Strength *and* Agility

Annual Report 2022

FARM CREDIT
BANK OF TEXAS

Proud Partner Serving Agriculture

Year after year, America's farmers, ranchers and agribusiness owners face fresh challenges to adapt, adjust and continue producing.

Amid all that's unpredictable — weather, markets and more — there's one constant: Farm Credit.

Farm Credit Bank of Texas is a source of stable funding and services that help our affiliated lending institutions meet the needs of their local borrowers. In addition to helping associations serve ag producers, we participate in loans to agribusinesses and companies that provide essential rural infrastructure.

Our solid foundation, cooperative structure and commitment to our mission have stood the test of time. As this 2022 edition of our annual report shows, we're proud of our unwavering dedication to better the quality of life in rural America as we embrace the opportunity to serve generations to come.

FARM CREDIT
BANK OF TEXAS

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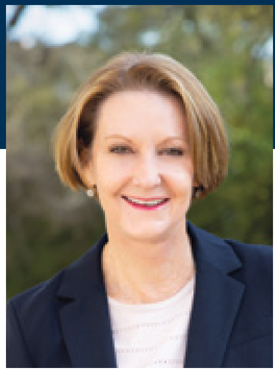
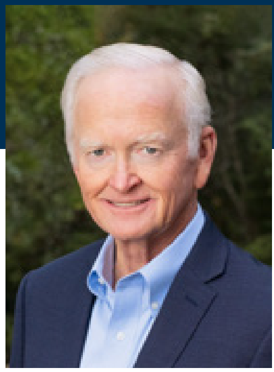
To Our Stockholders



Amie Pala



Jimmy Dodson

2022 was another year of significant loan growth for Farm Credit Bank of Texas.

Low interest rates early in the year and high agricultural production expenses throughout 2022 fueled loan demand. Meeting this need for new or additional financing drove increases of 18.4% in our loan participations and 6.7% in direct notes to our affiliated lending cooperatives, also called associations. Loan growth also benefited from our strong relationships with our associations and other lending partners inside and outside Farm Credit.

The challenge was navigating a rapidly shifting economic landscape. Interest rates rose at the fastest pace in decades, inverting the yield curve and squeezing net interest margins.

One of the most significant benefits of our cooperative business model in 2022 was managing interest rate risk for our associations as part of our funding process. Insulating them against this risk during a historically volatile rate environment helped them retain more earnings, cover rising expenses and return more earnings to their member-owners in the form of patronage payments.

Despite the challenges, we stayed focused on our mission because rural communities and agriculture count on us. The bank finished the year with a record $269.9 million in net income, $36.0 billion in assets and strong credit quality.

We also enhanced technology, tools and training to help associations streamline the lending process, work securely and remotely, and comply with new regulations and accounting standards. We are now preparing to transition more associations to our integrated suite of technology products for loan origination, underwriting, loan accounting and servicing.

Remaining agile and resilient in 2022 positioned us to help rural communities and agriculture succeed in the future. We look forward to our continued partnerships and new opportunities to come.

Our Mission

Enhance the quality of life in rural communities by using cooperative principles to provide competitive credit and superior service to our member-owners.

James F. "Jimmy" Dodson
Board Chair

Amie Pala
Chief Executive Officer

Top Financial Indicators 2022

Key Accomplishments

Bank achieves strong financial results in a challenging environment

Robust asset growth and net interest income helped compensate for a challenging interest rate environment that put pressure on net interest margin. Net income increased $15.3 million or 6.0% year over year to a record $269.9 million. Credit quality remained very strong.

Affiliated lending co-ops report significant loan growth

Loan growth at our district associations outpaced expectations, reflecting strong regional economies and borrowers who capitalized on low interest rates in the first half of 2022. Our direct notes to these lenders increased $1.2 billion or 6.7% in 2022.

Loan participations growth surpasses projections

We partner with our associations and other institutions to finance agricultural production and processing, rural infrastructure and more. This loan portfolio grew $1.4 billion or 18.4% in 2022 due to increased borrower financing needs and new business opportunities. Growth was notably strong in agribusiness, agricultural production and intermediate-term, communications and energy loans.

