion of patronage was 20 percent for all nonaffiliated Farm Credit and other financing institutions capital plan members, with the remaining portion of 80 percent paid in common stock for the 2019, 2018 and 2017 capital plan years. Patronage for nonaffiliated Farm Credit and other financing institutions is targeted at 26 basis points for 2020.

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 on page 69.

Allowance for Credit Losses

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 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 changing commodity prices and supplies. 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 loss 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, 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. Senior-level committees approve 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 $25.9 million and $23.8 million at December 31, 2019, respectively.

No significant changes were made to our methodology for estimating the allowance for credit losses for loans and finance leases in 2019, 2018 or 2017.

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 12 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 derivative financial instruments 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 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 6 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 methodology for estimating credit losses for investment securities in 2019, 2018 or 2017.

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, 2019, approximately 24 percent of total assets, or $34.8 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. At December 31, 2019, less than 1 percent of total liabilities, or $0.3 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

We operate in an environment that poses a number of challenges for the Bank and its customers. Interest rates remain low by historical standards and the shape of the yield curve continues to limit returns on capital, funding strategies and investment securities. Monetary policy as established by the Federal Reserve and the policies of other central banks around the world could create further uncertainty regarding interest rates and asset valuations. Weaknesses in trade, manufacturing and business investment are all acting as a drag on global growth. While the U.S. economy enters 2020 on fairly firm footing, the strength of the economy is almost entirely dependent on consumers as businesses have not been investing in capital goods, and corporate revenue growth has slowed while labor costs continue to climb higher. The limited phase one trade agreement between the United States and China provides some optimism for easing global trade tensions, however, many of the tariffs and counter-tariffs remain in place. The United States has also entered into a new trade agreement with Canada and Mexico, but until fully implemented, it is uncertain how this agreement will impact the U.S. economy and our customers.

Competition for the business of our customers across most of the industries we serve continues to be intense. Agricultural commodity prices in general have remained relatively low due to strong global supplies and are subject to volatility driven by weather conditions, trade policies and other factors. Customers in many of the industries we serve are impacted by commodity prices and agricultural yields, fluctuations in the value of the U.S. dollar, weather, and ongoing political and regulatory uncertainty. Many of our power customers continue to be impacted by energy efficiency initiatives, price volatility of various fuel sources including coal and natural gas, rural population decline, changing regulation of carbon dioxide emissions, renewable energy standards and customer demand for distributed generation. Rapidly changing technology, consolidation and customer demand create volatility in the communications industry. Although these challenges could reduce credit quality and impact the level of loan demand, CoBank remains well-positioned to continue to serve as a dependable financial partner for our customers.

We continue to focus on delivering the credit and financial services our customers need to compete, grow and achieve business success, enhancing our enterprise risk management capabilities and maintaining our financial strength. In addition, we continue to collaborate with our affiliated Associations on business model solutions that further strengthen the ability to fulfill our collective mission, including through the more efficient use of capital. We believe that our strong liquidity and capital will continue to provide the capacity to support customers in all market conditions. We also believe that paying patronage is an important part of our value proposition as it effectively lowers the net cost of borrowing for our customer-owners. We continue our disciplined approach to managing risk and monitoring asset quality. We also continue to focus on operating efficiency and make prudent investments in our people, processes, data infrastructure, technology, and operating platforms, including enhancing our digital banking capabilities, to strengthen the value and improve the experience we provide to our customers.

Under the guidance of our Board of Directors and through the focus of an experienced executive management team, we are 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, 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 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 better 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 from those included in the forward-looking statements that relate to our plans, projections, expectations and intentions. Forward-looking statements are typically identified by words such as "believe," "expect," "anticipate," "intend," "estimate," "plan," "project," "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:

- 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, marketplace or regulatory environments that negatively impact the agricultural, power, communications, water and leasing industries;
- 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;
- Replacement of LIBOR and the implementation of SOFR or another benchmark rate index;
- Currency fluctuations that impact the value of the U.S. dollar in global markets;
- Adverse food safety and weather events, disease, including the recent outbreak of the coronavirus, and other unfavorable conditions that periodically occur and impact agricultural productivity, trade and income;
- Adverse effect of wildfires, floods and other natural disasters which may have a direct or indirect impact on certain of our borrowers;
- Changes in levels of global crop production, exports, 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;
- Government policies and political developments in the United States and other countries in which we do business;
- Geopolitical uncertainties throughout the world that may impact the industries we lend to, or, economic, fiscal or monetary conditions;
- Changes in the U.S. government's support of the System, the agricultural industry, agricultural exports, rural infrastructure and rural economies;
- 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. government relative to other government-sponsored enterprises, including Fannie Mae, Freddie Mac, the FHLB and Farmer Mac;
- Actions taken by the U.S. government to manage U.S. immigration or fiscal policies;
- Changes to tax laws;
- A decrease in the credit outlook or ratings of U.S. government debt and agency debt, including Systemwide Debt Securities;
- 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, including the implementation of the CECL accounting standard;
- Failure of our investment portfolio to perform as expected or deterioration in the credit quality of such investments;
- The resolution of legal proceedings 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 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 "Company") as of December 31, 2019, 2018 and 2017, and the related consolidated statements of income, of comprehensive income, of changes in shareholders' equity and of cash flows for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019, 2018 and 2017, 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 Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing on page 127 of Annual Report to Shareholders. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with 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 company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

PricewaterhouseCoopers LLP

Denver, Colorado
February 28, 2020

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

Consolidated Balance Sheets
CoBank, ACB

($ in Thousands)

As of December 31,		**2019**		**2018**		**2017**
Assets						
Total Loans	**$**	**108,854,253**	$	104,493,855	$	99,265,505
Less: Allowance for Loan Losses		**654,764**		621,591		576,927
Net Loans		**108,199,489**		103,872,264		98,688,578
Cash and Cash Equivalents		**948,669**		1,368,075		1,313,620
Federal Funds Sold and Other Overnight Funds		**1,810,000**		1,300,000		1,035,000
Investment Securities		**32,425,944**		31,291,720		26,870,378
Accrued Interest Receivable		**453,530**		454,396		381,544
Interest Rate Swaps and Other Financial Instruments		**380,715**		255,926		180,845
Other Assets		**785,716**		473,276		740,848
Total Assets	**$**	**145,004,063**	$	139,015,657	$	129,210,813
Liabilities						
Bonds and Notes	**$**	**132,230,166**	$	127,632,183	$	118,406,283
Accrued Interest Payable		**425,648**		433,300		309,340
Interest Rate Swaps and Other Financial Instruments		**263,134**		154,841		86,732
Reserve for Unfunded Commitments		**92,302**		81,649		93,865
Other Liabilities		**1,425,920**		1,178,751		1,254,516
Total Liabilities		**134,437,170**		129,480,724		120,150,736
Commitments and Contingent Liabilities (Note 16)						
Shareholders' Equity						
Preferred Stock		**1,500,000**		1,500,000		1,500,000
Common Stock		**3,621,577**		3,415,654		3,240,445
Unallocated Retained Earnings		**5,350,891**		4,982,383		4,551,600
Accumulated Other Comprehensive Income (Loss)		**94,425**		(363,104)		(231,968)
Total Shareholders' Equity		**10,566,893**		9,534,933		9,060,077
Total Liabilities and Shareholders' Equity	**$**	**145,004,063**	$	139,015,657	$	129,210,813

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

Consolidated Statements of Income

CoBank, ACB

($ in Thousands)

Year Ended December 31,	2019	2018	2017
Interest Income			
Loans	**$ 3,687,926**	$ 3,348,737	$ 2,603,019
Investment Securities, Federal Funds Sold and Other Overnight Funds	**780,172**	682,396	538,121
Total Interest Income	**4,468,098**	4,031,133	3,141,140
Interest Expense	**3,069,539**	2,599,837	1,748,315
Net Interest Income	**1,398,559**	1,431,296	1,392,825
Provision for Loan Losses	**57,000**	66,000	42,000
Net Interest Income After Provision for Loan Losses	**1,341,559**	1,365,296	1,350,825
Noninterest Income (Expense)			
Net Fee Income	**108,708**	106,247	109,160
Patronage Income	**91,428**	75,835	63,970
Prepayment Income	**17,221**	14,754	18,585
Losses on Early Extinguishments of Debt	**(16,619)**	(15,021)	(42,088)
Gains on Sales of Investment Securities	**892**	49,074	9,387
Return of Excess Insurance Funds	**13,789**	35,045	-
Other, Net	**5,494**	23,726	16,219
Total Noninterest Income	**220,913**	289,660	175,233
Operating Expenses			
Employee Compensation	**203,952**	184,853	172,540
General and Administrative	**30,110**	27,482	29,331
Information Services	**46,189**	38,138	35,776
Insurance Fund Premium	**52,810**	52,100	83,686
Travel and Entertainment	**18,966**	18,418	18,247
Farm Credit System Related	**16,284**	15,569	15,823
Occupancy and Equipment	**16,718**	16,055	16,020
Purchased Services	**18,473**	11,192	14,250
Total Operating Expenses	**403,502**	363,807	385,673
Income Before Income Taxes	**1,158,970**	1,291,149	1,140,385
Provision for Income Taxes	**67,742**	100,374	15,064
Net Income	**$ 1,091,228**	$ 1,190,775	$ 1,125,321

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

Consolidated Statements of Comprehensive Income
CoBank, ACB

($ in Thousands)

Year Ended December 31,		2019		2018		2017
Net Income	**$**	**1,091,228**	$	1,190,775	$	1,125,321
Other Comprehensive Income (Loss), Net of Tax:						
Net Change in Unrealized Gains (Losses) on Investment Securities Not Other-Than-Temporarily Impaired		**504,230**		(136,193)		(105,571)
Net Change in Unrealized Losses on Other-Than-Temporarily Impaired Investment Securities		**(102)**		(3,404)		(1,733)
Net Change in Unrealized (Losses) Gains on Interest Rate Swaps and Other Financial Instruments		**(38,001)**		28,842		(12,274)
Net Pension Adjustment		**(8,769)**		6,233		7,493
Other Comprehensive Income (Loss)		**457,358**		(104,522)		(112,085)
Comprehensive Income	**$**	**1,548,586**	$	1,086,253	$	1,013,236

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, 2016	$ 1,500,000	$ 3,072,232	$ 4,121,409	$ (119,883)	$ 8,573,758
Comprehensive Income (Loss)			1,125,321	(112,085)	1,013,236
Preferred Stock:					
Dividends			(84,704)		(84,704)
Common Stock:					
Issuances		75,531			75,531
Redemptions		(25,888)			(25,888)
Patronage Distribution:					
Cash			(491,856)		(491,856)
Common Stock		118,570	(118,570)		-
Balance at December 31, 2017	$ 1,500,000	$ 3,240,445	$ 4,551,600	$ (231,968)	$ 9,060,077
Balance Sheet Reclassification of Stranded Tax Effects from Accumulated Other Comprehensive Income (Loss) to Retained Earnings (Note 2)			26,614	(26,614)	-
Balance at January 1, 2018, as adjusted	$ 1,500,000	$ 3,240,445	$ 4,578,214	$ (258,582)	$ 9,060,077
Comprehensive Income (Loss)			1,190,775	(104,522)	1,086,253
Preferred Stock:					
Dividends			(86,938)		(86,938)
Common Stock:					
Issuances		78,463			78,463
Redemptions		(31,164)			(31,164)
Patronage Distribution:					
Cash			(475,571)		(475,571)
Special Cash			(96,187)		(96,187)
Common Stock		127,910	(127,910)		-
Balance at December 31, 2018	**$ 1,500,000**	**$ 3,415,654**	**$ 4,982,383**	**$ (363,104)**	**$ 9,534,933**
Cumulative Effect Adjustments from Changes in Accounting Principles[(1)]			**8,425**	**171**	**8,596**
Balance at January 1, 2019, as adjusted	**$ 1,500,000**	**$ 3,415,654**	**$ 4,990,808**	**$ (362,933)**	**$ 9,543,529**
Comprehensive Income			**1,091,228**	**457,358**	**1,548,586**
Preferred Stock:					
Dividends			**(87,537)**		**(87,537)**
Common Stock:					
Issuances		**121,522**			**121,522**
Redemptions		**(44,027)**			**(44,027)**
Patronage Distribution:					
Cash			**(475,341)**		**(475,341)**
Special Cash			**(39,839)**		**(39,839)**
Common Stock		**128,428**	**(128,428)**		**-**
Balance at December 31, 2019	**$ 1,500,000**	**$ 3,621,577**	**$ 5,350,891**	**$ 94,425**	**$ 10,566,893**

(1) *Effective January 1, 2019, we adopted changes in lease accounting pursuant to ASU "Leases (Topic 842)" and derivative accounting pursuant to ASU "Derivatives and Hedging (Topic 815)", as described in Note 2.*

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,		2019		2018		2017
Cash Flows Provided by Operating Activities						
Net Income	$	**1,091,228**	$	1,190,775	$	1,125,321
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:						
Provision for Loan Losses		**57,000**		66,000		42,000
Remeasurement of Deferred Tax Liabilities / Deferred Tax Assets		**-**		(15,782)		(142,323)
Deferred Income Taxes		**32,198**		103,289		12,873
Depreciation and Amortization/Accretion, Net		**20,605**		6,772		29,090
Losses on Early Extinguishments of Debt		**16,619**		15,021		42,088
Net Gains on Sales of Investment Securities		**(892)**		(49,074)		(9,387)
Decrease (Increase) in Accrued Interest Receivable		**866**		(72,852)		(32,892)
(Increase) Decrease in Other Assets		**(51,478)**		80,948		(18,869)
(Decrease) Increase in Accrued Interest Payable		**(7,652)**		123,960		28,186
Increase (Decrease) in Other Liabilities		**28,096**		(42,406)		(17,630)
Net Losses on Interest Rate Swaps and Other Financial Instruments		**10,941**		16,463		7,278
Proceeds (Payments) from Termination of Interest Rate Swaps and Caps		**-**		3,124		(395)
Purchase of Interest Rate Caps and Floors		**(47,017)**		(808)		(14,424)
Payments on Operating Lease Liabilities		**(9,804)**		-		-
Other		**(585)**		(3,741)		(525)
Net Cash Provided by Operating Activities		**1,140,125**		1,421,689		1,050,391
Cash Flows Used in Investing Activities						
Net Increase in Loans		**(4,389,715)**		(5,286,186)		(4,068,160)
Investment Securities:						
Purchases		**(17,606,457)**		(21,687,411)		(19,925,597)
Proceeds from Maturities and Prepayments		**14,656,031**		15,533,807		19,097,511
Proceeds from Sales		**2,351,723**		1,752,299		1,492,332
Net Increase in Federal Funds Sold and Other Overnight Funds		**(510,000)**		(265,000)		(285,000)
Net Cash Used in Investing Activities		**(5,498,418)**		(9,952,491)		(3,688,914)
Cash Flows Provided by Financing Activities						
Bonds and Notes Proceeds		**99,317,711**		82,111,925		69,331,857
Bonds and Notes Retired		**(94,735,778)**		(72,914,602)		(65,362,082)
Payments on Early Extinguishments of Debt		**(16,619)**		(15,021)		(42,088)
Net Decrease in Notes Payable and Other Interest-bearing Liabilities		**(127,681)**		(59,103)		(557,964)
Subordinated Debt Redemption		**-**		-		(500,000)
Preferred Stock Dividends Paid		**(87,746)**		(86,386)		(84,456)
Common Stock Issued		**121,522**		78,463		75,531
Common Stock Retired		**(44,027)**		(31,164)		(25,888)
Cash Patronage Distribution Paid		**(475,073)**		(494,220)		(471,623)
Special Cash Patronage Distribution Paid		**-**		(96,187)		-
Cash Collateral Received (Paid) from (to) Derivative Counterparties, Net		**(212,260)**		48,910		(37,511)
Variation Margin Received (Paid) on Cleared Derivatives, Net		**198,838**		42,642		(34,150)
Net Cash Provided by Financing Activities		**3,938,887**		8,585,257		2,291,626
Net (Decrease) Increase in Cash and Cash Equivalents		**(419,406)**		54,455		(346,897)
Cash and Cash Equivalents at Beginning of Year		**1,368,075**		1,313,620		1,660,517
Cash and Cash Equivalents at End of Year	**$**	**948,669**	$	1,368,075	$	1,313,620

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,	2019	2018	2017
Supplemental Noncash Investing and Financing Activities			
Net Change in Accrued Purchases of Securities	**$ -**	$ 84,395	$ 14,852
Net Change in Receivables from Investment Securities	**61,258**	(174,365)	99,863
Change in Unrealized Losses on Investment Securities, Before Taxes	**569,428**	(148,507)	(132,864)
Patronage in Common Stock	**128,428**	127,910	118,570
Cash Patronage Payable	**475,341**	475,571	491,856
Special Cash Patronage Payable	**39,839**	-	-
Reclassification of Collateral Asset to an Offset of the Fair Value of Interest Rate Swaps and Other Financial Instruments (Note 11)	**-**	-	70,415
Reclassification of Stranded Tax Effect from Accumulated Other Comprehensive Income to Retained Earnings (Note 2)	**-**	26,614	-
Supplemental Noncash Fair Value Changes Related to Hedging Activities			
(Increase) Decrease in Interest Rate Swaps and Other Financial Instrument Assets	**$ (124,789)**	$ (75,081)	$ 27,589
Increase (Decrease) in Bonds and Notes Related to Hedging Activities	**219,338**	36,284	(44,558)
Increase (Decrease) in Interest Rate Swaps and Other Financial Instrument Liabilities	**108,293**	68,109	(75,992)
Supplemental Noncash Information Related to Leases			
Addition of Right-of-Use Assets and Operating Lease Liabilities to Balance Sheet (Note 2)	**$ 82,290**	$ -	$ -
Right-of-Use Assets Obtained in Exchange for Operating Lease Liabilitiies	**8,070**	-	-
Reclassification of Deferred Gains Associated with Sale-Leaseback Transaction (Note 2)	**8,596**	-	-
Supplemental Disclosure of Cash Flow Information			
Interest Paid	**$ 3,185,625**	$ 2,420,343	$ 1,645,399
Income Taxes Paid	**9,932**	12,222	13,173

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.

Copies of CoBank's financial reports are available 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.

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 19.

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. Certain reclassifications have been made to amounts reported in previous years to conform to the 2019 presentation. The consolidated statements of cash flows were modified to provide additional information. Cash collateral and variation margin related to derivative transactions are now separately detailed.

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.

<u>Impaired Loans</u>

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.

<u>Allowance for Loan Losses and Reserve for Unfunded Commitments</u>

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 $27.8 billion and $39.6 million of commitments to extend credit and commercial letters of credit, respectively, at December 31, 2019. 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 changing commodity prices and supplies. 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, 2019, our allowance for credit losses totaled $747.1 million, of which $654.8 million related to the allowance for loan losses and $92.3 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, internal risk ratings, 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 2019, 2018 or 2017.

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 reserve balances on a short-term basis, generally overnight. The Bank also places deposits with commercial banks, which funds are returned to the Bank the following day and earn interest overnight. Such investments are reported at their estimated fair 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.

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.

In 2016, the Bank completed a sale-leaseback transaction associated with our corporate headquarters in Greenwood Village, Colorado. Upon completion of this sale-leaseback transaction, the building asset was removed from the balance sheet. On January 1, 2019, we recorded a right-of-use (ROU) asset and lease liability related to this building lease with the adoption of the new lease accounting standard, which is described in Note 2. As of December 31, 2019, rental payments associated with the headquarters lease total approximately $77.4 million over the remaining term of 11 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 2019, net mineral income passed directly to these Associations totaled $9.4 million compared to $8.6 million in 2018 and $7.7 million in 2017. 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.

Derivative Financial 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 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 11.

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, 2019, CoBank was primarily liable for $131.2 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 12.

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 8. 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.

See Note 9 for further information regarding income taxes, including a discussion of the impact of the enactment of federal tax legislation in late 2017.

Note 2 – Recently Issued or Adopted Accounting Pronouncements

In December 2019, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2019-12, “Simplifying the Accounting for Income Taxes (Topic 740).” This guidance eliminates certain intraperiod tax allocations, foreign deferred tax recognition and interim period tax calculations. In addition, the guidance simplifies disclosure regarding capital and franchise taxes, the allocation of goodwill in business combinations, subsidiary financial statements and other disclosures. The new guidance is intended to eliminate or simplify certain aspects of income tax accounting that are complex or that require significant judgement in application or presentation. The guidance will be effective for fiscal years after December 15, 2021. Early adoption of the guidance is permitted and we adopted the new standard on January 1, 2020. The adoption of this guidance did not impact our consolidated financial position or results of operations; nor will the guidance impact the presentation of taxes for prior periods in the 2020 interim or year-end financial statements.

In August 2018, the FASB issued ASU, “Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Cost.” The guidance aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by this guidance. The guidance also requires an entity (customer) to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. It further specifies where to present expense and payments in the financial statements. We adopted this new standard on January 1, 2020. The adoption did not have a material impact on our consolidated financial position, results of operations or cash flows.

In August 2018, the FASB issued ASU, “Compensation – Retirement Benefits – Defined Benefit Plans – General (Topic 715): Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans.” This ASU modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. For public business entities, the ASU becomes effective for fiscal years ending after December 15, 2020, with early adoption permitted. The adoption of this guidance will not impact the Bank’s financial condition or its results of operations, but will result in removal or modification of certain of the employee benefit plan disclosures, which are contained in Note 8.

In August 2018, the FASB issued ASU, “Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.” This ASU eliminates, adds and modifies certain requirements to improve effectiveness of fair value measurement disclosures. This guidance becomes effective for financial statements issued for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted and an entity is permitted to early adopt any removed or modified disclosures and delay adoption of the additional disclosures until their effective date. The adoption of this guidance did not impact the Bank’s financial condition or its results of operations, but did impact the fair value measurements disclosures, which are contained in Note 12. The Bank early adopted the removed and modified disclosures in 2018.

New U.S. tax laws resulting from legislation commonly known as the Tax Cuts and Jobs Act of 2017 (TCJA) were enacted in late 2017. Among other things, the TCJA reduced the federal corporate tax rate from 35 percent to 21 percent. In accordance with GAAP, the change to a lower corporate tax rate led to a remeasurement of our deferred tax liabilities and deferred tax assets in the period of enactment (2017). For deferred tax amounts originally recorded in accumulated other comprehensive income (loss), this remeasurement resulted in a disproportionate effect of $26.6 million which remained “stranded” in accumulated other comprehensive loss as of December 31, 2017. In February 2018, the FASB issued ASU, “Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” The guidance provided entities the option to reclassify the stranded tax effects of the TCJA from accumulated other comprehensive income (loss) to retained earnings. We adopted this guidance in 2018. As a result, the stranded tax effect was reclassified in 2018 resulting in increases to accumulated other comprehensive loss and retained earnings of $26.6 million. The Bank utilizes the item-by-item approach for releasing income tax effects from accumulated other comprehensive income (loss). The reclassification by component of accumulated other comprehensive loss is presented in Note 7.

In August 2017, the FASB issued ASU, “Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities.” The new guidance will make more financial and non-financial hedging strategies eligible for hedge accounting. It also amends the presentation and disclosure requirements and changes how companies assess effectiveness. It is intended to more closely align hedge accounting with companies’ risk management strategies, simplify the application of hedge accounting, and increase transparency as to the scope and results of hedging programs. We adopted the new standard on January 1, 2019 and recorded a cumulative-effect adjustment to retained earnings of $0.2 million to reflect the removal of previously recorded hedge ineffectiveness on cash flow hedges. In addition, we adopted certain new derivative disclosures required under the ASU, which are included in Note 11.

In February 2016, the FASB issued ASU, “Leases (Topic 842).” This guidance is intended to improve financial reporting about leasing transactions and affects all organizations that lease assets. The ASU establishes a right-of-use (ROU) model that requires organizations that lease assets, referred to as lessees, to recognize on the balance sheet the ROU assets and liabilities created by those leases. The accounting for organizations that own the assets leased by the lessee, also known as lessor accounting, remains largely unchanged under the new lease accounting standard except for certain initial direct costs previously deferred and amortized are expensed under the new lessor accounting provisions. In July 2018, the FASB issued additional guidance which provided a new and optional transition method whereby an entity initially applies the leasing standard at the adoption date and recognizes a cumulative-effect adjustment to opening retained earnings. We adopted the new lease accounting standard effective January 1, 2019, under the optional transition method. The new standard provides a number of optional practical expedients in transition. We elected certain of the practical expedients, which among other things, allowed us to carry forward our historical lease classification. On adoption, we recorded ROU assets of $82.3 million, with offsetting lease liabilities of the same amount, on our consolidated balance sheet. The most significant ROU assets and lease liabilities are related to operating leases, in which the Bank is the lessee, for our corporate headquarters and banking center offices. Upon adoption, the Bank also recognized a cumulative effect adjustment of $8.6 million to increase the beginning balance of retained earnings for remaining deferred gains associated with the sale-leaseback of our corporate headquarters which occurred in a prior period. From a lessor standpoint, the new lease accounting standard increased our compensation expense related to lease originations by $7.9 million for the year ended December 31, 2019 as a result of expensing certain initial direct costs that were previously deferred and amortized. In addition, we adopted certain new lessee disclosures required under the ASU, which are included in Note 13. Information related to FCL's direct financing leases and property on operating leases in which we are the lessor is included in Note 3.

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. 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. For public business entities that are not U.S. Securities and Exchange Commission filers the ASU becomes effective in fiscal years beginning after December 15, 2020, including interim periods within those fiscal years, and early application is permitted. In October 2019, the FASB deferred the effective date of the ASU by two years to fiscal years beginning after December 15, 2022 for business entities that do not meet the definition of an SEC filer. While we continue to review the guidance and evaluate assumptions and models, we believe the ASU may result in a change in the allowance for credit losses given the change to estimated losses over the contractual life with an anticipated impact from longer duration portfolios, as well as the addition of an allowance for investment securities and other financial instruments. The amount of the increase or decrease, if any, will be impacted by the composition of our portfolios and credit quality at the adoption date as well as economic conditions and forecasts at that time. In addition, we are required to make certain new loan and allowance for credit losses disclosures upon adopting the new ASU.

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

Loans Outstanding

Loans outstanding by operating segment are shown below.

($ in Millions)

December 31,	2019		2018		2017	
	Amount	%	Amount	%	Amount	%
Agribusiness	**$ 33,168**	**30 %**	$ 32,432	31 %	$ 30,304	31 %
Farm Credit Banking	**54,459**	**50**	50,695	49	47,948	48
Rural Infrastructure	**21,227**	**20**	21,367	20	21,014	21
Total	**$ 108,854**	**100 %**	$ 104,494	100 %	$ 99,266	100 %
Loans Purchased	**$ 18,734**		$ 17,616		$ 16,910	
Loans Sold	**21,081**		18,895		17,617	

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 $5.9 billion in agricultural export finance loans outstanding as of December 31, 2019, 20 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 further mitigate our exposure for certain agricultural export finance lending transactions by purchasing credit enhancement from non-government third parties. We make loans to customers in various industries. For the years ended December 31, 2019, 2018 and 2017, total loans outstanding (excluding wholesale loans to Associations) did not exceed 10 percent for any specific industry.

Wholesale loans to our affiliated Associations represented 45 percent, 44 percent and 43 percent of total loans outstanding at December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019, 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 5 percent of our total loans outstanding at December 31, 2019, 2018 and 2017.

Unamortized loan premiums and discounts, and unamortized deferred loan fees and costs totaled $99.7 million, $95.3 million and $73.4 million as of December 31, 2019, 2018 and 2017, 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
December 31, 2019				
Allowance for Loan Losses				
Beginning Balance	$ 438,804	$ -	$ 182,787	$ 621,591
Charge-offs	(8,782)	-	(7,500)	(16,282)
Recoveries	2,492	-	616	3,108
Provision for Loan Losses	53,000	-	4,000	57,000
Transfers (to) from Reserve for Unfunded Commitments[2]	(14,019)	-	3,367	(10,653)
Ending Balance	471,495	-	183,270	654,764
Reserve for Unfunded Commitments				
Beginning Balance	63,452	-	18,197	81,649
Transfers from (to) Allowance for Loan Losses[2]	14,019	-	(3,367)	10,653
Ending Balance	77,471	-	14,830	92,302
Allowance for Credit Losses	$ 548,966	$ -	$ 198,100	$ 747,066
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans:				
Individually Evaluated for Impairment	$ 49,567	$ -	$ 15,047	$ 64,614
Collectively Evaluated for Impairment	499,399	-	183,053	682,452
Total	$ 548,966	$ -	$ 198,100	$ 747,066
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 220,398	$ 54,588,499	$ 20,285	$ 54,829,182
Collectively Evaluated for Impairment	33,082,091	-	21,280,383	54,362,474
Total	$ 33,302,489	$ 54,588,499	$ 21,300,668	$ 109,191,656

(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
December 31, 2018				
Allowance for Loan Losses				
Beginning Balance	$ 411,078	$ -	$ 165,849	$ 576,927
Charge-offs	(33,575)	-	(2,135)	(35,710)
Recoveries	1,927	-	231	2,158
Provision for Loan Losses	54,000	-	12,000	66,000
Transfers from Reserve for Unfunded Commitments[2]	5,374	-	6,842	12,216
Ending Balance	438,804	-	182,787	621,591
Reserve for Unfunded Commitments				
Beginning Balance	68,826	-	25,039	93,865
Transfers to Allowance for Loan Losses[2]	(5,374)	-	(6,842)	(12,216)
Ending Balance	63,452	-	18,197	81,649
Allowance for Credit Losses	$ 502,256	$ -	$ 200,984	$ 703,240
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans:				
Individually Evaluated for Impairment	$ 64,289	$ -	$ 22,797	$ 87,086
Collectively Evaluated for Impairment	437,967	-	178,187	616,154
Total	$ 502,256	$ -	$ 200,984	$ 703,240
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 288,125	$ 50,825,304	$ 38,163	$ 51,151,592
Collectively Evaluated for Impairment	32,290,633	-	21,406,885	53,697,518
Total	$ 32,578,758	$ 50,825,304	$ 21,445,048	$ 104,849,110
December 31, 2017				
Allowance for Loan Losses				
Beginning Balance	$ 393,548	$ -	$ 165,426	$ 558,974
Charge-offs	(35,675)	-	-	(35,675)
Recoveries	1,644	-	353	1,997
Provision for Loan Losses (Loan Loss Reversal)	43,650	-	(1,650)	42,000
Transfers from Reserve for Unfunded Commitments[2]	7,911	-	1,720	9,631
Ending Balance	411,078	-	165,849	576,927
Reserve for Unfunded Commitments				
Beginning Balance	76,737	-	26,759	103,496
Transfers to Allowance for Loan Losses[2]	(7,911)	-	(1,720)	(9,631)
Ending Balance	68,826	-	25,039	93,865
Allowance for Credit Losses	$ 479,904	$ -	$ 190,888	$ 670,792
Allowance for Credit Losses				
Ending Balance, Allowance for Credit Losses Related to Loans:				
Individually Evaluated for Impairment	$ 36,556	$ -	$ 8,300	$ 44,856
Collectively Evaluated for Impairment	443,348	-	182,588	625,936
Total	$ 479,904	$ -	$ 190,888	$ 670,792
Loans				
Ending Balance for Loans and Related Accrued Interest:				
Individually Evaluated for Impairment	$ 212,980	$ 48,051,811	$ 33,857	$ 48,298,648
Collectively Evaluated for Impairment	30,196,160	-	21,070,306	51,266,466
Total	$ 30,409,140	$ 48,051,811	$ 21,104,163	$ 99,565,114

(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, 2019	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
Acceptable	**$ 29,723,483**	**$ 1,198,721**	**$ 51,583,749**	**$ 20,800,575**	**$ 103,306,528**
Special Mention	**1,297,856**	**-**	**3,004,750**	**159,563**	**4,462,169**
Substandard	**1,074,366**	**-**	**-**	**326,963**	**1,401,329**
Doubtful	**8,063**	**-**	**-**	**13,567**	**21,630**
Loss	**-**	**-**	**-**	**-**	**-**
Total	**$ 32,103,768**	**$ 1,198,721**	**$ 54,588,499**	**$ 21,300,668**	**$ 109,191,656**
December 31, 2018					
Acceptable	$ 29,678,071	$ 1,075,376	$ 50,295,238	$ 21,034,895	$ 102,083,580
Special Mention	877,840	-	471,155	138,826	1,487,821
Substandard	941,973	-	58,911	271,327	1,272,211
Doubtful	5,498	-	-	-	5,498
Loss	-	-	-	-	-
Total	$ 31,503,382	$ 1,075,376	$ 50,825,304	$ 21,445,048	$ 104,849,110
December 31, 2017					
Acceptable	$ 27,452,294	$ 998,215	$ 47,581,031	$ 20,765,915	$ 96,797,455
Special Mention	1,076,344	-	470,780	222,166	1,769,290
Substandard	878,047	-	-	116,082	994,129
Doubtful	4,240	-	-	-	4,240
Loss	-	-	-	-	-
Total	$ 29,410,925	$ 998,215	$ 48,051,811	$ 21,104,163	$ 99,565,114

Aging Analysis

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

December 31, 2019	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
30-89 Days Past Due	**$ 12,111**	**$ -**	**$ -**	**$ 31,360**	**$ 43,471**
90 Days Past Due	**43,329**	**-**	**-**	**14,943**	**58,272**
Total Past Due	**$ 55,440**	**$ -**	**$ -**	**$ 46,303**	**$ 101,743**
Current	**32,048,328**	**1,198,721**	**54,588,499**	**21,254,365**	**109,089,913**
Total	**$ 32,103,768**	**$ 1,198,721**	**$ 54,588,499**	**$ 21,300,668**	**$ 109,191,656**
Accruing Loans 90 Days or More Past Due	**$ 4,314**	**$ -**	**$ -**	**$ 1,377**	**$ 5,691**
December 31, 2018					
30-89 Days Past Due	$ 27,692	$ -	$ -	$ 1,025	$ 28,717
90 Days Past Due	15,748	-	-	21,521	37,269
Total Past Due	$ 43,440	$ -	$ -	$ 22,546	$ 65,986
Current	31,459,942	1,075,376	50,825,304	21,422,502	104,783,124
Total	$ 31,503,382	$ 1,075,376	$ 50,825,304	$ 21,445,048	$ 104,849,110
Accruing Loans 90 Days or More Past Due	$ 1,685	$ -	$ -	$ -	$ 1,685

December 31, 2017	Agribusiness Non-Guaranteed	Agribusiness Guaranteed	Farm Credit Banking	Rural Infrastructure	Total
30-89 Days Past Due	$ 33,503	$ -	$ -	$ -	$ 33,503
90 Days Past Due	14,190	-	-	-	14,190
Total Past Due	$ 47,693	$ -	$ -	$ -	$ 47,693
Current	29,363,232	998,215	48,051,811	21,104,163	99,517,421
Total	$ 29,410,925	$ 998,215	$ 48,051,811	$ 21,104,163	$ 99,565,114
Accruing Loans 90 Days or More Past Due	$ 670	$ -	$ -	$ -	$ 670

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, 2019	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[(1)]	Farm Credit Banking[(1)]	Rural Infrastructure	Total
Nonaccrual Loans[(2)]	**$ 220,398**	**$ -**	**$ -**	**$ 20,285**	**$ 240,683**
Accruing Loans 90 Days or More Past Due	**4,314**	**-**	**-**	**1,377**	**5,691**
Accruing Restructured Loans	**6,192**	**-**	**-**	**-**	**6,192**
Total Impaired Loans	**$ 230,904**	**$ -**	**$ -**	**$ 21,662**	**$ 252,566**
December 31, 2018					
Nonaccrual Loans[(2)]	$ 288,125	$ -	$ -	$ 38,163	$ 326,288
Accruing Loans 90 Days or More Past Due	1,685	-	-	-	1,685
Accruing Restructured Loans	-	-	-	-	-
Total Impaired Loans	$ 289,810	$ -	$ -	$ 38,163	$ 327,973
December 31, 2017					
Nonaccrual Loans[(2)]	$ 212,980	$ -	$ -	$ 33,857	$ 246,837
Accruing Loans 90 Days or More Past Due	670	-	-	-	670
Accruing Restructured Loans	-	-	-	-	-
Total Impaired Loans	$ 213,650	$ -	$ -	$ 33,857	$ 247,507

[(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, 2019, 2018 and 2017 are $96.2 million, $101.9 million and $17.3 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, 2019	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[1]	Farm Credit Banking[1]	Rural Infrastructure	Total
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 81,361	$ -	$ -	$ 1,377	$ 82,738
Unpaid Principal	110,807	-	-	1,373	112,180
Average Balance	110,375	-	-	807	111,182
Interest Income Recognized	4,012	-	-	116	4,128
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	149,543	-	-	20,285	169,828
Unpaid Principal	179,071	-	-	32,403	211,474
Allowance for Loan Losses	49,567	-	-	15,047	64,614
Average Balance	166,462	-	-	29,487	195,949
Interest Income Recognized	440	-	-	1,136	1,576
Total Impaired Loans					
Carrying Amount	230,904	-	-	21,662	252,566
Unpaid Principal	289,878	-	-	33,776	323,654
Allowance for Loan Losses	49,567	-	-	15,047	64,614
Average Balance	276,837	-	-	30,294	307,131
Interest Income Recognized	4,452	-	-	1,252	5,704
December 31, 2018					
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 153,541	$ -	$ -	$ -	$ 153,541
Unpaid Principal	174,350	-	-	-	174,350
Average Balance	137,035	-	-	-	137,035
Interest Income Recognized	6,482	-	-	7,588	14,070
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	136,269	-	-	38,163	174,432
Unpaid Principal	154,863	-	-	42,423	197,286
Allowance for Loan Losses	64,289	-	-	22,797	87,086
Average Balance	158,276	-	-	39,596	197,872
Interest Income Recognized	1,784	-	-	-	1,784
Total Impaired Loans					
Carrying Amount	289,810	-	-	38,163	327,973
Unpaid Principal	329,213	-	-	42,423	371,636
Allowance for Loan Losses	64,289	-	-	22,797	87,086
Average Balance	295,311	-	-	39,596	334,907
Interest Income Recognized	8,266	-	-	7,588	15,854

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

December 31, 2017	Agribusiness Non-Guaranteed	Agribusiness Guaranteed[1]	Farm Credit Banking[1]	Rural Infrastructure	Total
Impaired Loans With No Related Allowance for Loan Losses					
Carrying Amount	$ 99,838	$ -	$ -	$ -	$ 99,838
Unpaid Principal	141,715	-	-	-	141,715
Average Balance	102,234	-	-	9,277	111,511
Interest Income Recognized	2,487	-	-	4,118	6,605
Impaired Loans With Related Allowance for Loan Losses					
Carrying Amount	113,812	-	-	33,857	147,669
Unpaid Principal	122,027	-	-	34,841	156,868
Allowance for Loan Losses	36,556	-	-	8,300	44,856
Average Balance	111,929	-	-	7,206	119,135
Interest Income Recognized	49	-	-	-	49
Total Impaired Loans					
Carrying Amount	213,650	-	-	33,857	247,507
Unpaid Principal	263,742	-	-	34,841	298,583
Allowance for Loan Losses	36,556	-	-	8,300	44,856
Average Balance	214,163	-	-	16,483	230,646
Interest Income Recognized	2,536	-	-	4,118	6,654

[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, 2019	
Interest Income Which Would Have Been Recognized Per Original Terms	$ 28,007
Less: Interest Income Recognized	(5,208)
Forgone Interest Income	**$ 22,799**

Commitments on Impaired Loans

There were $38.9 million in commitments available to be drawn by borrowers whose loans were classified as impaired at December 31, 2019.