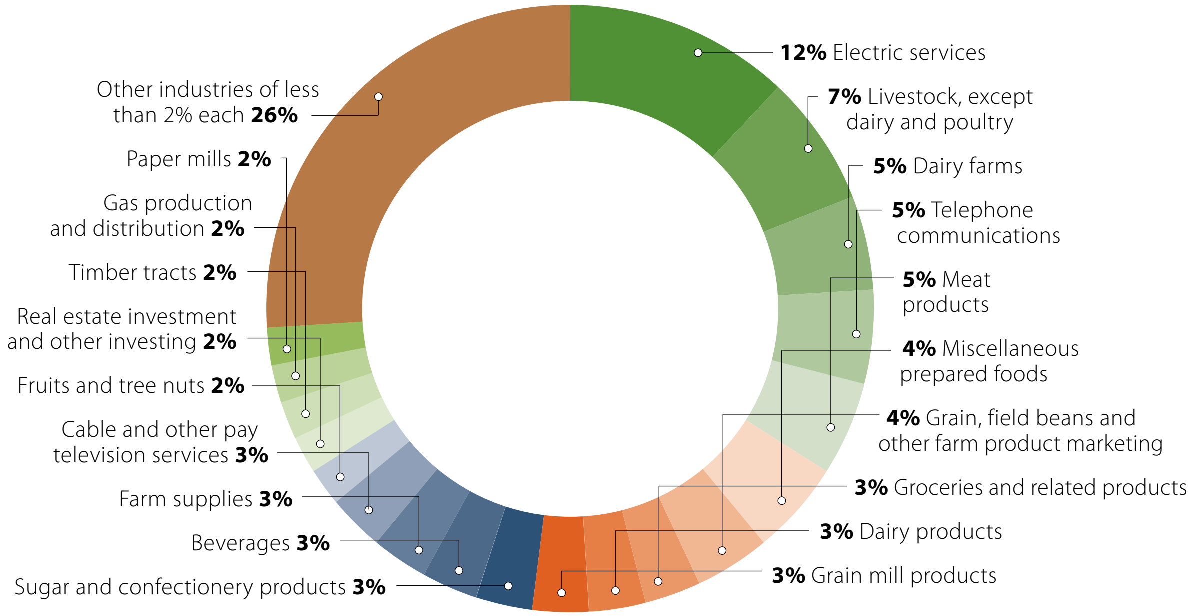
Bank maintains strong capital and liquidity

Our solid capital position, diversified loans and investments, and interest rate risk and debt management provide stability and opportunities for growth. The bank ended the year with $7.1 billion in cash and investments, $1.6 billion in shareholders' equity and a total capital ratio of 13.50%.

Products and support services help associations serve their customers

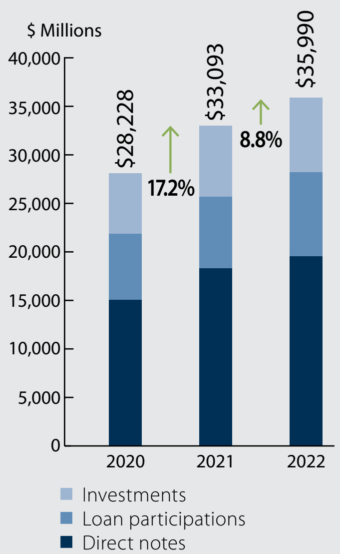
Several operational and technology initiatives are enhancing security, risk management, regulatory compliance and the borrower experience. Our two largest associations converted to the fully integrated suite of lending software we launched in 2020, and we rolled out additional functionality to all associations.