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,	2019	2018	2017
Number of Loan Modifications that Qualified as a TDR	**4**	3	-
Total Loan Amount Before Modification	**$ 14,294**	$ 124,136	$ -
Total Loan Amount After Modification	**12,758**	115,636	-

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,	2019	2018	2017
Net Investment in Direct Financing Leases:			
Minimum Lease Payments to be Received, Net of Participation Interests	**$ 2,181**	$ 2,186	$ 2,096
Estimated Residual Values of Leased Property (Unguaranteed)	**1,486**	1,184	1,159
Initial Direct Costs	**27**	33	32
Less: Unearned Finance Income	**(399)**	(382)	(332)
Net Investment in Direct Financing Leases	**$ 3,295**	$ 3,021	$ 2,955
Property on Operating Leases:			
Vehicles and Other Equipment	**$ 648**	$ 722	$ 777
Initial Direct Costs	**(1)**	(1)	(1)
Total	**647**	721	776
Less: Accumulated Depreciation	**(316)**	(353)	(363)
Net Property on Operating Leases	**$ 331**	$ 368	$ 413
Year Ended December 31,	**2019**	**2018**	**2017**
Depreciation Expense	**$ 119**	$ 132	$ 148

At December 31, 2019, 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
2020	$ 641	$ 51
2021	514	38
2022	340	25
2023	254	9
2024	148	2
Subsequent Years	276	2

Note 4 – Investment Securities

A summary of the amortized cost and fair value of investment securities available-for-sale is as follows. See Note 12 for disclosures about estimated fair values of financial instruments, including investments.

($ in Millions)

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of Deposit	**$ 400**	**$ -**	**$ -**	**$ 400**
U.S. Treasury Debt	**15,908**	**169**	**(15)**	**16,062**
U.S. Agency Debt	**2,804**	**58**	**(8)**	**2,854**
Residential Mortgage-Backed Securities (MBS):				
Ginnie Mae	**2,310**	**27**	**-**	**2,337**
U.S. Agency	**4,355**	**41**	**(11)**	**4,385**
Commercial MBS:				
U.S. Agency	**4,951**	**12**	**(17)**	**4,946**
Corporate Bonds	**363**	**10**	**-**	**373**
Asset-Backed and Other	**1,068**	**1**	**-**	**1,069**
Total	**$ 32,159**	**$ 318**	**$ (51)**	**$ 32,426**

($ in Millions)

December 31, 2018	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of Deposit	$ 975	$ -	$ -	$ 975
U.S. Treasury Debt	15,424	20	(176)	15,268
U.S. Agency Debt	2,257	3	(21)	2,239
Residential MBS:				
Ginnie Mae	2,969	5	(34)	2,940
U.S. Agency	5,613	4	(89)	5,528
Non-Agency	12	1	-	13
Commercial MBS:				
U.S. Agency	2,882	1	(16)	2,867
Corporate Bonds	120	-	(1)	119
Asset-Backed and Other	1,342	1	-	1,343
Total	$ 31,594	$ 35	$ (337)	$ 31,292

($ in Millions)

December 31, 2017	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of Deposit	$ 775	$ -	$ -	$ 775
U.S. Treasury Debt	11,137	8	(116)	11,029
U.S. Agency Debt	3,369	7	(20)	3,356
Residential MBS:				
Ginnie Mae	1,876	1	(21)	1,856
U.S. Agency	6,758	24	(64)	6,718
FHA/VA Non-Wrapped Reperformer	235	22	-	257
Non-Agency	26	3	-	29
Commercial MBS:				
U.S. Agency	2,504	3	(8)	2,499
Agricultural MBS:				
Farmer Mac	79	-	(1)	78
Corporate Bonds	40	-	-	40
Asset-Backed and Other	225	8	-	233
Total	$ 27,024	$ 76	$ (230)	$ 26,870

A summary of the contractual maturity, amortized cost, fair value and weighted average yield of investment securities by investment category at December 31, 2019 is as follows:

Certificates of Deposit

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 400	$ 400	1.90 %
One to Five Years	-	-	-
Five to Ten Years	-	-	-
After Ten Years	-	-	-
Total	$ 400	$ 400	1.90

U.S. Treasury Debt Securities

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 5,587	$ 5,590	1.75 %
One to Five Years	7,692	7,761	1.93
Five to Ten Years	2,629	2,711	2.35
After Ten Years	-	-	-
Total	$ 15,908	$ 16,062	1.94

U.S. Agency Debt Securities

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 141	$ 141	2.41 %
One to Five Years	1,336	1,344	2.06
Five to Ten Years	1,037	1,061	2.42
After Ten Years	290	308	2.94
Total	$ 2,804	$ 2,854	2.30

Ginnie Mae Residential MBS

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ -	$ -	- %
One to Five Years	2	2	3.75
Five to Ten Years	2	2	3.94
After Ten Years	2,306	2,333	2.75
Total	$ 2,310	$ 2,337	2.76

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	2.25
Five to Ten Years	81	81	2.56
After Ten Years	4,272	4,302	2.54
Total	$ 4,355	$ 4,385	2.54

U.S. Agency Commercial MBS

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ -	$ -	- %
One to Five Years	1,661	1,660	2.14
Five to Ten Years	3,158	3,155	2.23
After Ten Years	132	131	2.34
Total	$ 4,951	$ 4,946	2.20

Corporate Bonds

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ -	$ -	- %
One to Five Years	106	109	3.95
Five to Ten Years	257	264	3.91
After Ten Years	-	-	-
Total	$ 363	$ 373	3.92

Asset-Backed Securities and Other

($ in Millions)

Contractual Maturity	Amortized Cost	Fair Value	Weighted Average Yield
In One Year or Less	$ 236	$ 236	1.89 %
One to Five Years	823	824	2.41
Five to Ten Years	1	1	4.65
After Ten Years	8	8	5.97
Total	$ 1,068	$ 1,069	2.32

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 tables show 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, 2019, 2018 and 2017. 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, 2019				
Certificates of Deposit	**$ 50**	**$ -**	**$ -**	**$ -**
U.S. Treasury Debt	**2,020**	**(8)**	**3,454**	**(7)**
U.S. Agency Debt	**549**	**(6)**	**553**	**(2)**
Residential MBS:				
Ginnie Mae	**34**	**-**	**25**	**-**
U.S. Agency	**327**	**(1)**	**831**	**(10)**
Commercial MBS:				
U.S. Agency	**3,311**	**(14)**	**543**	**(3)**
Corporate Bonds	**52**	**-**	**-**	**-**
Asset-Backed and Other	**273**	**-**	**13**	**-**
Total	**$ 6,616**	**$ (29)**	**$ 5,419**	**$ (22)**

($ in Millions)	Less Than 12 Months		Greater Than 12 Months	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
December 31, 2018				
Certificates of Deposit	$ -	$ -	$ -	$ -
U.S. Treasury Debt	2,839	(4)	10,001	(172)
U.S. Agency Debt	42	-	1,504	(21)
Residential MBS:				
Ginnie Mae	304	(3)	1,410	(31)
U.S. Agency	139	-	4,474	(89)
Non-Agency	2	-	3	-
Commercial MBS:				
U.S. Agency	1,695	(7)	746	(9)
Corporate Bonds	86	(1)	-	-
Asset-Backed and Other	647	-	13	-
Total	$ 5,754	$ (15)	$ 18,151	$ (322)
December 31, 2017				
Certificates of Deposit	$ 280	$ -	$ -	$ -
U.S. Treasury Debt	6,048	(46)	2,953	(70)
U.S. Agency Debt	977	(5)	1,039	(15)
Residential MBS:				
Ginnie Mae	1,540	(21)	53	-
U.S. Agency	2,109	(21)	1,406	(43)
FHA/VA Non-Wrapped Reperformer	21	-	-	-
Non-Agency	1	-	7	-
Commercial MBS:				
U.S. Agency	814	(4)	356	(4)
Agricultural MBS:				
Farmer Mac	-	-	78	(1)
Corporate Bonds	10	-	-	-
Asset-Backed and Other	77	-	127	-
Total	$ 11,877	$ (97)	$ 6,019	$ (133)

As of December 31, 2019, 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 2019, 2018 and 2017. We had no securities with previously recorded OTTI losses at December 31, 2019. The fair value of our securities with previously recorded OTTI losses was $3.4 million and $9.6 million at December 31, 2018 and 2017, respectively.

Sales of Investment Securities

In 2019, we sold fourteen U.S. Treasury debt securities and our remaining non-agency MBS and home equity ABS portfolios for total proceeds of $2.3 billion resulting in gains of $0.9 million. We sold these securities to manage liquidity and credit exposure, and to take advantage of favorable market conditions.

In 2018, we sold five U.S. Treasury debt securities for total proceeds of $1.4 billion which approximated their combined book value. We also sold all of our remaining FHA/VA non-wrapped reperformer MBS for total proceeds of $262.1 million and eight non-agency debt securities for total proceeds of $30.1 million resulting in gains of $37.8 million and $11.1 million, respectively. These MBS and non-agency debt securities were acquired in our 2012 merger with U.S. AgBank and were credit-impaired. Lastly, we sold our Federal Agricultural Mortgage Corporation (Farmer Mac) MBS for total proceeds of $61.0 million resulting in gains of $0.1 million. The Farmer Mac securities were also acquired in the 2012 merger with U.S. AgBank.

In 2017, we sold nine U.S. Agency debt securities for total proceeds of $1.6 billion as well as six non-agency MBS for total proceeds of $34.1 million resulting in gains of $1.7 million and $7.7 million, respectively.

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,	2019	2018	2017
Bonds	**$ 119,902**	$ 112,067	$ 100,950
Medium-term Notes	**86**	89	89
Discount Notes	**11,234**	14,243	16,124
Total Systemwide Debt Securities	**131,222**	126,399	117,163
Cash Investment Services Payable	**758**	883	941
Other	**250**	350	302
Total Bonds and Notes	**$ 132,230**	$ 127,632	$ 118,406

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, 2019 was 97 days.

Other Bonds and Notes

Cash investment services payable mature within one year. Other bonds and notes includes cash collateral payable to derivative counterparties that have posted collateral to us.

Other bonds and notes also includes $250.0 million at December 31, 2019, 2018 and 2017 in funding pursuant to a bond guarantee program offered by the Rural Utilities Service (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. As part of the bond guarantee agreement with RUS, we are required to pledge collateral in an amount at least equal to the principal balance of the notes outstanding. The bonds outstanding mature in 4-7 years.

Maturities and Rates

The aggregate maturities and the weighted average interest rates of CoBank's Systemwide Debt Securities at December 31, 2019 are shown in the following table. Weighted average interest rates include the effect of related derivative financial instruments.

($ 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
2020	$ 48,406	1.81 %	$ -	- %	$ 11,234	1.69 %	$ 59,640	1.79 %
2021	33,397	1.85	4	7.35	-	-	33,401	1.85
2022	8,253	2.01	-	-	-	-	8,253	2.01
2023	6,205	2.40	-	-	-	-	6,205	2.40
2024	4,166	2.28	-	-	-	-	4,166	2.28
2025 and thereafter	19,475	2.90	82	5.77	-	-	19,557	2.91
Total	$ 119,902	2.06	$ 86	5.84	$ 11,234	1.69	$ 131,222	2.03

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, 2019, callable debt was $13.3 billion, with the range of first call dates being from January 2020 through November 2026.

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 $10.9 billion at December 31, 2019. 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 2016 and modifications were made effective January 1, 2017 to adapt to new FCA capital regulations that became effective on January 1, 2017. For discussion related to the FCA's capital regulations, see Note 7.

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, 2019, 2018 and 2017, 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 2016, 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 Corporation 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. When the amount in the Insurance Fund exceeds the SBA, the Insurance Corporation is required to reduce premiums, and, in some instances, may return excess amounts, but must still ensure that premiums are sufficient to maintain the level of the Insurance Fund at the SBA. In 2019 and 2018, the Insurance Corporation returned $13.8 million and $35.0 million, respectively, in excess amounts related to the Insurance Fund to CoBank. There were no returns of excess amounts from the Insurance Corporation in 2017.

The Insurance Corporation premium rates were 9 basis points of average outstanding adjusted insured debt obligations for 2019 and 2018 and 15 basis points for 2017.

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, 2019, the assets of the Insurance Fund aggregated $5.2 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, 2020 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

During 2019, 2018 and 2017, we recorded losses of $16.6 million, $15.0 million and $42.1 million, respectively, on the early extinguishment of $207.8 million, $1,831 million and $897.4 million, respectively, of Systemwide Debt Securities. The Systemwide Debt Securities extinguished in 2018 and 2017 included $1,471 million and $474.6 million, respectively, in Systemwide Debt Securities sold at market value to other Farm Credit Banks. There were no sales of Systemwide Debt Securities to other Farm Credit Banks during 2019. All losses on early extinguishment of debt are reported as a component of noninterest income.

Note 6 – Subordinated Debt

We had no subordinated debt outstanding at December 31, 2019, 2018 and 2017.

On June 15, 2017, we redeemed all of our outstanding floating-rate subordinated notes due in 2022 totaling $500.0 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.

On April 15, 2016, we redeemed all of our outstanding 7.875 percent subordinated 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. For information relating to a complaint filed by a number of investors who had held the subordinated notes alleging CoBank impermissibly redeemed the subordinated notes, see Note 16.

Note 7 – Shareholders' Equity

Description of Equities

As of December 31, 2019, we had $1.5 billion of preferred stock and $3.6 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)	9,600	1,501	34,715
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 2019, 2018 and 2017 are summarized in the following table.

Shares of Common Stock (in Thousands)

	2019	2018	2017
Beginning of the Year	**34,157**	32,404	30,722
Issuances	**2,499**	2,064	1,941
Retirements	**(440)**	(311)	(259)
End of the Year	**36,216**	34,157	32,404

In December 2016, our shareholders approved an increase in the amount of preferred stock that CoBank may have outstanding at any time from $1.5 billion to $2.5 billion effective January 1, 2017, and provided authorization for the Bank to issue preferred stock up to the new limit through December 31, 2026. These measures allow 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 would 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 F, Series G, Series H and Series I 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.

Preferred Stock

The following table summarizes our outstanding preferred stock as of December 31, 2019.

Preferred Stock as of December 31, 2019

	Series E	Series F	Series G	Series H	Series I
Type	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual	Non-Cumulative Perpetual
Issue Date	January 2012	October 2012	April 2013	November 2014	April 2016
Shares Outstanding (000)	225	4,000	2,000	3,000	375
Amount Outstanding (000)	$225,000	$400,000	$200,000	$300,000	$375,000
Par Value (per share)	$1,000	$100	$100	$100	$1,000
Current Dividend Rate (%)	3-month USD LIBOR + 1.18 (3.190% at December 31, 2019)	6.25%	6.125%	6.20%	6.25%
Next Change in Dividend Rate (% and dates)	n/a	3-month USD LIBOR + 4.557% beginning on October 1, 2022	n/a	3-month USD LIBOR + 3.744% beginning on January 1, 2025	3-month USD LIBOR + 4.66% beginning on October 1, 2026
Dividend Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Semi-Annual; Quarterly beginning on October 1, 2026
Optional Redemption Begins (Date)[1]	July 2012 and each five year anniversary thereafter at par plus accrued dividends	Quarterly calls on or after October 1, 2022 at par plus accrued dividends	Quarterly calls on or after July 1, 2018 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

[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.

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.

All stock retirements, including preferred stock redemptions, require the approval of our Board of Directors. Payments of preferred stock dividends also require the approval of our Board of Directors.

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 124. Additionally, effective January 1, 2016, 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. Likewise, 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. Eligible common shareholders will receive total patronage for 2019 of $643.6 million in March 2020, of which $515.2 million will be paid in cash (including $39.8 million of special cash patronage) and $128.4 million will be paid in common stock. For 2018, total patronage was $699.7 million, which included a special cash patronage distribution of $96.2 million made to customer-owners in September 2018. This distribution was incremental to the normal patronage distributions of $475.6 million and $127.9 million which were paid in cash and common stock, respectively, in the subsequent year. For 2017, total patronage was $610.4 million, of which $491.9 million and $118.5 million was paid in cash and common stock, respectively, in the subsequent year. 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, 2019.

Effective January 1, 2017, CoBank implemented new regulatory capital requirements as required by the FCA. At December 31, 2019, 2018 and 2017, our capital and leverage ratios exceeded regulatory minimums as noted in the following table.

Regulatory Capital Ratios

	Regulatory	December 31,		
	Minimum	2019	2018	2017
Common Equity Tier 1 Capital Ratio	4.5 %	**12.70 %**	12.38 %	11.67 %
Tier 1 Capital Ratio	6.0	**14.83**	14.57	13.97
Total Capital Ratio	8.0	**15.86**	15.58	15.24
Tier 1 Leverage Ratio	4.0	**7.51**	7.53	7.26
Unallocated Retained Earnings (URE) and URE Equivalents Leverage Ratio	1.5	**3.24**	3.19	2.96
Permanent Capital Ratio	7.0	**14.95**	14.69	14.29

See pages 131 through 140 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 2019, 2018 and 2017 are presented in the following table.

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

	Unrealized Gains (Losses) on Investment Securities		Unrealized Gains (Losses) on Interest Rate Swaps and Other Financial Instruments	Net Pension Adjustment	Total
	Non-OTTI	OTTI			
Balance at January 1, 2019	**$ (271,344)**	**$ 102**	**$ (25,613)**	**$ (66,249)**	**$ (363,104)**
Cumulative Effect of Change in Accounting Principle[(2)]	**-**	**-**	**171**	**-**	**171**
Balance at January 1, 2019, as adjusted	**$ (271,344)**	**$ 102**	**$ (25,442)**	**$ (66,249)**	**$ (362,933)**
Other Comprehensive Income (Loss) Before Reclassifications	**505,387**	**(321)**	**(51,821)**	**(12,653)**	**440,592**
Amounts Reclassified from Accumulated Other Comprehensive Income (Loss)	**(1,157)**	**219**	**13,820**	**3,884**	**16,766**
Net Current-Period Other Comprehensive Income (Loss)	**504,230**	**(102)**	**(38,001)**	**(8,769)**	**457,358**
Balance at December 31, 2019	**$ 232,886**	**$ -**	**$ (63,443)**	**$ (75,018)**	**$ 94,425**
Balance at January 1, 2018	$ (125,198)	$ 3,236	$ (49,981)	$ (60,025)	$ (231,968)
Cumulative Effect of Change in Accounting Principle[(3)]	(9,953)	270	(4,474)	(12,457)	(26,614)
Balance at January 1, 2018, as adjusted	$ (135,151)	$ 3,506	$ (54,455)	$ (72,482)	$ (258,582)
Other Comprehensive Income (Loss) Before Reclassifications	(93,320)	2,793	9,895	368	(80,264)
Amounts Reclassified from Accumulated Other Comprehensive Income (Loss)	(42,873)	(6,197)	18,947	5,865	(24,258)
Net Current-Period Other Comprehensive Income (Loss)	(136,193)	(3,404)	28,842	6,233	(104,522)
Balance at December 31, 2018	$ (271,344)	$ 102	$ (25,613)	$ (66,249)	$ (363,104)
Balance at January 1, 2017	$ (19,627)	$ 4,969	$ (37,707)	$ (67,518)	$ (119,883)
Other Comprehensive Income (Loss) Before Reclassifications	(100,251)	1,939	(22,578)	4,211	(116,679)
Amounts Reclassified from Accumulated Other Comprehensive Income (Loss)	(5,320)	(3,672)	10,304	3,282	4,594
Net Current-Period Other Comprehensive Income (Loss)	(105,571)	(1,733)	(12,274)	7,493	(112,085)
Balance at December 31, 2017	$ (125,198)	$ 3,236	$ (49,981)	$ (60,025)	$ (231,968)

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

(2) Effective January 1, 2019, we adopted changes in derivative accounting pursuant to ASU "Derivatives and Hedging (Topic 815)", as described in Note 2.

(3) Effective January 1, 2018, we adopted changes pursuant to ASU "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," as described in Note 2.

The following table presents the effect of reclassifications from accumulated other comprehensive income (loss) to net income for the years ended December 31, 2019, 2018 and 2017.

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

Year Ended December 31, 2019		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	**$**	**1,148**	Noninterest Income - Other, Net
Tax Effect		**9**	Provision for Income Taxes
Unrealized Gains (Losses) on OTTI Investment Securities:			
Sales Gains and Losses		**(256)**	Noninterest Income - Other, Net
Tax effect		**37**	Provision for Income Taxes
Unrealized Gains (Losses) on Interest Rate Swaps and Other Financial Instruments:			
Interest Rate Contracts		**(12,280)**	Interest Expense
Foreign Exchange Contracts		**(2,127)**	Interest Income
Tax Effect		**587**	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		**(4,137)**	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		**(1,014)**	Operating Expenses - Employee Compensation
Tax Effect		**1,267**	Provision for Income Taxes
Total Reclassifications	**$**	**(16,766)**	
Year Ended December 31, 2018			
Unrealized Gains (Losses) on Non-OTTI Investment Securities:			
Sales Gains and Losses	$	42,877	Noninterest Income - Other, Net
Tax Effect		(4)	Provision for Income Taxes
Unrealized Gains (Losses) on OTTI Investment Securities:			
Sales Gains and Losses		6,197	Noninterest Income - Other, Net
Unrealized Gains (Losses) on Interest Rate Swaps and Other Financial Instruments:			
Interest Rate Contracts		(8,481)	Interest Expense
Termination of Interest Rate Contracts		(13,073)	Noninterest Expense - Other, Net
Foreign Exchange Contracts		3,388	Interest Income
Tax Effect		(781)	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		(6,754)	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		(1,025)	Operating Expenses - Employee Compensation
Tax Effect		1,914	Provision for Income Taxes
Total Reclassifications	$	24,258	
Year Ended December 31, 2017			
Unrealized Gains (Losses) on Non-OTTI Investment Securities:			
Sales Gains and Losses	$	5,692	Noninterest Income - Other, Net
Tax Effect		(372)	Provision for Income Taxes
Unrealized Gains (Losses) on OTTI Investment Securities:			
Sales Gains and Losses		3,695	Noninterest Income - Other, Net
Tax Effect		(23)	Provision for Income Taxes
Unrealized Gains (Losses) on Interest Rate Swaps and Other Financial Instruments:			
Interest Rate Contracts		(6,701)	Interest Expense
Foreign Exchange Contracts		(6,157)	Interest Income
Tax Effect		2,554	Provision for Income Taxes
Pension and Other Benefit Plans:			
Net Actuarial Gain/Loss		(4,265)	Operating Expenses - Employee Compensation
Prior Service Cost/Credit		(1,029)	Operating Expenses - Employee Compensation
Tax Effect		2,012	Provision for Income Taxes
Total Reclassifications	$	(4,594)	

Note 8 – 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 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 $11.2 million, $10.5 million and $9.8 million for 2019, 2018 and 2017, 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-year period ended December 31, 2019, as well as a statement of funded status as of December 31 of each year.

	Retirement Plans			Other Postretirement Benefits		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**
Change in Benefit Obligation:						
Benefit Obligation at Beginning of Year	**$ 359,765**	$ 380,770	$ 358,074	**$ 2,677**	$ 2,934	$ 3,054
Service Cost	**5,028**	6,135	6,469	**59**	65	78
Interest Cost on Benefit Obligation	**15,504**	13,887	14,960	**114**	106	125
Plan Participant Contributions	**-**	-	-	**376**	459	515
Transfers	**(182)**	-	-	**-**	-	-
Actuarial (Gain) Loss	**45,267**	(22,787)	20,345	**(619)**	(273)	172
Benefits Paid	**(18,088)**	(18,240)	(19,078)	**(530)**	(614)	(1,010)
Benefit Obligation at End of Year	**407,294**	359,765	380,770	**2,077**	2,677	2,934
Change in Plan Assets:						
Fair Value of Plan Assets at Beginning of Year	**315,174**	324,018	283,712	**-**	-	-
Actual Return on Plan Assets	**46,620**	(4,350)	44,753	**-**	-	-
Employer Contributions	**6,201**	13,746	14,631	**154**	155	495
Transfers	**(182)**	-	-	**-**	-	
Benefits Paid	**(18,088)**	(18,240)	(19,078)	**(530)**	(614)	(1,010)
Plan Participant Contributions	**-**	-	-	**376**	459	515
Fair Value of Plan Assets at End of Year	**349,725**	315,174	324,018	**-**	-	-
Funded Status – Fair Value of Plan Assets Less Than Benefit Obligation	**(57,569)**	(44,591)	(56,752)	**(2,077)**	(2,677)	(2,934)
Net Amount Recognized - December 31	**$ (57,569)**	$ (44,591)	$ (56,752)	**$ (2,077)**	$ (2,677)	$ (2,934)

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

		2019		2018		2017
Projected Benefit Obligation:						
Funded Qualified Plans	$	**358,757**	$	316,771	$	335,973
SERP/ERP		**48,537**		42,994		44,797
Total	$	**407,294**	$	359,765	$	380,770
Accumulated Benefit Obligation:						
Funded Qualified Plans	$	**343,966**	$	303,938	$	320,407
SERP/ERP		**43,766**		38,351		38,462
Total	$	**387,732**	$	342,289	$	358,869

The $349.7 million in fair value of plan assets shown in the table on page 104 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 $358.8 million and $344.0 million, respectively, as of December 31, 2019.

We hold assets in trust accounts related to our SERPs and ERP. Such assets had a fair value of $43.9 million as of December 31, 2019, which is included in other assets in the consolidated balance sheet. Unlike the assets related to the qualified plans, those funds remain Bank assets and would be subject to general creditors in a bankruptcy or liquidation. Accordingly, they are not included as part of the assets in the table on page 104. As depicted in the preceding table, our SERPs and ERP had a projected benefit obligation and an accumulated benefit obligation of $48.5 million and $43.8 million, respectively, as of December 31, 2019.

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

	Retirement Plans						Other Postretirement Benefits					
		2019		2018		2017		2019		2018		2017
Accrued Benefit Liabilities	$	**(57,569)**	$	(44,591)	$	(56,752)	$	**(2,077)**	$	(2,677)	$	(2,934)
Net Amounts Recognized	$	**(57,569)**	$	(44,591)	$	(56,752)	$	**(2,077)**	$	(2,677)	$	(2,934)

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

	Retirement Plans						Other Postretirement Benefits					
		2019		2018		2017		2019		2018		2017
Service Cost	$	**5,028**	$	6,135	$	6,469	$	**59**	$	65	$	78
Interest Cost on Benefit Obligation		**15,504**		13,887		14,960		**114**		106		125
Expected Return on Plan Assets		**(18,752)**		(18,222)		(17,443)		**-**		-		-
Amortization of Prior Service Cost		**1,014**		1,025		1,029		**-**		-		-
Recognized Actuarial Loss		**4,365**		6,967		4,504		**(228)**		(213)		(239)
Net Periodic Benefit Cost	$	**7,159**	$	9,792	$	9,519	$	**(55)**	$	(42)	$	(36)

We anticipate that our total pension expense for the Retirement Plans will be approximately $8.8 million in 2020, as compared to $7.2 million in 2019.

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, 2019		Qualified Retirement Plans		Nonqualified Retirement Plans		Other Postretirement Benefits		Total
Net Actuarial Loss (Gain)	$	79,998	$	17,335	$	(3,258)	$	94,075
Prior Service Cost		4,210		427		-		4,637
Amount Recognized in Accumulated Other Comprehensive Loss (Income) [1]	$	84,208	$	17,762	$	(3,258)	$	98,712

[1] Amount recognized in accumulated other comprehensive (income) loss, net of tax, is a loss of $75.0 million as of December 31, 2019. Approximately $7 million, net of tax, will be amortized from accumulated other comprehensive (income) loss into net periodic benefit cost in 2020.

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:

	2019	2018	2017
Discount Rate	**3.29 %**	4.45 %	3.75 %
Rate of Compensation Increase	**3.60**	3.60	3.60

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

	2019	2018	2017
Discount Rate	**4.45 %**	3.75 %	4.30 %
Expected Rate of Return on Plan Assets (Qualified Plans Only)	**5.94**	6.00	6.00
Rate of Compensation Increase	**3.60**	3.60	4.75

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 7.4 percent annual rate of increase in the per capita cost of covered health care benefits was assumed for 2019. The rate was assumed to decrease gradually to 4.5 percent through 2026 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, 2019, 2018 and 2017 are shown in the following table, along with the adopted range for target allocation percentages by asset class. 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 each year at the direction of the Committee.

Retirement Plan Assets

	Target Allocation Range	Percentage of Plan Assets at December 31,		
		2019	2018	2017
Asset Category				
Domestic Equity	32.5-42.5 %	**39 %**	38 %	41 %
Domestic Fixed Income	37.5-47.5	**43**	40	35
International Equity, Emerging Markets Equity and Fixed Income	5-25	**13**	17	19
Hedge Funds	0-10	**5**	5	5
Total	100 %	**100 %**	100 %	100 %

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, 2019 for each of the fair value hierarchy levels as defined in Note 12.

Fair Value Measurements

December 31, 2019

	Level 1	Level 2	Level 3	NAV [1]	Total
Asset Category					
Cash	$ 696	$ -	$ -	$ -	$ 696
Domestic Equity:					
Large-cap Growth Funds[2]	61,655	-	-	55,768	117,423
Small-cap Growth Funds[2]	-	-	-	17,394	17,394
International Equity:					
International Funds[3]	30,394	-	-	9,607	40,001
Domestic Fixed Income:					
Total Return Funds[4]	71,915	-	-	-	71,915
Bond Funds[5]	-	78,271	-	-	78,271
Emerging Markets:					
Equity and Fixed Income Funds[6]	7,173	-	-	7	7,180
Hedge Funds[7]	-	-	-	16,845	16,845
Total	$ 171,833	$ 78,271	$ -	$ 99,621	$ 349,725

(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 investment grade debt securities and cash instruments.

(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.

(7) Funds invest in diversified portfolios of stocks, bonds and various other financial instruments.

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; and to provide competitive investment returns as measured against appropriate benchmarks.

Expected Contributions

We expect to contribute approximately $3.4 million to our funded, qualified defined benefit pension plans in 2020 and $0.3 million, net of collected retiree premiums, to our other postretirement benefit plans in 2020. We also expect to contribute approximately $2.7 million to our trust accounts related to our SERPs and ERP in 2020. Our actual 2020 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
2020	$ 22,509	$ 198
2021	22,727	224
2022	23,736	228
2023	25,320	229
2024	25,012	223
2025 to 2029	128,944	1,039

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. Likewise, a minimum return on active patron stock investment must be achieved in each year within the three-year performance period for a full payout under the long-term incentive compensation plan. The required minimum return on active patron stock investment was 11 percent for all performance periods disclosed herein.

Note 9 – Income Taxes

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

Year Ended December 31,	2019	2018	2017
Current:			
Federal	**$ 34,052**	$ 20,916	$ 118,961
State	**1,492**	(8,049)	25,553
Total Current	**35,544**	12,867	144,514
Deferred:			
Federal	**48,961**	66,413	(126,622)
State	**(16,763)**	21,094	(2,828)
Total Deferred	**32,198**	87,507	(129,450)
Total	**$ 67,742**	$ 100,374	$ 15,064
Comprehensive Tax Provision			
Allocable to:			
Pre-Tax Income	**$ 67,742**	$ 100,374	$ 15,064
Shareholders' Equity -			
Amounts Allocated to:			
Investment Securities	**66,249**	(11,994)	(13,186)
Derivatives	**293**	(121)	4,156
Pension Liability	**(2,861)**	2,034	17,050
Total	**$ 131,423**	$ 90,293	$ 23,084

The components of deferred tax assets and liabilities are shown below.

December 31,	2019	2018	2017
Allowance for Credit Losses	**$ 154,376**	$ 153,819	$ 146,734
Employee Benefits	**39,637**	35,402	36,988
Unrealized Net Losses on Investment Securities and Derivatives	**-**	36,371	24,256
Loan Origination Fees	**8,298**	5,787	6,170
Other Deferred Tax Assets	**45,074**	39,786	41,052
Gross Deferred Tax Assets	**247,385**	271,165	255,200
Leasing	**595,297**	549,294	459,245
Unrealized Net Gains on Investment Securities and Derivatives	**30,171**	-	-
Other Deferred Tax Liabilities	**17,291**	21,366	18,024
Gross Deferred Tax Liabilities	**642,759**	570,660	477,269
Net Deferred Tax Liabilities	**$ (395,374)**	$ (299,495)	$ (222,069)

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 $643.6 million, $699.7 million, and $610.4 million of patronage distributions for the years ended December 31, 2019, 2018, and 2017, 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,	2019	2018	2017
Federal Tax at Statutory Rate	**$ 243,384**	$ 271,141	$ 399,135
State Tax, Net	**(12,064)**	17,267	15,435
Patronage Distributions			
Allocated by:			
Taxable Entity	**(61,619)**	(61,066)	(104,466)
Nontaxable Entity	**(65,173)**	(65,526)	(110,056)
Special Patronage Distributions			
Allocated by:			
Taxable Entity	**(6,268)**	(11,179)	-
Nontaxable Entity	**(2,098)**	(9,026)	-
Effect of Nontaxable Entity	**(10,899)**	(21,707)	(29,651)
Tax-Exempt Activities	**(195)**	(92)	(55)
Credits Related to Renewable			
Energy Transactions	**(2,534)**	(2,654)	(12,933)
Remeasurement of Deferred Tax			
Liabilities / Deferred Tax Assets	**-**	(15,782)	(142,323)
Other	**(14,792)**	(1,002)	(22)
Provision for Income Taxes	**$ 67,742**	**$ 100,374**	**$ 15,064**

A reconciliation of the beginning and ending amount of unrecognized tax benefits, excluding interest and penalties, is as follows:

Year Ended December 31, 2019	
Balance at Beginning of Year	**$ 4,784**
Additions Based on Tax Positions Related to the Current Year	**897**
Additions for Tax Positions of Prior Years	**385**
Reductions for Tax Positions of Prior Years	**-**
Lapse of Applicable Statute of Limitations	**(1,249)**
Balance at End of Year	**$ 4,817**
Year Ended December 31, 2018	
Balance at Beginning of Year	$ 4,600
Additions Based on Tax Positions Related to the Current Year	703
Additions for Tax Positions of Prior Years	267
Reductions for Tax Positions of Prior Years	(325)
Lapse of Applicable Statute of Limitations	(461)
Balance at End of Year	$ 4,784
Year Ended December 31, 2017	
Balance at Beginning of Year	$ 4,167
Additions Based on Tax Positions Related to the Current Year	1,203
Additions for Tax Positions of Prior Years	175
Reductions for Tax Positions of Prior Years	(39)
Lapse of Applicable Statute of Limitations	(906)
Balance at End of Year	$ 4,600

The total amount of unrecognized tax benefits that, if recognized, would impact the effective tax rate is $5.0 million. We do not currently believe that the unrecognized tax benefits will change significantly within the next 12 months.

CoBank is no longer subject to federal tax examination for periods before 2015.

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 2015. For all open audits, any potential adjustments have been considered in establishing our reserve for uncertain tax positions as of December 31, 2019.

We recognize accrued interest and penalties related to unrecognized tax benefits as a component of the provision for income taxes. We had approximately $1.4 million, $1.5 million, and $1.5 million of interest and penalties accrued at December 31, 2019, 2018 and 2017, respectively.

Note 10 – 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, 2019, outstanding commitments to extend credit and commercial letters of credit were $27.8 billion and $39.6 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, 2019, the maximum potential amount of future payments that we may be required to make under our outstanding standby letters of credit was $1.3 billion, with a fair value of $10.7 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 2020 to September 2037.

In addition, we had outstanding commitments of $39.0 million at December 31, 2019 to fund our equity investments, which include Rural Business Investment Companies.

Note 11 – Derivative Financial Instruments and Hedging Activities

Risk Management Objectives and Strategies

We maintain an overall interest rate risk management strategy that incorporates the use of derivative financial instruments 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 and fixed-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, 2019, 2018 and 2017 are shown in the following table.

Activity in the Notional Amounts of Derivative Financial Instruments

($ in Millions)	Swaps	Caps / Floors	Spots / Forwards	Total
December 31, 2018	**$ 28,479**	**$ 4,360**	**$ 85**	**$ 32,924**
Additions /Accretion	**11,818**	**2,674**	**2,176**	**16,668**
Maturities /Amortization	**(5,630)**	**(289)**	**(2,069)**	**(7,988)**
Terminations	**(1,328)**	**-**	**-**	**(1,328)**
December 31, 2019	**$ 33,339**	**$ 6,745**	**$ 192**	**$ 40,276**
December 31, 2017	$ 26,355	$ 5,123	$ 183	$ 31,661
Additions /Accretion	9,176	294	4,511	13,981
Maturities /Amortization	(6,507)	(457)	(4,609)	(11,573)
Terminations	(545)	(600)	-	(1,145)
December 31, 2018	$ 28,479	$ 4,360	$ 85	$ 32,924
December 31, 2016	$ 23,931	$ 3,100	$ 227	$ 27,258
Additions /Accretion	7,607	3,400	3,030	14,037
Maturities /Amortization	(4,594)	(777)	(3,074)	(8,445)
Terminations	(589)	(600)	-	(1,189)
December 31, 2017	$ 26,355	$ 5,123	$ 183	$ 31,661

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 and low interest rate hedging 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 floors to hedge cap and floor risk embedded within a portion of our floating-rate investment securities and loans. Interest rate caps and interest rate 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, 2019, we expect that $14.8 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 16 years.

Derivatives Not Designated As Hedges

Derivative agreements with our customers and the related offsetting derivative agreements with counterparties are not designated as hedging instruments and do not receive hedge accounting treatment. Accordingly, any changes in the fair value of these customer-related 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, 2019, 2018 and 2017, the notional amount of derivatives with our customers totaled $10.9 billion, $9.2 billion and $8.0 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, 2019, 2018 and 2017, the notional amount of our cleared derivatives was $15.7 billion, $12.7 billion and $10.4 billion, respectively. Initial margin and settlement payments totaling $62.5 million and $136.9 million, respectively, were held by our CCP for our cleared derivatives as of December 31, 2019, $46.5 million and $61.9 million, respectively, as of December 31, 2018 and $32.0 million and $104.6 million, respectively, as of December 31, 2017.

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, 2019, 2018 and 2017, the notional amount of derivatives with our non-customer counterparties, excluding cleared derivatives, totaled $13.7 billion, $11.0 billion and $13.3 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, 2019 we posted $115.5 million in cash as collateral with our non-customer counterparties.

The fair value of our derivatives to all of our dealer counterparties was a liability at December 31, 2019, and was offset by the collateral we posted to our dealer counterparties. At December 31, 2018 and 2017, the fair value of our derivatives to certain dealer counterparties was an asset and offset by collateral held by us. The remainder of the fair value of our derivatives to dealer counterparties was a liability at December 31, 2018 and 2017 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.