$8.7 Billion Participations Portfolio Segmented by Repayment Source

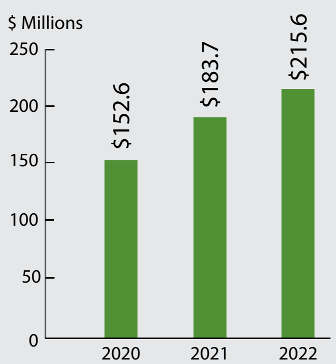


Loan participations provide diversification by both industry and geography.

Asset Growth



Cash Patronage Declared



FARM CREDIT
BANK OF TEXAS

Regulatory Capital and Liquidity Measures

	At Dec. 31, 2022	Regulatory Requirement
Common equity tier 1 ratio	8.66%	7.00%
Total capital ratio	13.50%	10.50%
Tier 1 leverage ratio	5.94%	5.00%
Liquidity	197 days	90 days
Capital level	$1.6 billion	

Credit Quality

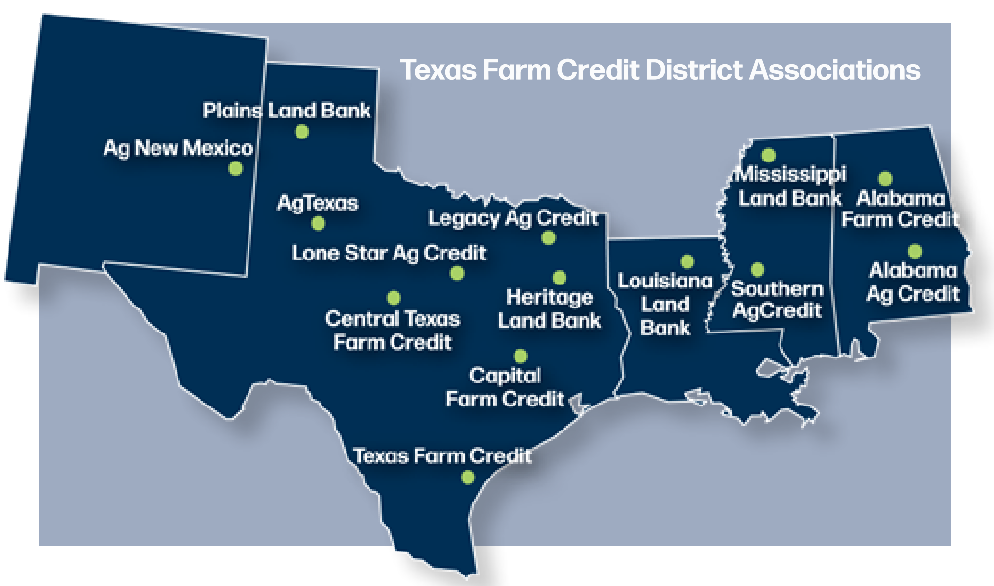
99.7%

Acceptable or Special Mention

Financial Highlights

At Year-End (in millions)	2022	2021	2020
Total loans	**$ 28,264**	$ 25,675	$ 21,824
Total assets	**35,990**	33,093	28,228
Total liabilities	**34,367**	31,095	26,236
Total shareholders' equity	**1,623**	1,998	1,992

For the Year (in thousands)	2022	2021	2020
Net interest income	**$ 386,162**	$ 367,811	$ 337,978
Provision for credit losses	**(4,580)**	(1,725)	(1,081)
Noninterest expense, net	**(111,696)**	(111,495)	(85,760)
Net income	**$ 269,886**	$ 254,591	$ 251,137
Rate of return on:			
Average assets	**0.77%**	0.84%	0.92%
Average shareholders' equity	**14.55%**	12.17%	12.58%
Cash patronage declared	**$ 215,648**	$ 183,691	$ 152,562



The Cooperative Advantage

Cooperating for the benefit of our customers

Farm Credit, established in 1916, meets the critical need for dependable credit in rural America. It was structured as a nationwide network of customer-owned cooperatives that operate in the best interests of their members.

Our bank is one of four funding banks in the Farm Credit System. We are a federated cooperative, owned by 14 retail lending co-ops. We help these associations thrive so they can do the same for agriculture and rural communities.