Hedge Terminations

We did not terminate any interest rate swaps or caps for asset-liability management purposes during 2019. During 2018 we terminated $600.0 million in notional value of interest rate caps which hedged debt funding certain investment securities sold earlier in 2018. These caps were previously accounted for as cash flow hedges. In 2017 we terminated approximately $918.2 million in notional value of interest rate swaps and caps for asset-liability management purposes. These swaps were previously accounted for as fair value hedges.

We terminated interest rate swaps with customers and offsetting dealer counterparties totaling notional value of $1,328.0 million, $545.1 million and $270.5 million in 2019, 2018 and 2017, respectively. Proceeds from the customer terminations were offset by payments for the offsetting dealer terminations.

A summary of the impact of derivative financial instruments on our consolidated balance sheets as of December 31, 2019, 2018 and 2017 is shown in the following tables.

Fair Value of Derivative Financial Instruments

As of December 31, 2019	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 218,800	$ 10,119
Foreign Exchange Contracts	96	1,893
Total Derivatives Designated as Hedging Instruments	$ 218,896	$ 12,012
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 298,707	$ 251,094
Foreign Exchange Contracts	28	28
Total Derivatives Not Designated as Hedging Instruments	$ 298,735	$ 251,122
Settlement Payments	$ (136,916)	$ -
Total Derivatives	$ 380,715	$ 263,134

[1] These assets make up the interest rate swaps and other financial instruments assets in the consolidated balance sheet as of December 31, 2019.

[2] These liabilities make up the interest rate swaps and other financial instruments liabilities in the consolidated balance sheet as of December 31, 2019.

Fair Value of Derivative Financial Instruments

As of December 31, 2018	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 77,238	$ 86,345
Foreign Exchange Contracts	589	297
Total Derivatives Designated as Hedging Instruments	$ 77,827	$ 86,642
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 178,036	$ 130,059
Foreign Exchange Contracts	63	63
Total Derivatives Not Designated as Hedging Instruments	$ 178,099	$ 130,122
Settlement Payments	$ -	$ (61,923)
Total Derivatives	$ 255,926	$ 154,841

[1] These assets make up the interest rate swaps and other financial instruments assets in the consolidated balance sheet as of December 31, 2018.

[2] These liabilities make up the interest rate swaps and other financial instruments liabilities in the consolidated balance sheet as of December 31, 2018.

Fair Value of Derivative Financial Instruments

As of December 31, 2017	Fair Value of Derivative Assets[1]	Fair Value of Derivative Liabilities[2]
Derivatives Designated as Hedging Instruments		
Interest Rate Contracts	$ 37,479	$ 88,382
Foreign Exchange Contracts	113	3,109
Total Derivatives Designated as Hedging Instruments	$ 37,592	$ 91,491
Derivatives Not Designated as Hedging Instruments		
Interest Rate Contracts	$ 142,801	$ 99,378
Foreign Exchange Contracts	452	427
Total Derivatives Not Designated as Hedging Instruments	$ 143,253	$ 99,805
Settlement Payments	$ -	$ (104,564)
Total Derivatives	$ 180,845	$ 86,732

[1] These assets make up the interest rate swaps and other financial instruments assets in the consolidated balance sheet as of December 31, 2017.

[2] These liabilities make up the interest rate swaps and other financial instruments liabilities in the consolidated balance sheet as of December 31, 2017.

A summary of the impact of derivative financial instruments on our consolidated statements of income and comprehensive income for the years ended December 31, 2019, 2018 and 2017 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	Total Interest Income	Interest Expense	Net Interest Income	Noninterest Income (Expense)
Year Ended December 31, 2019						
Total Amount of Line Items Presented in Consolidated Statement of Income	**$ 3,687,926**	**$ 780,172**	**$ 4,468,098**	**$ (3,069,539)**	**$ 1,398,559**	**$ 220,913**
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	**$ -**	**$ -**	**$ -**	**$ 221,042**	**$ 221,042**	**$ -**
Recognized on Hedged Items	**-**	**-**	**-**	**(219,338)**	**(219,338)**	**-**
Net Income (Expense) Recognized on Fair Value Hedges	**$ -**	**$ -**	**$ -**	**$ 1,704**	**$ 1,704**	**$ -**
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	**$ (410)**	**$ -**	**$ (410)**	**$ (12,041)**	**$ (12,451)**	**$ -**
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[(1)]	**(2,127)**	**-**	**(2,127)**	**-**	**(2,127)**	**-**
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	**1,563**	**-**	**1,563**	**-**	**1,563**	**-**
Net Income (Expense) Recognized on Cash Flow Hedges	**$ (974)**	**$ -**	**$ (974)**	**$ (12,041)**	**$ (13,015)**	**$ -**
Year Ended December 31, 2018						
Total Amount of Line Items Presented in Consolidated Statement of Income	$ 3,348,737	$ 682,396	$ 4,031,133	$ (2,599,837)	$ 1,431,296	$ 289,660
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	$ -	$ -	$ -	$ 36,848	$ 36,848	$ -
Recognized on Hedged Items	-	-	-	(36,284)	(36,284)	-
Net Income (Expense) Recognized on Fair Value Hedges	$ -	$ -	$ -	$ 564	$ 564	$ -
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	$ (161)	$ -	$ (161)	$ (8,320) [(2)]	$ (8,481)	$ (13,073) [(2)]
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[(3)]	3,388	-	3,388	-	3,388	-
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	2,159	-	2,159	-	2,159	-
Net Income (Expense) Recognized on Cash Flow Hedges	$ 5,386	$ -	$ 5,386	$ (8,320)	$ (2,934)	$ (13,073)

(1) Fully offset by a $2,127 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, 2019.

(2) $13,073 related to termination of interest rate contracts is located in Noninterest Expense - Other, Net and the remaining $8,320 related to continuing interest rate contracts is located in Interest Expense in the consolidated statement of income for the year ended December 31, 2018.

(3) Fully offset by a $3,388 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, 2018.

Effect of Fair Value and Cash Flow Hedge Accounting on the Consolidated Statement of Income

	Interest Income Loans	Interest Income Investments	Total Interest Income	Interest Expense	Net Interest Income	Noninterest Income (Expense)
Year Ended December 31, 2017						
Total Amount of Line Items Presented in Consolidated Statement of Income	$ 2,603,019	$ 538,121	$ 3,141,140	$ (1,748,315)	$ 1,392,825	$ 175,233
Gain (Loss) on Fair Value Hedge Relationships:						
Interest Rate Contracts:						
Recognized on Derivatives	$ -	$ -	$ -	$ (43,581)	$ (43,581)	$ -
Recognized on Hedged Items	-	-	-	44,558	44,558	-
Net Income (Expense) Recognized on Fair Value Hedges	$ -	$ -	$ -	$ 977	$ 977	$ -
Gain (Loss) on Cash Flow Hedge Relationships:						
Interest Rate Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)	$ -	$ -	$ -	$ (6,701)	$ (6,701)	$ -
Amount of Gain Recognized in Income	$ 11	$ -	$ 11	$ -	$ 11	$ -
Foreign Exchange Contracts:						
Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (Loss)[(1)]	(6,157)	-	(6,157)	-	(6,157)	-
Amount Excluded from Effectiveness Testing Recognized in Earnings Based on an Amortization Approach	843	-	843	-	843	-
Net Income (Expense) Recognized on Cash Flow Hedges	$ (5,303)	$ -	$ (5,303)	$ (6,701)	$ (12,004)	$ -

(1) Fully offset by a $6,157 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, 2017.

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,	**2019**	**2018**	**2017**
Interest Rate Contracts	**$ (50,270)**	$ 4,140	$ (19,503)
Foreign Exchange Contracts	**(2,089)**	3,289	(5,936)
Total	**$ (52,359)**	$ 7,429	$ (25,439)

Effect of Derivative Financial Instruments not Designated as Hedging Relationships on the Consolidated Statements of Income[(1)]

	Net Amount of Gain or (Loss) Recognized in Income On Derivatives[(2)]		
Year Ended December 31,	**2019**	**2018**	**2017**
Interest Rate Contracts	**$ (365)**	$ 4,553	$ (3,929)
Foreign Exchange Contracts	**-**	(25)	354
Total	**$ (365)**	$ 4,528	$ (3,575)

(1) Primarily represents our derivative agreements with customers and related offsetting derivative agreements with counterparties.

(2) Located in other noninterest income/expense in the consolidated statements of income for the years ended December 31, 2019, 2018 and 2017.

A summary of the cumulative basis adjustment for fair value hedging relationships included in the carrying amount of hedged liabilities as of December 31, 2019, 2018 and 2017 is shown in the following table.

Derivative Financial Instruments 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**
2019			
Bonds and Notes	**$ 15,627,566**	**$ (167,301)**	**$ 231**
2018			
Bonds and Notes	$ 10,535,485	$ (52,037)	$ 425
2017			
Bonds and Notes	$ 10,854,451	$ 88,322	$ 1,066

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 Financial and Derivative Instruments

	Gross Amounts of Assets/Liabilities Presented in the Consolidated Balance Sheets	Amounts Not Offset In the Consolidated Balance Sheets		Net Amount
		Cash Collateral Received/ Pledged[1]	Investment Securities Received/Pledged as Collateral	
As of December 31, 2019				
Assets:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	$ 53,526	$ -	$ -	$ 53,526
Customer	259,908	-	-	259,908
Clearinghouse	67,281	-	-	67,281
Accrued Interest Receivable on Derivative Contracts	15,190	-	-	15,190
Liabilities:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	161,906	(115,490)	-	46,416
Customer	29,407	-	-	29,407
Clearinghouse	71,821	-	(62,532)	9,289
Accrued Interest Payable on Derivative Contracts	8,009	-	-	8,009

[1] Cash collateral received is recognized in the consolidated balance sheets whereas investment securities received are not recognized in the consolidated balance sheets.

Offsetting of Financial and Derivative Instruments

	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, 2018				
Assets:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	$ 118,503	$ (99,220)	$ -	$ 19,283
Customer	81,718	-	-	81,718
Clearinghouse	55,705	-	-	55,705
Accrued Interest Receivable on Derivative Contracts	7,479	-	-	7,479
Liabilities:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	39,218	(2,450)	-	36,768
Customer	70,068	-	-	70,068
Clearinghouse	45,555	-	(46,528)	- [2]
Accrued Interest Payable on Derivative Contracts	14,888	-	-	14,888
As of December 31, 2017				
Assets:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	$ 84,969	$ (50,910)	$ -	$ 34,059
Customer	83,351	-	-	83,351
Clearinghouse	12,525	-	-	12,525
Accrued Interest Receivable on Derivative Contracts	8,616	-	-	8,616
Liabilities:				
Interest Rate Swaps and Other Financial Instruments:				
Dealer	37,784	(3,050)	-	34,734
Customer	41,189	-	-	41,189
Clearinghouse	7,759	-	(31,999)	- [2]
Accrued Interest Payable on Derivative Contracts	7,415	-	-	7,415

[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 and investment securities pledged as collateral fully offset the related gross liability on the consolidated balance sheet.

Note 12 – 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, 2019 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, 2019 include our derivative contracts, collateral balances related to derivative contracts, certificates of deposit, 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 derivative financial instruments 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 (primarily the Overnight Index Swap rate for collateralized derivative contracts and the USD LIBOR/swap curve for non-collateralized 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 (excluding certificates of deposit)	Third-Party Pricing Service	Prepayment Rate Lifetime Default Rate Loss Severity Benchmark Yield Curve Quoted Prices
Interest Rate Swaps and Other Financial Instruments	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, 2019 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, 2019 also include $117.4 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 117 and 118 because they are not measured on a recurring basis.

Our Level 3 liabilities at December 31, 2019 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 2019, 2018 and 2017.

The following table presents quantitative information about Level 3 fair value measurements as of December 31, 2019.

Quantitative Information About Valuation Techniques and Unobservable Inputs to Level 3 Fair Value Measurements

($ in Millions)	Fair Value	Valuation Technique	Unobservable Inputs	Range
Assets				
Investment Securities:				
U.S. Agency MBS	$ 99	Third-Party Pricing Service	Prepayment Rate	*
			Lifetime Default Rate	*
			Loss Severity	*
Other (included in Asset-Backed)	14	Discounted Cash Flow	Prepayment Rate	0 percent
Impaired Loans	117	Appraisal / Discounted Cash Flow	Income/Expense Data	**
			Comparable Sales	**
			Replacement Cost	**
Liabilities				
Standby Letters of Credit	$ 11	Discounted Cash Flow	Mark-to-Market Spread	0.1-1.5 percent

* 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, 2019, 2018 and 2017 for each of the fair value hierarchy levels.

Assets and Liabilities Measured at Fair Value on a Recurring Basis
December 31, 2019

($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and				
Other Overnight Funds	$ -	$ 1,810	$ -	$ 1,810
Investment Securities:				
Certificates of Deposit	-	400	-	400
U.S. Treasury Debt	-	16,062	-	16,062
U.S. Agency Debt	-	2,854	-	2,854
Residential MBS:				
Ginnie Mae	-	2,337	-	2,337
U.S. Agency	-	4,286	99	4,385
Commercial MBS:				
U.S. Agency	-	4,946	-	4,946
Corporate Bonds	-	373	-	373
Asset-Backed and Other	-	1,055	14	1,069
Interest Rate Swaps and				
Other Financial Instruments	-	381	-	381
Assets Held in Trust				
(included in Other Assets)	97	-	-	97
Collateral Assets (included				
in Other Assets)	-	115	-	115
Total Assets	$ 97	$ 34,619	$ 113	$ 34,829
Liabilities				
Interest Rate Swaps and				
Other Financial Instruments	$ -	$ 263	$ -	$ 263
Collateral Liabilities				
(included in Bonds and Notes)	-	-	-	-
Standby Letters of Credit				
(included in Other Liabilities)	-	-	11	11
Total Liabilities	$ -	$ 263	$ 11	$ 274

Assets and Liabilities Measured at Fair Value on a Recurring Basis
December 31, 2018

($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and				
Other Overnight Funds	$ -	$ 1,300	$ -	$ 1,300
Investment Securities:				
Certificates of Deposit	-	975	-	975
U.S. Treasury Debt	-	15,268	-	15,268
U.S. Agency Debt	-	2,239	-	2,239
Residential MBS:				
Ginnie Mae	-	2,940	-	2,940
U.S. Agency	-	5,415	113	5,528
Non-Agency	-	13	-	13
Commercial MBS:				
U.S. Agency	-	2,867	-	2,867
Corporate Bonds	-	119	-	119
Asset-Backed and Other	-	1,331	12	1,343
Interest Rate Swaps and				
Other Financial Instruments	-	256	-	256
Assets Held in Trust				
(included in Other Assets)	81	-	-	81
Collateral Assets (included				
in Other Assets)	-	2	-	2
Total Assets	$ 81	$ 32,725	$ 125	$ 32,931
Liabilities				
Interest Rate Swaps and				
Other Financial Instruments	$ -	$ 155	$ -	$ 155
Collateral Liabilities				
(included in Bonds and Notes)	-	99	-	99
Standby Letters of Credit				
(included in Other Liabilities)	-	-	10	10
Total Liabilities	$ -	$ 254	$ 10	$ 264

Assets and Liabilities Measured at Fair Value on a Recurring Basis

December 31, 2017

($ in Millions)	Level 1	Level 2	Level 3	Total
Assets				
Federal Funds Sold and Other Overnight Funds	$ -	$ 1,035	$ -	$ 1,035
Investment Securities:				
Certificates of Deposit	-	775	-	775
U.S. Treasury Debt	-	11,029	-	11,029
U.S. Agency Debt	-	3,356	-	3,356
Residential MBS:				
Ginnie Mae	-	1,856	-	1,856
U.S. Agency	-	6,593	125	6,718
FHA/VA Non-Wrapped Reperformer	-	-	257	257
Non-Agency	-	29	-	29
Commercial MBS:				
U.S. Agency	-	2,499	-	2,499
Agricultural MBS:				
Farmer Mac	-	-	78	78
Corporate Bonds	-	40	-	40
Asset-Backed and Other	-	194	39	233
Interest Rate Swaps and Other Financial Instruments	-	181	-	181
Assets Held in Trust (included in Other Assets)	81	-	-	81
Collateral Assets (included in Other Assets)	-	3	-	3
Total Assets	$ 81	$ 27,590	$ 499	$ 28,170
Liabilities				
Interest Rate Swaps and Other Financial Instruments	$ -	$ 87	$ -	$ 87
Collateral Liabilities (included in Bonds and Notes)	-	51	-	51
Standby Letters of Credit (included in Other Liabilities)	-	-	10	10
Total Liabilities	$ -	$ 138	$ 10	$ 148

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	Farmer Mac Agricultural MBS	FHA/VA Non-Wrapped Reperformer Residential MBS	Asset-Backed Securities and Other	Standby Letters of Credit
Balance at December 31, 2018	**$ 113**	**$ -**	**$ -**	**$ 12**	**$ 10**
Total Gains or Losses (Realized/Unrealized):					
Included in Other Comprehensive Income	**1**	**-**	**-**	**1**	**-**
Purchases	**-**	**-**	**-**	**7**	**-**
Sales	**-**	**-**	**-**	**(5)**	**-**
Issuances	**-**	**-**	**-**	**-**	**13**
Settlements	**(17)**	**-**	**-**	**(1)**	**(12)**
Accretion	**2**	**-**	**-**	**-**	**-**
Balance at December 31, 2019	**$ 99**	**$ -**	**$ -**	**$ 14**	**$ 11**
Balance at December 31, 2017	$ 125	$ 78	$ 257	$ 39	$ 10
Total Gains or Losses (Realized/Unrealized):					
Included in Other Noninterest Income	-	-	38	8	-
Included in Other Comprehensive Income	3	2	(22)	(8)	-
Sales	-	(61)	(262)	(19)	-
Issuances	-	-	-	2	8
Settlements	(17)	(19)	(13)	(11)	(8)
Accretion	2	-	2	1	-
Balance at December 31, 2018	$ 113	$ -	$ -	$ 12	$ 10
Balance at December 31, 2016	$ 147	$ 97	$ 275	$ 39	$ 10
Total Gains or Losses (Realized/Unrealized):					
Included in Other Comprehensive Income	(1)	-	15	(1)	-
Purchases	-	-	-	2	-
Issuances	-	-	-	3	7
Settlements	(23)	(19)	(41)	(7)	(7)
Accretion	2	-	8	3	-
Balance at December 31, 2017	$ 125	$ 78	$ 257	$ 39	$ 10

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, 2019, 2018 and 2017.

($ in Millions)

	December 31, 2019			December 31, 2018			December 31, 2017		
	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	**$ 108,199**	**$ 110,180**	**Level 3**	$ 103,872	$ 103,906	Level 3	$ 98,689	$ 99,742	Level 3
Financial Liabilities:									
Bonds and Notes	**$ 132,230**	**$ 133,924**	**Level 3**	$ 127,632 (1)	$ 127,355 (1)	Level 3	$ 118,406 (2)	$ 118,859 (2)	Level 3
Off-Balance Sheet Financial Instruments:									
Commitments to Extend Credit	**$ -**	**$ (95)**	**Level 3**	$ -	$ (89)	Level 3	$ -	$ (92)	Level 3

(1) Includes $99 million in Level 2 collateral liabilities carried at fair value as of December 31, 2018.

(2) Includes $51 million in Level 2 collateral liabilities carried at fair value as of December 31, 2017.