We give those associations a competitive edge in the marketplace by:

- Providing funding at or below our cost
- Maintaining a large, diverse asset base so we can manage risk and generate earnings from sources other than our owners
- Centralizing key functions and services at the bank, such as technology and other services required for day-to-day business operations, freeing associations to focus on their customers

Our cooperative business model benefits associations and their borrowers in several ways.

Saving customers money through cooperative returns and loan pricing

As a Farm Credit System funding bank, we obtain funding through the sale of highly rated Farm Credit notes and bonds.

We lend the funds to our associations and two other financing institutions at our cost, plus a wholesale spread. We then return the spread to them — both upfront through favorable loan pricing and at the end of the year by distributing a portion of our earnings — reducing their funding cost to the bank's own cost. These earnings distributions are called cooperative returns or patronage dividends.

Our associations pass the value on to the farmers, ranchers, agribusinesses, rural homeowners and landowners they serve. Patronage effectively lowers members' borrowing costs — a unique benefit of doing business with a cooperative.

In total, the bank returned $215.6 million in cash through five patronage programs and allocated another $7.6 million in equity to one of our participation partners. The bank declared patronage on:

Affiliated lenders' direct notes	$152.0 million
Participation loans (cash and equity)	54.6 million
Affiliated lenders' stock in the bank	9.5 million
Capitalized Participation Pool	3.7 million
Non-Capitalized Participation Pool	3.4 million
Total	$223.2 million

The bank distributed another $46.4 million in preferred stock dividends.

Creating greater efficiency, economies of scale

The bank provides services in credit, accounting, technology, compliance, risk management, human resources and other areas. This creates greater efficiency and economies of scale for associations, helping them avoid huge investments in these areas.

We help our associations support rural communities, agribusinesses and commercial operations in their

territories in a number of ways. We also participate with other financial institutions in capital markets loans to ag-related businesses and rural infrastructure companies. When these customers needed more capital to cover high commodity prices, input costs and other expenses in 2022, Farm Credit was there to help.

Our priority for several years has been to deliver market-driven lending and accounting systems that are user-friendly, yet powerful enough to handle complex loans. Six associations now use our FarmView™ lending and loan accounting system, representing more than 64% of combined association volume. We continue to refine the FarmView system based on association feedback, and are preparing to transition additional associations in 2023.

Other support services in 2022 included helping associations get ready to adopt the Current Expected Credit Loss (CECL) standard; supporting associations as they prepared for a new Farm Credit Administration standards of conduct rule for directors and employees; enhancing cybersecurity and the bank's disaster recovery infrastructure; improving network connectivity; shortening the time it takes to onboard new employees; rolling out a more stable, secure way to work remotely; and introducing new cloud-based technology.

We are a federated cooperative, owned by 14 retail lending co-ops. We help these associations thrive so they can do the same for agriculture and rural communities.

Caring for Community

For more than a century, the bank has provided reliable funding to its member-owners — associations that support the agricultural producers who adopt and innovate to conserve natural resources and strengthen our nation's food, fuel and fiber supply. This cooperative structure enables us to practice sustainability for the benefit of our members.

ESG: Steps we're taking

We maintain a solid base of environmental, social and governance (ESG) initiatives, and are looking at opportunities to expand in this important area.

Environmental sustainability

Farmers and ranchers are some of the foremost stewards of the land. They continually adapt to changing weather conditions, adopt new technologies and pursue sustainable practices, such as soil conservation and smart irrigation.

Social impact

Farm Credit Bank of Texas' leadership team is committed to the cooperative principles and our mission of providing dependable funding for rural communities and infrastructure. Farm Credit works to strengthen rural communities' access to reliable water, power, health care and telecommunications services to help build a more sustainable and equitable future for all.

Diversity, equity and inclusion (DEI)

Farm Credit Bank of Texas fosters a diverse, equitable and inclusive workforce at all levels. This approach is embedded in the company's culture and business practices and starts at the top of its leadership ranks. In 2020, the bank named the first female CEO in the co-op's history. Its executive leadership team is represented by 43% females and 43% diverse leaders. The bank also attracts and develops a diverse group of talented professionals through competitive pay and benefits, professional development opportunities and other assistance.