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 13 – 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, 2019. 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 1 year to 11 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, 2019		
Right-of-Use Assets	$	75,666
Lease Liabilities		78,707
Year Ended December 31, 2019		
Operating Lease Cost	$	14,263
Weighted Average Remaining Lease Term		11 years
Weighted Average Discount Rate		3.02%

Future minimum lease payments under non-cancellable operating leases as of December 31, 2019 were as follows:

Future Minimum Operating Lease Payments		
Year Ending December 31,		
2020	$	9,530
2021		8,900
2022		8,825
2023		8,629
2024		8,329
Thereafter		47,832
Total Future Minimum Lease Payments	$	92,045
Less Imputed Interest		13,338
Lease Liabilities Reported as of December 31, 2019	$	78,707

In 2016, the Bank completed a sale-leaseback transaction associated with our corporate headquarters in Greenwood Village, Colorado. Upon completion of this sale-leaseback transaction, the resulting gain was deferred to be recognized ratably over the expected lease term of 15 years as an offset to occupancy and equipment expense in our consolidated statements of income. In connection with the Bank's adoption of the new lease accounting standard on January 1, 2019, the remaining deferred gain of $8.6 million related to the sale-leaseback transaction was recognized in retained earnings through a cumulative effect adjustment, as described in Note 2.

Note 14 – 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 $10.0 billion at December 31, 2019. During 2019, $35.1 billion of advances on loans were made and repayments totaled $34.4 billion. None of these loans outstanding at December 31, 2019 were delinquent, in nonaccrual or accruing restructured status or, in the opinion of management, involved more than a normal risk of collectability.

Note 15 – Segment Financial Information

We conduct our lending operations through three operating segments: Agribusiness, Farm Credit Banking and Rural Infrastructure.

The accompanying table presents 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 insignificant.

We do not hold significant assets in any foreign country. Substantially all of our agricultural export finance loans are U.S. dollar-denominated and 20 percent of these loans are guaranteed by the U.S. government. For the three years ended December 31, 2019, 2018 and 2017, 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
2019 Results of Operations ($ in Thousands):				
Net Interest Income	**$ 726,147**	**$ 259,140**	**$ 413,272**	**$ 1,398,559**
Provision for Loan Losses	**53,000**	**-**	**4,000**	**57,000**
Noninterest Income	**132,644**	**6,382**	**81,887**	**220,913**
Operating Expenses	**239,990**	**42,961**	**120,551**	**403,502**
Provision for Income Taxes	**35,582**	**-**	**32,160**	**67,742**
Net Income	**$ 530,219**	**$ 222,561**	**$ 338,448**	**$ 1,091,228**
Selected Financial Information at December 31, 2019 ($ in Millions):				
Loans	**$ 33,168**	**$ 54,459**	**$ 21,227**	**$ 108,854**
Less: Allowance for Loan Losses	**(472)**	**-**	**(183)**	**(655)**
Net Loans	**$ 32,696**	**$ 54,459**	**$ 21,044**	**$ 108,199**
Accrued Interest Receivable and Other Assets	**251**	**191**	**461**	**903**
Total Segment Assets	**$ 32,947**	**$ 54,650**	**$ 21,505**	**$ 109,102**
Federal Funds Sold and Other Overnight Funds				**1,810**
Investment Securities				**32,426**
Other Assets				**1,666**
Total Assets	**$ 32,947**	**$ 54,650**	**$ 21,505**	**$ 145,004**
2018 Results of Operations ($ in Thousands):				
Net Interest Income[(1)]	$ 731,695	$ 274,953	$ 424,648	$ 1,431,296
Provision for Loan Losses	54,000	-	12,000	66,000
Noninterest Income[(1)]	156,391	34,382	98,887	289,660
Operating Expenses[(1)]	215,940	40,378	107,489	363,807
Provision for Income Taxes[(1)]	43,583	-	56,791	100,374
Net Income	$ 574,563	$ 268,957	$ 347,255	$ 1,190,775
Selected Financial Information at December 31, 2018 ($ in Millions):				
Loans	$ 32,432	$ 50,695	$ 21,367	$ 104,494
Less: Allowance for Loan Losses	(439)	-	(183)	(622)
Net Loans	$ 31,993	$ 50,695	$ 21,184	$ 103,872
Accrued Interest Receivable and Other Assets	284	187	208	679
Total Segment Assets	$ 32,277	$ 50,882	$ 21,392	$ 104,551
Federal Funds Sold and Other Overnight Funds				1,300
Investment Securities				31,292
Other Assets				1,873
Total Assets	$ 32,277	$ 50,882	$ 21,392	$ 139,016

(1) Previous to 2019, certain corporate and other information to reconcile total reportable segments with total consolidated results were separately disclosed as "Corporate/Other". Such amounts are now allocated to operating segments, and prior-year amounts have been reclassified to conform to the current presentation.

Segment Financial Information	Agribusiness	Farm Credit Banking	Rural Infrastructure	Total CoBank
2017 Results of Operations ($ in Thousands):				
Net Interest Income[(1)]	$ 672,914	$ 295,674	$ 424,237	$ 1,392,825
Provision for Loan Losses (Loan Loss Reversal)	43,650	-	(1,650)	42,000
Noninterest Income (Expense)[(1)]	106,551	8,361	60,321	175,233
Operating Expenses[(1)]	223,892	42,307	119,474	385,673
(Income Tax Benefit) Provision for Income Taxes[(1)]	(113,681) [(2)]	-	128,745 [(2)]	15,064
Net Income	$ 625,604	$ 261,728	$ 237,989	$ 1,125,321
Selected Financial Information at December 31, 2017 ($ in Millions):				
Loans	$ 30,304	$ 47,948	$ 21,014	$ 99,266
Less: Allowance for Loan Losses	(411)	-	(166)	(577)
Net Loans	$ 29,893	$ 47,948	$ 20,848	$ 98,689
Accrued Interest Receivable and Other Assets	300	173	206	679
Total Segment Assets	$ 30,193	$ 48,121	$ 21,054	$ 99,368
Federal Funds Sold and Other Overnight Funds				1,035
Investment Securities				26,870
Other Assets				1,938
Total Assets	$ 30,193	$ 48,121	$ 21,054	$ 129,211

(1) Previous to 2019, certain corporate and other information to reconcile total reportable segments with total consolidated results were separately disclosed as "Corporate/Other". Such amounts are now allocated to operating segments, and prior-year amounts have been reclassified to conform to the current presentation.

(2) The 2017 (income tax benefit) provision for income taxes included the impact resulting from the enactment of federal tax legislation in late 2017, as more fully explained in Note 9.

Note 16 – 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 $293.5 billion at December 31, 2019.

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, 2019, the aggregated assets of the Insurance Fund totaled $5.2 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.

In June 2016, a lawsuit was commenced by the filing of a complaint in the United States District Court Southern District of New York against CoBank by a number of investors (the "Plaintiffs") who had held CoBank's 7.875 percent Subordinated Notes due in 2018 (the "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 have 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. The Plaintiffs have requested damages in an amount to be determined at trial, reasonable attorneys' fees and any other such relief as the court may deem just and proper. CoBank filed its answer in September 2016 and discovery concluded in January 2018. CoBank and Plaintiffs filed their respective motions for summary judgment in March 2018. There is presently no indication of when the court will rule on the motions for summary judgment. CoBank intends to vigorously defend against these allegations. The likelihood of any outcome of this proceeding cannot be determined at this time.

While the outcome of legal 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 our legal 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 10.

Note 17 – Quarterly Financial Information

Unaudited quarterly results of operations for the years ended December 31, 2019, 2018 and 2017, are shown in the table below.

Quarterly Financial Information (Unaudited)										
2019		**First**		**Second**		**Third**		**Fourth**		**Total**
Net Interest Income	**$**	**359,675**	**$**	**349,736**	**$**	**336,827**	**$**	**352,321**	**$**	**1,398,559**
Provision for Loan Losses (Loan Loss Reversal)		**28,000**		**(7,000)**		**5,000**		**31,000**		**57,000**
Noninterest Income and Expenses, Net		**28,711**		**42,512**		**50,984**		**60,382**		**182,589**
Provision for Income Taxes (Income Tax Benefit)		**30,471**		**34,348**		**32,307**		**(29,384)**		**67,742**
Net Income	**$**	**272,493**	**$**	**279,876**	**$**	**248,536**	**$**	**290,323**	**$**	**1,091,228**
2018		**First**		**Second**		**Third**		**Fourth**		**Total**
Net Interest Income	$	371,041	$	372,550	$	341,092	$	346,613	$	1,431,296
Provision for Loan Losses (Loan Loss Reversal)		50,000		(10,000)		3,000		23,000		66,000
Noninterest Income and Expenses, Net		3,206		(6,031)		30,279		46,693		74,147
Provision for Income Taxes		33,423		27,165		16,511		23,275		100,374
Net Income	$	284,412	$	361,416	$	291,302	$	253,645	$	1,190,775
2017		**First**		**Second**		**Third**		**Fourth**		**Total**
Net Interest Income	$	356,114	$	347,218	$	338,494	$	350,999	$	1,392,825
Provision for Loan Losses		15,000		-		23,000		4,000		42,000
Noninterest Income and Expenses, Net		37,685		44,656		74,876		53,223		210,440
Provision for Income Taxes (Income Tax Benefit)		40,621		42,805		28,983		(97,345)		15,064
Net Income	$	262,808	$	259,757	$	211,635	$	391,121	$	1,125,321

Note 18 – Subsequent Events

We have evaluated subsequent events through February 28, 2020, which is the date the financial statements were issued.

Note 19 – 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 December 31, 2019, we have 21 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 $49.6 billion at December 31, 2019. During 2019, $153.6 billion of advances on wholesale loans were made to our affiliated Associations and repayments totaled $149.8 billion.

Our bylaws permit our Board of Directors to set the required level of Association investment in the Bank within a range of 4 to 6 percent of the one-year historical average of Association borrowings. In 2019, the required investment level was 4 percent. 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. Such information is not incorporated by reference into, and should not be viewed as part of, this Annual Report to Shareholders.

Effective January 1, 2017, two of our affiliated Associations, Farm Credit of Southwest Kansas, ACA, and American AgCredit, ACA, merged and are doing business as American AgCredit, ACA.

Effective October 1, 2017, one of our affiliated Associations, Farm Credit of Ness City, FLCA (Ness City), merged into another of our affiliated Associations, High Plains Farm Credit, ACA (High Plains). During 2017, the two entities operated under a joint management agreement pursuant to which the CEO, Chief Financial Officer and Chief Credit Officer of High Plains jointly served in these positions for Ness City.

Effective July 1, 2019, the net assets of Farm Credit Services of Hawaii, ACA were sold to American AgCredit, ACA pursuant to an Agreement and Plan of Combination.

Report of Management
CoBank, ACB

February 28, 2020

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 2019, 2018 and 2017 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, 2019, 2018 and 2017. 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. The FCA has authorized CoBank to replace the regulatory required inclusion of condensed, unaudited district-wide statements of condition and statements of income in the footnotes to the consolidated financial statements with a separate document containing the same district-wide financial information.

Kevin Riel	Tom Halverson	David P. Burlage
Kevin G. Riel	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 2019 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, 2019.

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, 2019 has been audited by PricewaterhouseCoopers LLP, independent auditors, as stated in their report appearing on pages 70 and 71, which expresses an unqualified opinion on the effectiveness of the Bank’s internal control over financial reporting as of December 31, 2019. 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 2019) 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, 2019, 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 19
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 31 to 69 Pages 78 to 125
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 Ames, IA; 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; Celina, OH; Enfield, CT; Louisville, KY; Lubbock, TX; New Smyrna Beach, FL; 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 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 16
Description of Capital Structure	Notes to Financial Statements....................	Note 7
Description of Liabilities		
Debt Outstanding	Notes to Financial Statements....................	Notes 5 and 6
Contingent Liabilities	Notes to Financial Statements....................	Note 16
Selected Financial Data for the Five Years Ended December 31, 2019	Five-Year Summary of Selected Consolidated Financial Data.........	Page 33
Management's Discussion and Analysis of Financial Condition and Results of Operations	Management's Discussion and Analysis.....	Pages 31 to 69
Directors and Senior Officers		
Directors' Information	Board of Directors Disclosure....................	Pages 141 to 153
Senior Officers' Information	Senior Officers...	Pages 154 to 168
Transactions with Directors and Senior Officers	Notes to Financial Statements....................	Note 14

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 72 to 125
Report of Management	Report of Management	Page 126
Report of Independent Auditors	Report of Independent Auditors.................	Pages 70 to 71
Aggregate Fees Incurred for Services Rendered by Independent Auditors	Board of Directors Disclosure....................	Page 143
Credit and Services to Young, Beginning, and Small Farmers and Ranchers and Producers or Harvesters of Aquatic Products	Young, Beginning, and Small Farmers	Page 171
Unincorporated Business Entities	Unincorporated Business Entities	Page 172
Regulatory Capital Disclosures	Regulatory Capital Disclosures..................	Pages 131 to 140
FCL Titling Trust Assets	FCL Titling Trust Assets	Page 173

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Overview

As described in “Capital Regulations” beginning on page 62 of this annual report, the Farm Credit Administration (FCA) adopted final rules (the Capital Regulations) 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	2019 Annual Report Reference
Scope of Application	Corporate entity and consolidated subsidiaries	Page 131
	Description of entity consolidation	Page 131
	Restrictions on transfers of funds or capital	Page 131
Capital Structure	Terms and conditions of capital instruments	Note 7 - Pages 96 to 98; Page 132
	Regulatory capital components	Page 132
Capital Adequacy	Capital adequacy assessment	Page 63
	Risk-weighted assets	Page 133
	Regulatory capital ratios	Page 63; Note 7 - Page 98
Capital Buffers	Quantitative disclosures	Pages 62 to 63, 133
Credit Risk	Credit risk management and policies	Pages 43 to 46
	Summary of exposures	Page 134
	Geographic distribution	Pages 135 to 136
	Industry distribution	Page 136
	Contractual maturity	Page 137
	Impaired loans and allowance for credit losses	Note 1 - Pages 78 to 80; Note 3 - Pages 83 to 90
Counterparty Credit Risk-Related Exposures	General description	Pages 47 to 48, 137
	Counterparty exposures	Note 11 - Pages 107 to 114; Page 137
Credit Risk Mitigation	General description	Pages 133, 138
	Exposures with reduced capital requirements	Note 11 - Pages 107 to 114; Pages 40, 46, 47 to 48, 133, 138
Securitization	General description	Pages 47, 139 to 140
	Securitization exposures	Pages 60 to 62, Note 4 - Pages 90 to 93; Note 12 - Pages 115 to 120; Pages 139 to 140
Equities	General description	Pages 133, 140
Interest Rate Risk for Non-Trading Activities	General description	Pages 48 to 52, 140
	Interest rate sensitivity	Page 52

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. FCL is required to comply with the capital regulations on a standalone basis, but it is not required to make the disclosures contained herein for CoBank as a whole. FCL’s capital ratios exceeded the minimum regulatory requirements at December 31, 2019.

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 7 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, 2019		Average Balance
Common Equity Tier 1 Capital (CET1)		
Common Cooperative Equities:		
Statutory Minimum Purchased Borrower Stock	$	2,475
Other Required Member Purchased Stock		815,178
Allocated Equities:		
Qualified Allocated Equities Subject to Retirement		2,584,606
Nonqualified Allocated Equities Subject to Retirement		-
Nonqualified Allocated Equities Not Subject to Retirement		2,917,091
Unallocated Retained Earnings		2,732,313
Paid-In Capital		-
Regulatory Adjustments and Deductions Made to CET1		(76,288)
Total CET1	$	8,975,375
Tier 1 Capital		
Non-Cumulative Perpetual Preferred Stock	$	1,500,000
Regulatory Adjustments and Deductions Made to Tier 1 Capital		-
Total Additional Tier 1 Capital		1,500,000
Total Tier 1 Capital	$	10,475,375
Tier 2 Capital		
Common Cooperative Equities Not Included in CET1	$	-
Tier 2 Capital Elements:		
Allowance for Credit Losses		732,274
Regulatory Adjustments and Deductions Made to Tier 2 Capital		-
Total Tier 2 Capital	$	732,274
Total Capital	$	11,207,649

A reconciliation of total shareholders' equity in our consolidated balance sheet to total regulatory capital is presented below.

Reconciliation to the December 31, 2019 Consolidated Balance Sheet		End of Period
Total Shareholders' Equity	$	10,566,893
Adjustments to Regulatory Capital:		
Accumulated Other Comprehensive Income		(94,425)
Regulatory Adjustments and Deductions Made to CET 1		(76,288)
Tier 2 Allowance and Reserve		747,066
Total Capital	$	11,143,246 [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, 2019.

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 63.

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, 2019		Average Balance
On-Balance Sheet Assets:		
Exposures to Sovereign Entities	$	-
Exposures to Supranational Entities and Multilateral Development Banks		152,622
Exposures to Government-Sponsored Enterprises		12,760,299 [1]
Exposures to Depository Institutions, Foreign Banks, and Credit Unions		3,829,683 [2]
Exposures to Public Sector Entities		59,211
Corporate Exposures, including Borrower Loans and Leases		41,284,446
Residential Mortgage Exposures		-
Past Due and Nonaccrual Exposures		434,769
Securitization Exposures		1,106,517
Equity Investment Exposures		34,168
Other Assets		932,293
Off-Balance Sheet:		
Unfunded Loan Commitments		8,546,066
Equity Investment Commitments		13,165
Over-the-Counter Derivatives		417,100
Cleared Derivative Transactions		1,272
Letters of Credit		1,086,014
Reverse Repurchase Transactions		166
Unsettled Transactions		-
Total Risk-Weighted Assets Before Additions (Deductions)	$	70,657,791
Additions:		
Intra-System Equity Investments	$	76,288
Deductions:		
Regulatory Adjustments and Deductions Made to CET1		(76,288)
Regulatory Adjustments and Deductions Made to Additional Tier 1 Capital		-
Regulatory Adjustments and Deductions Made to Tier 2 Capital		-
Total Risk-Weighted Assets	$	70,657,791 [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, 2019 was $70.0 billion.

As shown on page 63 of this annual report, the Bank exceeded all capital requirements as of December 31, 2019 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 $566.0 million as of December 31, 2019.

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 43 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 reverse repurchase transactions. 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, 2019	Average Balance	End of Period
Loans Outstanding	$ 105,134,848	$ 108,854,253
Unfunded Loan Commitments	32,002,115	30,394,360
Investment Securities	31,578,605	32,425,944
Letters of Credit	1,319,344	1,295,418
Equity Investment Commitments	26,330	38,959
Reverse Repurchase Transactions	828	-

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, 2019	Average Balance		End of Period	
	Notional Amount	Gross Positive Fair Value	Notional Amount	Gross Positive Fair Value
Over-the-Counter Derivatives:				
Interest Rate Contracts	$ 23,153,378	$ 351,290	$ 24,414,484	$ 313,310
Foreign Exchange Contracts	119,516	130	191,732	124
Total Over-the-Counter Derivatives	$ 23,272,894	$ 351,420	$ 24,606,216	$ 313,434
Cleared Derivatives:				
Interest Rate Contracts	15,306,035	87,746	15,669,714	67,281
Total Derivatives	$ 38,578,929	$ 439,166	$ 40,275,930	$ 380,715

The following table illustrates the geographic distribution of our total loan commitments as of December 31, 2019.

Total Lending Portfolio - Geographic Distribution

As of December 31, 2019	Wholesale Loans[1]	Commercial Loans
California	43 %	7 %
Washington	18	1
Texas	5 [2]	6
Connecticut	11	1
Kansas	5	4
Illinois	-	7
Minnesota	-	5
Iowa	-	5
Colorado	3	3
Oklahoma	4	2
Ohio	-	3
Asia	-	4
Florida	-	3
Nebraska	-	3
Latin America	-	3
Missouri	-	3
Pennsylvania	2 [2]	1
Georgia	-	3
New York	-	3
Indiana	-	3
New Mexico	3	-
North Dakota	-	2
Wisconsin	-	2
Mississippi	1 [2]	2
North Carolina	-	2
Arkansas	-	2
Virginia	-	2
South Dakota	-	2
Utah	2	-
Tennessee	-	2
Massachusetts	-	1
Arizona	-	1
Eur/ME/Afr	-	1
Michigan	-	1
Louisiana	-	1
New Jersey		1
Other	3 [2]	8
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.

(Unaudited) ($ in Thousands, Except as Noted)

The following table illustrates the geographic distribution of our impaired loans as of December 31, 2019.

Impaired Loans - Geographic Distribution

As of December 31, 2019	Share[(1)]
Colorado	27 %
California	10
Arkansas	10
Wyoming	7
Michigan	6
Oklahoma	5
Oregon	5
Illinois	5
Washington	4
Wisconsin	4
Iowa	3
Ohio	3
New Jersey	2
Arizona	2
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, 2019.

Total Lending Portfolio - Distribution by Primary Business/Commodity

As of December 31, 2019	Share
Affiliated Associations	40 %
Farm Supply and Grain Marketing	13
Electric Distribution	8
Nonaffiliated Entities	4
Agricultural Export Finance	4
Generation and Transmission	4
Fruits, Nuts and Vegetables	3
Regulated Utility	3
Lease Financing (through FCL)	3
Fish, Livestock and Poultry	3
Forest Products	2
Dairy	2
Independent Power Producers	2
Water and Wastewater	2
Local Exchange Carriers	1
Competitive Local Telephone Exchange Carriers	1
Sugar and Related Products	1
Wireless	1
Cable	1
Other	2
Total	100 %

The following table presents a summary of the remaining contractual maturity of our loans, unfunded loan commitments, investment securities, letters of credit, and derivatives at December 31, 2019.

($ in Millions)

Contractual Maturity

As of December 31, 2019	In One Year or Less	One to Five Years	After Five Years	Total
Loans Outstanding	$ 68,896	$ 16,660	$ 23,298	$ 108,854
Unfunded Loan Commitments	15,784	7,085	7,525	30,394
Investment Securities	6,367	11,702	14,357	32,426
Letters of Credit	212	823	260	1,295
Derivatives (Notional Amounts)	6,084	20,896	13,296	40,276
Equity Investment Commitments	6	23	10	39

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 11 to the consolidated financial statements in this annual report for information related to derivative financial instruments 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 on page 38 of this annual report for additional discussion related to our AEFD.

As discussed on pages 45 and 46 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.

Investments

As described in "Credit Risk Related to Investments and Derivatives" beginning on page 47 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 6 percent of our investment securities that are not guaranteed by the U.S. government or a U.S. Agency, which include certificates of deposit, corporate bonds and asset-backed securities (ABS). Excluding certificates of deposit with commercial banks carrying the highest short-term credit rating, these securities collectively total $1.4 billion of our total investment portfolio as of December 31, 2019. Credit risk in our investment portfolio also arises from counterparties to short-term investments, which include our overnight bank deposits and federal funds sold. With the exception of corporate bonds, which are risk-weighted based on the corporate counterparty, these 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, 2019		Average Exposure Amount		Risk Weighted Exposures
Guaranteed Loans under the GSM program	$	1,257,643	$	-
Loans to Farm Credit System entities		53,013,611		10,602,722
Investment Securities Issued or Guaranteed by U.S. Government		19,152,627		-
Investment Securities Issued or Guaranteed by a U.S. Agency		10,787,882		2,157,577
Total	$	84,211,763	$	12,760,299

Derivatives

As described in Note 11 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, 2019, we posted financial collateral with dealers totaling $115.5 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 $417.1 million and $1.3 million, respectively, for the three-month period ended December 31, 2019.

(Unaudited) ($ in Thousands, Except as Noted)

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, 2019, 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 unguaranteed securities was $1.0 billion for the three-month period ended December 31, 2019.

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, 2019 by exposure type and categorized by risk-weight band.

Securitization Exposures

Three Months Ended December 31, 2019	Average Exposure Amount	Risk Weighted Asset (Under Gross Up Approach)
Asset-Backed Securities	$ 1,049,716	$ 1,106,517
Total	$ 1,049,716	$ 1,106,517

Securitization Risk-Weight Bands

Three Months Ended December 31, 2019	Average Exposure Amount	Risk Weighted Asset (Under Gross Up Approach)
Gross-Up Risk-Weight Bands:		
100% - 125%	$ 987,650	$ 1,004,471
>125% and <1,250%	62,066	102,046
1,250%	-	-
Total	$ 1,049,716	$ 1,106,517

For the three-month period ended December 31, 2019, we did not hold any off-balance sheet securitization exposures nor were any securitization exposures deducted from capital.

Regulatory Capital Disclosures

CoBank, ACB

(Unaudited) ($ in Thousands, Except as Noted)

Refer to "Liquidity and Capital Resources" beginning on page 60 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 12 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 prosperity 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. There have been no sales or liquidations of these investments during the three months ended December 31, 2019.

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 48 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 52 of this annual report.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Directors

At year-end 2019, CoBank had a total of 19 seated directors, comprised of 15 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. In addition, there were two vacant seats on the Board of Directors (the "Board") in 2019 due to the resignation of two elected directors in 2018.

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.

In 2015, shareholders approved bylaw amendments implementing a plan to reduce the size of the Board of Directors. Pursuant to the plan, which began to take effect in 2016, a total of 10 Board seats will be eliminated by January 1, 2020, reducing the number of elected directors on the Board from 24 to 14. The Board will also have up to four appointed directors and will continue to have two outside directors with no customer or Farm Credit System affiliations.

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, 2019, all 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 2019, the Board of Directors held a total of seven meetings and standing committees of the Board of Directors held a total of 27 meetings. The primary responsibilities of each committee are described on the following pages.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Standing Committees

<u>Audit Committee</u>

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 2019, 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 reviews and approves the quarterly and annual financial statements.

During 2019, 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 William M. Farrow, III as a "financial expert" during 2019.

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 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, 2019 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 2019 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, 2019 and for filing with the FCA.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Aggregate fees incurred by the Bank for services rendered by its independent auditors, PricewaterhouseCoopers LLP, for the years ended December 31, 2019 and 2018 were as follows:

Year Ended December 31,	2019	2018
Audit	**$ 1,713,500**	$ 1,563,500
Audit-related	**351,336**	240,000
All Other	**2,700**	2,700
Total	**$ 2,067,536**	$ 1,806,200

Audit fees were for the annual audit of the consolidated financial statements for 2019 and 2018.

Audit-related fees for 2019 were for attestation services in connection with internal control reviews. Both 2019 and 2018 included fees for assurance and related services associated with certain compliance procedures.

All other fees for 2019 and 2018 represent our annual subscription to accounting research tools as well as costs related to continuing education.

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 human equity 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 Executive Committee is responsible for reviewing the capital adequacy plan. 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 consults with the Compensation and Human Resources Committee regarding the director compensation program and 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 144), 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.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Other Committees

Nominating Committee

The Nominating Committee for 2019 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 makes a best effort to recommend at least two candidates for each position up for election. Shareholders and interested candidates may gather signatures for petitions to run for the Board 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, 2019

CoBank, ACB

The following represents certain information regarding the directors as of December 31, 2019, 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
Robert M. Behr [4]	2020	**Principal Occupation:**
		Chief Executive Officer: Citrus World, Inc., processing and marketing Florida's Natural brand citrus juices, Lake Wales, FL (since September 2015);
Age: 65		Chief Executive Officer: Citrus World Services, Inc., citrus marketing, Lake Wales, FL;
Year Service Began: 2013		Chief Executive Officer: Florida's Natural Food Service, Inc., citrus marketing, Lake Wales, FL;
		Chief Executive Officer: Florida's Natural Growers, Inc., citrus marketing, Lake Wales, FL;
		Chief Executive Officer: Hickory Branch Corporation, a citrus producer, Lake Wales, FL;
		Former Chief Operating Officer: Citrus World, Inc. (December 2009 through August 2015).
		Other Business Affiliations:
		Owner: Behr Citrus Management Inc., a citrus grove, Lakeland, FL;
		Owner: Behr-Nolte, a citrus grove, Lakeland, FL;
		Owner: CPI 3034 LLC, a citrus grove, Winter Haven, FL;
		Director/Vice President: CUPS Coop, 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;
		Director: Fresh N Natural Foods (PTE LTD), a distributor of Florida's Natural juice products, Republic of Singapore;
		Director: 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;
		Owner: Summer Breeze Fruit Co., a citrus grove, Gainesville, FL;
		Director: Winter Haven Citrus Growers Association, citrus processing and marketing, Tampa, FL.
Michael S. Brown [1, 6]	2020	**Principal Occupation:**
		Former Managing Director, Global Head of Multinational Coverage: JPMorgan Chase, a commercial bank, London, England (retired in June 2013).
Age: 61		**Other Business Affiliations:**
Year Service Began: 2017		Owner/Manager: Bayswater LLC, a property management company, San Diego, CA.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Russell G. Brown [5] Age: 61 Year Service Began: 2017	2020	**Principal Occupation:** Market President (Northern Neck Region): Atlantic Union Bank, a community bank, Warsaw, VA. **Other Business Affiliations:** Owner: Cobham Hall Farm, grain and timber farm, Warsaw, VA; Vice Chair: Northern Neck Electric Cooperative, a rural electric distribution cooperative, Warsaw, VA; Treasurer: 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.
Everett M. Dobrinski [1] Age: 73 Year Service Began: 1999	2019	**Principal Occupation:** Owner/Former Operator: Dobrinski Farm, a cereal grain and oilseed farming operation, Makoti, ND (retired as operator in December 2018). **Other Business Affiliations:** Director: Federal Agricultural Mortgage Corporation, a provider of a secondary market for agricultural credit, Washington, D.C.; Director: The Farm Credit Council, a national trade association, Washington, D.C.; Director: North Dakota Coordinating Council for Cooperatives, a trade association, Jamestown, ND.
William M. Farrow, III [4] Age: 64 Year Service Began: 2007	2022	**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: Chicago Board Options Exchange Global Markets, an options and volatility trading resource, Chicago, IL; Director: Echo Global Logistics, a provider of technology-enabled transportation and supply chain management services, Chicago, IL; Director: NorthShore University Health System, a hospital system, Evanston, IL; Advisor: Onyx Ventures, a technology asset management firm, Chicago, IL; Director: WEC Energy Group, an electric and natural gas distribution company, Milwaukee, WI.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Benjamin J. Freund [4] Age: 64 Year Service Began: 2014	2021	**Principal Occupation:** Owner/Officer: Freund's Farm, Inc., a dairy farming operation, East Canaan, CT; Owner/Managing Member: CowPots, LLC, a manufacturer of biodegradable plantable pots, East Canaan, CT. **Other Business Affiliations:** Officer: Canaan Valley Agricultural Cooperative, Inc., a manure management cooperative, East Canaan, CT; Advisory Board Member: Connecticut Farmland Preservation Advisory Board, adviser to Connecticut Commissioner of Agriculture, Hartford, CT; Director: Federal Farm Credit Banks Funding Corporation, the issuer of Systemwide debt, Jersey City, NJ.
Andrew J. Gilbert [5] Age: 61 Year Service Began: 2016	2019	**Principal Occupation:** Former Owner/Operator: Adon Farms Operations, LLC, a dairy farm and grain operation, Potsdam, NY (retired in January 2016); Former Owner/Operator: Adon Farms Real Estate Holdings, LLC, a real estate company, Potsdam, NY (retired in January 2016); Financial Consultant: NY FarmNet, a provider of financial and business consulting to farmers, Ithaca, NY. **Other Business Affiliations:** Director: ACDI/VOCA, an international development agency, Washington, D.C.; Director: AV Ventures, an international development agency, Washington, D.C.; Advisory Board Member: St. Lawrence County Development Study Advisory Board, a promoter of economic development, Massena, NY; Director: St. Lawrence County Planning Board, a county planning organization; Massena, NY; Director: TANAGER, an international development agency, Washington, D.C.
Daniel T. Kelley [2,7] Age: 71 Year Service Began: 2004	2021	**Principal Occupation:** Owner/Operator: Kelley Farms, a corn and soybean farming operation, Normal, IL. **Other Business Affiliations:** Director: Global Farmer Network, a nonprofit organization, Des Moines, IA; Director: Illinois 4-H Foundation, a nonprofit organization, Urbana, IL; Chair: Illinois Agricultural Leadership Foundation, a nonprofit organization supporting agricultural leadership development, Bloomington, IL; Director: Midwest Grain, LLC, a grain merchandising company, Bloomington, IL; Director: Nationwide Mutual Insurance Company, an insurance company, Columbus, OH; Director: Nationwide Trust Company, a federal savings bank, Columbus, OH.

Board of Directors Disclosure as of December 31, 2019

CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
David J. Kragnes [4, 9] Age: 67 Year Service Began: 2009	2020	**Principal Occupation:** Owner/Operator: David Kragnes Farm, a corn and bean row crop farming operation, Felton, MN. **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.
Jon E. Marthedal [3] First Vice Chair Age: 63 Year Service Began: 2013	2021	**Principal Occupation:** Owner/Operator: Marthedal Farms, a grape, raisin, blueberry and almond farming operation, Fresno, CA; Owner/Operator: Keystone Blue Farms, LLC, a blueberry farming operation, Fresno, CA; Owner/Officer: Marthedal Enterprises Inc., a provider of farm management and custom agriculture services, Fresno, CA. **Other Business Affiliations:** Vice 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: California Raisin Marketing Board, a state marketing board, Fresno, CA; Vice Chair: Raisin Administrative Committee, a federal marketing order, Fresno, CA; Director: Sun-Maid Growers of California, a raisin processing and marketing cooperative, Kingsburg, CA.
Catherine Moyer [2] Age: 44 Year Service Began: 2010	2022	**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. **Other Business Affiliations:** Vice Chair: Federal Communications Commission, Precision Ag Connectivity Task Force, a federal telecommunications regulator, Washington, D.C.; Non-Legislative Committee Member: Kansas Broadband Task Force, a state committee providing mapping, funding, and deployment recommendations to the Kansas legislature, Topeka, KS; 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.

Board of Directors Disclosure as of December 31, 2019

CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
David S. Phippen [2] Age: 69 Year Service Began: 2019	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: Almond Board of California, a trade association, Modesto, CA; Director: San Joaquin County Farm Bureau, a farm trade association, Stockton, CA.
Ronald J. Rahjes [1] Age: 68 Year Service Began: 2012	2019	**Principal Occupation:** Officer: Wesley J. Rahjes and Sons, Inc., a diversified family farming corporation producing wheat, corn, soybeans and grain sorghum, Kensington, KS; Owner: R&C Tax Service, a tax preparation services firm, Kensington, KS; Owner: R&D Farms, a farming partnership producing wheat, corn, soybeans and grain sorghum, Kensington, KS. **Other Business Affiliations:** Director: Rural Telephone/Nextech, Inc., a telecommunications company, Lenora, KS.
Scheherazade S. Rehman [5] Age: 56 Year Service Began: 2019	2022	**Principal Occupation:** Professor: The George Washington University, an educational institution, Washington, D.C. **Other Business Affiliations:** Director: American Consortium on European Studies, an education, research and outreach organization, Washington, D.C.; Director: European Union Research Center, an organization promoting scholarly and policy-oriented research and discussions on the European Union, Washington, D.C.; Director: Executive MBA in Cyber-Security, an academic program, Washington, D.C.; President and Managing Partner: International Consultants Group, a consulting firm, Washington, D.C.;

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Kevin G. Riel [3, 8] Chair Age: 54 Year Service Began: 2014	2021	**Principal Occupation:** President and Former Chief Executive Officer: Double 'R' Hop Ranches, Inc., a diversified farming operation primarily growing hops, together with apples, grapes and row crops, Harrah, WA (retired as Chief Executive Officer in January 2019); Former President and Chief Executive Officer: Tri-Gen Enterprises, Inc., an agricultural marketing company, Harrah, WA (company dissolved in September 2019); Managing Partner: WLJ Investments, LLC, a land holding and management company, Harrah, WA. **Other Business Affiliations:** Director: Hop Growers of America, a trade association, Moxee, WA; Advisory Board Member: Nationwide Insurance Board Advisory Committee, an insurance company, Columbus, OH; Governance Committee Chair: Yakima Chief Hops, a hops supplier and processor, Yakima, WA.
Karen L. Schott [1] Age: 52 Year Service Began: 2016	2019	**Principal Occupation:** Owner/Secretary/Treasurer: Bar Four F Ranch, Inc., a dryland, small grains and lease pasture farming operation, Broadview, MT. **Other Business Affiliations:** Director: Northwest Farm Credit Services, ACA, an agricultural credit association, Spokane, WA.
Kevin A. Still [3] Second Vice Chair Age: 62 Year Service Began: 2002	2022	**Principal Occupation:** President and Chief Executive Officer: Co-Alliance, LLP, a partnership of five cooperatives supplying energy, agronomy and animal nutrition, and producing swine and marketing grain, Avon, IN; Chief Executive Officer and Treasurer: Excel Co-op, Inc., Frontier Co-op, Inc., IMPACT Co-op, Inc., LaPorte County Farm Bureau Cooperative Association, Midland Co-op, Inc., agricultural retail cooperatives, Avon, IN; President: Michiana Agra, LLC, an agricultural retail cooperative, Constantine, MI. **Other Business Affiliations:** Officer: Agronomy Services, LLP, an agricultural retail organization, Fairmont, IN; Officer: Alliance Feed, LLC, an agricultural retail coop, Avon, IN; Chair: Local Harvest Food, a food broker, Avon, IN; President: Northwind Pork, LLC, a pork producing operation, Kewanna, IN; Owner/President: Still Farms, LLC, a grain farm, Galesburg, IL; Director: Wholestone Farms II, LLC, a food company, Pipestone, MN.

Board of Directors Disclosure as of December 31, 2019
CoBank, ACB

Name	Term Expires	Principal Occupation and Other Business Affiliations
Edgar A. Terry [5, 10]	2023	**Principal Occupation:**
		Owner/President: Terry Farms, Inc., a vegetable and strawberry farming operation, Ventura, CA;
Age: 60		Owner/Limited Partner: Ag. Center LTD, a real estate company, Ventura, CA;
Year Service Began: 2016		Owner/Officer: Amigos Fuerza, Inc., a provider of farm labor contracting, Ventura, CA;
		Owner/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: Limoneira Company, a publicly held agribusiness and real estate development Company, Santa Paula, CA;
		Vice Chair: Ventura County Fairgrounds Foundation, a nonprofit organization, Ventura, CA.
Brandon J. Wittman [2]	2022	**Principal Occupation:**
		Chief Executive Officer and General Manager: Yellowstone Valley Electric Cooperative, Inc., an electric distribution cooperative, Huntley, MT.
Age: 49		
Year Service Began: 2018		**Other Business Affiliations:**
		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, Bismark, ND;
		Manager's Advisory Committee Member: Central Montana Electric Power Cooperative, a wholesale power supplier, Great Falls, MT;
		Manager's Group Chair: Montana Electric Cooperatives Association, an electric cooperatives statewide association, Great Falls, MT.

Board of Directors Disclosure as of December 31, 2019

CoBank, ACB

Compensation of Directors

In 2019, CoBank's Board adopted a new director compensation program in response to the elimination of the statutory maximum limit on director compensation by the 2018 Farm Bill. This new 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. For 2019, director compensation was comprised of a cash retainer for all Board members in the annual amount of $110,000, 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 $17,500 retainer. The Audit Committee chair received a $22,500 retainer while the Compensation and Human Resources, Governance and Risk Committee chairs each received a $13,500 retainer. Compensation is 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 above 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. The Board did not approve any special compensation above the retainers, or any adjustments for unexcused absences, in 2019. Additional information for each director who served during 2019 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 was $368,796, $474,427, and $658,727 for the years ended December 31, 2019, 2018, and 2017, respectively.