Governance

As part of the Farm Credit System, the bank maintains a strong standards of conduct program that promotes ethical behavior. As a government-sponsored enterprise regulated by the Farm Credit Administration, the bank also maintains highly transparent and consistent financial reporting programs. We participate in Systemwide workgroups for risk and fraud management, accounting, cybersecurity and other fields that promote accountability and regulatory compliance. And, as a co-op, we're owned by our customers, who have a voice in making decisions that benefit their communities. We also distribute earnings to our stockholders, returning patronage dividends to rural communities and lowering the cost of borrowing.

ESG reporting

The bank is participating in a Systemwide Farm Credit initiative to develop a framework and begin sharing our goals and accomplishments in a way that provides meaningful insights into Farm Credit's sustainable principles.

Local support

With the easing of pandemic restrictions, Farm Credit Bank of Texas employees returned to the office in 2022 and resumed volunteering to support agriculture and nonprofit organizations in our community. Farm Credit Bank of Texas is deeply committed to service. Every act of giving makes a difference. To support employees' personal passions, we also match the first $250 of employee donations to qualified nonprofits. Our employees in action:

- Bank volunteers distributed free seeds, plants, fertilizer and compost to members of Sustainable Food Center of Austin's Spread the Harvest program.
- Our employees donated 12,212 meals through a holiday food drive for Central Texas Food Bank.

Volunteers at Sustainable Food Center of Austin

Staff donations to Central Texas Food Bank

Volunteers at Central Texas Food Bank

One of the volunteers at the Festival Beach Food Forest

- Staffers volunteered their time and muscles at the Central Texas Food Bank, packaging 3,300 pounds of food and providing the equivalent of 2,750 meals.
- Employees volunteered at the Festival Beach Food Forest, planting dozens of leafy greens for harvest in a few months. It's an "edible forest" in downtown Austin that anyone may visit to harvest in-season produce.

Regional support

As a cooperative, we joined with other Farm Credit entities to meet community needs in other ways, too:

- With AgFirst, CoBank and Farmer Mac, donated $325,000 to the American Red Cross for hurricanes Fiona and Ian relief efforts. The hurricanes heavily affected farms, livestock and fall crops in the southeastern and mid-Atlantic regions of the United States and Puerto Rico.
- Joined CoBank and seven associations in our district to pledge a combined $162,500 to support Texas wildfire relief.
- Awarded $25,000 in scholarships to Texas A&M International University in Laredo through our Academy of Honor program in the name of former board member Betty Flores.
- Contributed $20,000 to the College Assistance Migrant Program (CAMP) at St. Edward's University in Austin.
- Joined Farm Credit entities both inside and outside the district in providing support for relief efforts following the school shooting in Uvalde, Texas.

National support

With other Farm Credit banks, we co-hosted a Virtual Farm Credit System Diversity, Equity and Inclusion (DEI) Summit in February 2022.

In addition, we contributed to Farm Credit's national contributions program, which supports a range of initiatives across the nation.

Our Association Customers

We Support Agriculture and Rural Communities

Agriculture is a way of life. It's also a complex business that often requires a significant amount of capital and expert advice, especially if you're just getting started.

That's where Farm Credit comes in. Whether you're running an ag-related business or are producing food and fiber, we're there for you offering financing expertise and reliable credit.

Farm Credit Bank of Texas doesn't make loans directly to farmers and ranchers. Instead, we provide funding and services to our affiliated lending cooperatives in five states so they, in turn, can meet their customer-owners' financing needs.

Here are a few of those customers. For a deeper dive into their stories, scan the accompanying QR codes with your smartphone or tablet.