Board of Directors Disclosure as of December 31, 2019

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, 2019.

Name of Director	Number of Days Served at Board Meetings	Number of Days Served in Other Official CoBank Activities	Total Compensation Paid During 2019
Robert M. Behr	19	11	$110,000
Michael S. Brown [(1)]	18	22	$132,500
Russell G. Brown	19	29	$110,000
Everett M. Dobrinski [(2)]	18	16	$110,000
William M. Farrow III	19	7	$110,000
Benjamin J. Freund [(2)]	18	22	$110,000
Andrew J. Gilbert	19	17	$110,000
Daniel T. Kelley [(3)]	14	21	$123,500
David J. Kragnes [(2) (4)]	18	16	$123,500
Jon E. Marthedal [(2) (5)]	19	31	$127,500
Catherine Moyer	19	17	$110,000
David S. Phippen	19	14	$110,000
Ronald J. Rahjes	19	24	$110,000
Scheherazade S. Rehman	18	23	$110,000
Kevin G. Riel [(6)]	19	49	$150,000
Karen L. Schott	18	20	$110,000
Kevin A. Still [(7)]	19	20	$127,500
Edgar A. Terry [(8)]	17	13	$123,500
Brandon J. Wittman [(2)]	19	21	$110,000
Total	348	393	$2,228,000

(1) Mr. Brown received a $22,500 retainer for service as the Chair of the Audit Committee.

(2) In 2019, 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. Kelley received a $13,500 retainer for service as the Chair of the Compensation and Human Resources Committee.

(4) Mr. Kragnes received a $13,500 retainer for service as the Chair of the Governance Committee.

(5) Mr. Marthedal received a $17,500 retainer for service as the First Vice Chair of the Board.

(6) Mr. Riel received a $40,000 retainer for service as the Chair of the Board.

(7) Mr. Still received a $17,500 retainer for service as the Second Vice Chair of the Board.

(8) Mr. Terry received a $13,500 retainer for service as the Chair of the Risk Committee.

Senior Officers
CoBank, ACB

Thomas E. Halverson,
President and Chief Executive Officer

Mr. Halverson, 55, 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. He serves as chairman on the Board of Directors of Farm Credit Leasing Services Corporation (FCL). 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 Vice Chairman of the National Council of Farmer Cooperatives.

Timothy M. Curran,
Chief Risk Officer

Mr. Curran, 52, 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 and reputational 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 as well as senior global market and credit risk manager for Global Commodities Trading and the Power, Energy, Chemicals, Mining and Metals industry credit risk. 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 31 years of experience in the financial services and commodity markets. 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.

David P. Burlage,
Chief Financial Officer

Mr. Burlage, 56, 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. Mr. Burlage has over 34 years of financial experience. He serves as chairman of the Board of Governors of the Farm Credit System Association Captive Insurance Company and as director on the board of the Young Americans Center for Financial Education. He is a licensed CPA in the State of Ohio and a member of the American Institute of Certified Public Accountants.

F. William Davis,
Executive Vice President, Farm Credit Banking Group

Mr. Davis, 61, was appointed executive vice president of the Farm Credit Banking Group effective August 1, 2018. In this role, Mr. Davis is responsible for CoBank's relationships with our 21 affiliated Associations and other Farm Credit institutions, the Bank's Digital Business Solutions Division and FCL. Prior to his current position, Mr. Davis was CoBank's chief credit officer. Before joining CoBank in March 2017, Mr. Davis was chief credit officer for Farm Credit Services of America (FCSAmerica) and Frontier Farm Credit, a CoBank affiliated Association that operates under a strategic alliance with FCSAmerica. Previously, Mr. Davis was FCSAmerica's senior vice president of credit and before that director of credit underwriting. Prior to joining FCSAmerica, he held senior credit positions with Farm Credit Services of Western Missouri and the Farm Credit Bank of St. Louis. He serves on the Board of Directors of AgVantis, Inc., a service provider to System Associations.

Senior Officers
CoBank, ACB

Eric Itambo,
Chief Banking Officer

Mr. Itambo, 49, was appointed chief banking officer effective July 1, 2018. He is responsible for all business segments, capital markets and banking services. 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.

M. Mashenka Lundberg,
Chief Legal Officer and General Counsel

Ms. Lundberg, 52, 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 function and the Legal and Loan Processing Division. In 2019, Ms. Lundberg also began overseeing the Bank's regulatory function. 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 the finance committees of Mile High United Way, a social services organization in the Denver area, and the Dumb Friends League, the community-based animal welfare organization in the Rocky Mountain Region.

Andrew D. Jacob,
Chief Operating Officer

Mr. Jacob, 59, was appointed chief operating officer effective September 1, 2019. He is responsible for oversight of the Bank's Operations and Information Technology divisions. He also oversees the Business Transformation Services group which includes the disciplines of data strategy, process excellence, business analysis, project execution and change management. Mr. Jacob is also responsible for CoBank's Corporate Communications, Knowledge Exchange and Government Affairs divisions as well as the Corporate Social Responsibility program. Prior to his current position, Mr. Jacob was CoBank's chief regulatory, legislative and compliance officer (CRLCO) from 2015 to 2019. Mr. Jacob also served as CoBank's ethics, compliance, and standards of conduct officer. Before joining CoBank in January 2011 as the executive vice president responsible for the Bank's regulatory, legislative and compliance functions, 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.

Robert L. O'Toole,
Chief Human Resources Officer

Mr. O'Toole, 57, has served as chief human resources officer since February 1, 2015. He provides leadership and direction to the Bank's human resources, organizational development, administrative services, and diversity, inclusion, and engagement programs and initiatives. Mr. O'Toole served as chief of staff from 2017 to 2019 and senior vice president of human resources from 2010 to 2015. Mr. O'Toole has more than 33 years of experience in business and human resources. Mr. O'Toole holds the SPHR certification by the Human Resource Certification Institute. Mr. O'Toole serves on the Board of Directors of the Mile High Chapter of The American Red Cross (Colorado and Wyoming region).

Senior Officers
CoBank, ACB

Michael L. Short,
Chief Credit Officer

Mr. Short, 58, 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 26 years of financial services experience.

Robert F. West,
Executive Vice President Infrastructure Banking

Mr. West, 61, was appointed head of the Infrastructure Banking Group effective January 1, 2017. He is responsible for delivering credit and other financial services to the Bank's rural electric, water, communications and community facilities customers and public private partnerships. Previously, Mr. West was the head of CoBank's Communications Banking Division. Before joining CoBank in 1996, Mr. West spent six years with Shawnut National Bank where he served as director/team leader for lending to the communications and media industries. Mr. West has more than 35 years of experience in commercial banking and lending covering a broad range of communications, infrastructure and media businesses.

Ann E. Trakimas,
Chief Operating Officer

Ms. Trakimas, 63, served as chief operating officer through December 31, 2019 and included facilitating transition of her responsibilities to Mr. Jacob from September 1, 2019 to December 31, 2019.

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, 2019, 2018 and 2017.

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 2019 the CEO's target total direct compensation mix was approximately 26 percent base salary and 74 percent performance-based, variable incentives;
- 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;
- 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, 2019, no employees were employed subject to the terms of an employment agreement; and
- The Committee engages an independent executive compensation consultant to 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 32 of this Annual Report, in 2019 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 2019 was funded between the target and maximum award levels. In addition, based on strong performance in the 2017 through 2019 period, 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;
- Be integrated with the Bank's business processes, including business planning, performance management and succession planning; and
- Enhance management of risk and accountability.

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 and benefits 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 salary, benefits and supplemental compensation, including 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. Decisions about salary and performance also occur at other meetings in the year, as considered appropriate. 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 or significant customer relationships.

For 2017, 2018 and 2019, 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. In 2017, 2018 and 2019, Pay Governance did not provide any other services to CoBank that were not approved in advance by the Committee.

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 supplemental retirement benefits, as discussed on page 164.

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 benchmarked to market

Overview of Senior Officers' Compensation (continued)		
Component	**CoBank Philosophy**	**Design Characteristics**
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 bankwide 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 • Limited discretionary component to reflect exceptional events • 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
Long-Term Incentive Plan	• 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 bankwide financial and strategic business objectives • Links pay to performance outcomes • Establishes competitive incentive opportunities relative to peers	• Multiple corporate financial and non-financial goals • 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 must be achieved in each year of the plan for a full payout • No individual performance factor although a minimum level of individual performance is considered; corporate performance determines level of payout • Clawback provision for the Bank's Management Executive Committee, including the CEO
Retirement Benefits	• 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	• 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

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

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

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 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 eleven 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 2019, CoBank performed at or above maximum award levels on one corporate performance goal, and between the target and the maximum award level on four corporate performance goals
- For the eleven Business Units, the corporate factor includes between two and four additional unit performance measures using metrics that may include transaction quality, transaction volume and profitability, as appropriate. Business Units' performance varied within 10 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.

Annual 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 bankwide 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, 2017, 2018 and 2019.

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 2019 performance period, the target short-term incentive level for the CEO was 90 percent of salary. For the other senior officers, the targets ranged from 50-65 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 a ten percent upward or downward adjustment to the corporate performance factor, where appropriate, in addition to providing a subjective performance result for the achievement of strategic business objectives.

  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 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 2019 short-term incentive corporate scorecard is as follows:

2019 Short-Term Corporate Scorecard

	Weight	
Performance Measure	**Business Unit**	**All Other**
Net Income	12.5 %	20 %
Return on Common Equity (Excl AOCI)	12.5	15
Strategic Business Objectives	20	20
Loan Quality (Adverse Loans to Total Regulatory Capital)	10	20
Operating Expense Ratio	15	25
Unit Specific Measures	30	N/A

For eleven Business Units, 30 percent of the corporate performance factor is represented by unit specific performance measures for transaction quality, transaction volume 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 competencies 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 2019, 2018 and 2017 for the CEO, other senior officers and any highly compensated employees are presented in the Summary Compensation Table on page 167.

Senior Officers Compensation Discussion and Analysis

CoBank, ACB

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 adequacy
- Board of Directors also provides subjective evaluation related to the achievement of corporate strategic business objectives
- For the 2017 through 2019 performance period, CoBank performed at or above maximum award level on three corporate performance goals and between the target and maximum award levels on two corporate performance goals

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 the accountability and balance for the annual outcomes measured in the short-term plan. Participants in the long-term plan directly influence the longer-term outcomes of actions and risks taken during each 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 to drive the success of strategies and projects 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 bankwide 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. These three-year performance metrics and objectives are established at the beginning of each three-year performance period by the Board of Directors in connection with the annual business and financial plan. A minimum return on active patron stock investment must be achieved in each year of the three-year performance period for a full payout to be approved, ensuring that shareholders are rewarded first. The return minimum is 11 percent for each of the three-year performance periods.

The actual long-term incentive award is determined as follows:

Salary × Individual Long-Term Incentive Target × 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 Target* — For the 2017 through 2019 performance period, the long-term incentive target for the CEO was 130 percent. For the remaining senior officers, the targets ranged from 20 to 80 percent during the period.

- *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, where appropriate, in addition to providing a subjective performance result for the achievement of strategic business objectives.

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 adequacy, 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 an average of strategic business objective results during each year in the three-year performance period. 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. The Committee approves the corporate performance factor based on actual performance in comparison to target. The long-term incentive corporate scorecards for the three-year performance periods 2017 through 2019, 2018 through 2020, and 2019 through 2021 are as follows:

Long-Term Incentive Corporate Scorecards:
2017 – 2019, 2018 – 2020 and 2019 – 2021 Periods

Performance Measure	Weight
Net Income	20 %
Total Capital Ratio	20 %
Return on Common Equity (Excl AOCI)	20 %
Strategic Business Objectives	20 %
Loan Quality (Adverse Loans to Total Regulatory Capital)	20 %

The actual long-term incentive awards for 2019, 2018 and 2017 for the CEO and other senior officers are presented in the Summary Compensation Table on page 167.

Employment Agreement

As of December 31, 2019, 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 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 three senior officers employed at December 31, 2019, as well as specified other senior managers. For 2019, there were no additional 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, 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 postretirement health care benefits.

Defined Benefit Pension Plans

Senior officers hired prior to January 1, 2007 are participants in the defined benefit pension plans. Pursuant to these plans, the benefits are determined based on years of service and final average pay. Eligible compensation for senior officers, 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 for senior officers 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. All senior officers participating in the defined benefit pension plans have been employed for more than five years and, as such, are fully vested in the plans. 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 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 due to federal tax laws. Contributions are made at the same percentages as available under the 401(k) retirement savings plan. The compensation that is deferred is invested in any number of investment options selected by the participants. These investment options are either identical or substantially 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 cannot be paid except in accordance with specified elections as permitted by law. At that time, the participant will receive payment of the amounts credited to his or her account under the plan in a manner that has been specified by the participant. If a participant dies before the entire amount has been distributed, the undistributed portion will be paid to the participant’s beneficiary.

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 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 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.

- S*hareholder Return* – A minimum return on active patron stock investment must be achieved for incentive compensation payments to be approved.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

Effective January 1, 2013, the Board of Directors approved 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 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.

Furthermore, in December of 2017, the Board of Directors approved an expansion of circumstances under which the “clawback” policy could be enforced to include ethical misconduct, theft, misappropriation, violation of Company policy, or materially imprudent judgment that caused financial or reputational harm to the Company, 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.

Additionally, the Compensation and Human Resources Committee annually considers an assessment of compensation-related risks for all of our employees. 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 effect 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.

Senior Officers Compensation Discussion and Analysis
CoBank, ACB

Summary Compensation Table

The following table summarizes 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, 2019, 2018 and 2017. For the 2017 period, information is included for our former CEO who met the definition of a highly compensated employee due to contractual agreements between the former CEO and CoBank. 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)

			Annual					
Name of Individual or Number in Group[2]	Year	Salary	Short-Term Incentive Compensation[3]	Long-Term Incentive Compensation[3]	Change in Pension Value[4]	Deferred/ Perquisites[5]	Other[6]	Total
CEO:								
Thomas E. Halverson	2019	**$ 846**	**$ 1,355**	**$ 1,256**	**$ -**	**$ 248**	**$ -**	**$ 3,705**
Thomas E. Halverson	2018	800	1,373	1,078	-	213	1	3,465
Thomas E. Halverson	2017	725	1,096	759	-	180	100	2,860
Aggregate Number of Senior Officers and the Highly Compensated Employee (excluding the CEO):								
10	2019	**$ 3,970**	**$ 3,518**	**$ 2,735**	**$ 1,462**	**$ 883**	**$ 1,087**	**$ 13,655**
12	2018	4,151	4,097	2,660	1,183	968	1,952	15,011
12	2017	4,051	3,940	3,684	5,649	1,039	4,687	23,050

(1) Disclosure of the total compensation paid during 2019 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 or in an employment agreement. 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 decreased in 2018 primarily due to the former CEO and a senior officer who are participants in the plan and left the Bank in 2017.

(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 2019, $1,087 represents an amount paid to a Senior Officer who left the bank in 2019 for separation pay and certain other benefits pursuant to the terms of an agreement. For 2018, $18 represents amounts paid to Senior Officers as part of a board approved initiative to share tax reform savings with customers and associates. Also for 2018, $1,952 includes $500 for an amount paid to an executive who joined the Bank in 2018; $213 for the balance of sign-on payments due to two executives who joined the Bank in 2017; and $1,221 for amounts paid to two executives who left the Bank in 2018 for separation pay and certain other benefits pursuant to the terms of an agreement. For 2017, $100 represents amount paid to the CEO for a Board-approved recognition bonus. Also for 2017, $4,687 includes $4,225 for amounts payable to the former CEO (who left the Bank on June 30, 2017) in exchange for valuable consideration to the Bank, pursuant to the terms of an agreement (which replaced a consulting agreement that was previously in place); $312 for amounts payable to two senior officers who joined the Bank in 2017; and $150 for a Board-approved project bonus to one senior officer.

Pension Benefits

The following table presents certain pension benefit information by plan for the senior officer group as of December 31, 2019. 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[2]	Actuarial Present Value of Accumulated Benefits	Payments During Last Fiscal Year
Aggregate Number of Senior Officers				
3	CoBank, ACB Retirement Plan	19.97	$ 2,557	$ -
3	Supplemental Executive Retirement Plan	19.97	4,053	-
Total			$ 6,610	$ -

(1) The senior officers included in the pension benefits disclosure are those defined by FCA regulations §619.9310 and §620.6.

(2) Represents an average for the aggregate senior officer group.

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, 2019.

Members of the 2020 Compensation and Human Resources Committee:

Daniel T. Kelley, Chair
Catherine Moyer
David S. Phippen
Kevin G. Riel
Brandon J. Wittman

February 28, 2020

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:

Corporate Communications Division
P. O. Box 5110
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, 2019:				
Young	20,572	16.55 %	$ 7,102,285	8.20 %
Beginning	29,280	23.56	9,717,365	11.22
Small	44,693	35.96	7,071,428	8.17
Gross New Loans and Commitments Made During 2019:				
Young	4,831	17.17 %	$ 1,940,789	8.45 %
Beginning	6,636	23.58	2,451,503	10.67
Small	10,048	35.71	1,617,039	7.04

Small Farmers and Ranchers

Number / Volume of Loans Outstanding by Loan Size at December 31, 2019

Number / Volume	$0 – $50,000	$50,001 – $100,000	$100,001 – $250,000	$250,001 and greater
Total Number of Loans to Small Farmers and Ranchers	14,781	9,966	12,655	7,291
Total Loan Volume to Small Farmers and Ranchers ($ in Thousands)	$ 387,178	$ 753,933	$ 2,056,504	$ 3,873,813

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, 2019.

FCL Titling Trust Assets ($ in Thousands)

Titling Trust	Amount
Altec Titling Trust	$ 12,720

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: February 28, 2020

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: February 28, 2020

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 2020 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 on approximately May 8, 2020, August 7, 2020, November 9, 2020, and March 1, 2021 (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

AMES BANKING CENTER

2515 University Boulevard
Suite 104
Ames, IA 50010
515-292-8828

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*

13810 FNB Parkway
Suite 301
Omaha, NE 68154
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

2001 South Flint Road
Suite 102
Spokane, WA 99224
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*

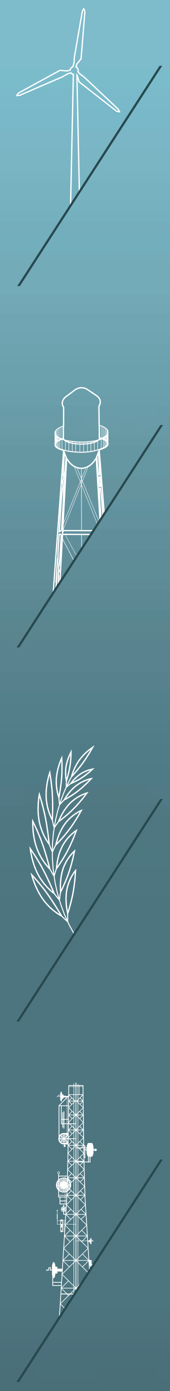
245 North Waco
Suite 130
Wichita, KS 67202
316-290-2000
800-322-3654
FCL: 800-322-6558

* Farm Credit Leasing office within this CoBank location

INTERNATIONAL REPRESENTATIVE OFFICE

350 Orchard Road
#15-07 Shaw House
Singapore 238868
65-6534-5261

DESIGN: Watermark (wmkagency.com)



6340 South Fiddlers Green Circle
Greenwood Village, Colorado 80111
800.542.8072