Birdwell and Clark Ranch ■ Henrietta, Texas

Deborah Clark and Emry Birdwell

Wife and husband Deborah Clark and Emry Birdwell operate an 11,800-acre Northeast Texas ranch where they raise about 5,000 stocker cattle on native pasture. Since buying the Clay County ranch in 2004 with help from Capital Farm Credit, they've proved it's possible to regenerate the land through holistic management practices.

More than 60 species of native grasses, forbs and legumes thrive on the ranch, which is divided into 350 paddocks. Depending on forage growth, they move the herd three to six times a day to fresh pasture. After a paddock is grazed, it rests for at least 75 days. No paddock is grazed more than twice a year.

"This land is a gift we've been given," says rancher Deborah Clark. "It's our responsibility to take care of it — not just to sustain it, but to improve and regenerate it."

Boeuf Prairie Farm ■ Extension, Louisiana

Kody Beavers and Melanie Netterville

Just east of Duck Creek in Franklin Parish, Louisiana, husband and wife Kody Beavers and Melanie Netterville are busy planting corn, soybeans, cotton and a future together in agriculture.

With help from Louisiana Land Bank and an experienced mentor, the young couple uses Beavers' business training and practical farm experience and Netterville's agronomy skills to make their 3,000 acres and Angus cattle operation a success.

"I love waking up every morning and being happy to go to work," Beavers says. "People sometimes say I need a hobby, and I tell them I don't like to do anything but work here. You could say farming is my hobby."

Oliver Farms ■ Winona, Mississippi

Walt Oliver's great-grandfather would hardly recognize the technology on the farm he purchased in 1914.

GPS systems guide machinery with pinpoint precision. Yields and soil fertility are mapped on satellite imagery.

Fields are planted without tilling. And planters and sprayers apply inputs at variable rates.

"I've always been a firm believer that if you're not growing or moving forward, you'll get left behind," says Oliver, who now farms 3,500 acres near Winona, Mississippi, with help from Southern AgCredit.

The practices are paying off in higher yields, lower costs, better soil and less erosion. And it's satisfying to see the fourth-generation farm get better with age — especially with a fifth generation standing by to keep it strong.

Walt Oliver

Full Throttle Farm ■ New Mexico/Texas

Denver Collins

With up to nine hay cuttings a year, Denver Collins can consistently supply hay to New Mexico dairies and back-haul dairy compost for his West Texas farm. The practice not only offsets his trucking costs, but also reduces his commercial fertilizer bill — one of his most expensive inputs — and even helps the environment.

Among his secrets? One is more plentiful water around Balmorhea, Texas, where he moved his farming operation a few years ago with financing help from Ag New Mexico. Another is a steamer that hydrates the hay to counter the dry Trans-Pecos climate. That means he can work through the night and in low-humidity conditions.

"We're able to do so much more with the water here at Balmorhea," he says. "We have a longer growing season here, and we get eight to nine cuttings."

Matt and Penelope Lee ■ Cullman County, Alabama

The Lees wanted to raise their three children in the country and set their own hours.

After searching for a year, they found their dream property — one that could generate enough income to allow them both to quit their jobs and work on the farm. Located in Cullman County, the 56 acres had an existing event venue, six broiler houses, a pecan orchard and a private residence. Their dream happened with the help of Alabama Farm Credit.

A solar array already stood in place next to the poultry houses. The solar panels produce electricity that's sold to a local power company, which offsets power costs for the poultry houses.

"We're able to set our own pace and be with our kids — which is exactly why we bought this farm," Matt says.

Chuck Roberts, Alabama Farm Credit's Cullman branch manager, left, with Matt Lee

Our Leadership

From left: Ralph W. "Buddy" Cortese; Dr. Larry Boleman; M. Philip Guthrie; James F. "Jimmy" Dodson, chair; Linda Floerke, vice chair; Dorothy Nichols; and John L. "Jack" Dailey.

Farm Credit Bank of Texas Board of Directors

Our seven-member board of directors establishes policies for the bank, provides strategic direction, oversees management and ensures the bank operates in a safe and sound manner.

The board members have extensive business and leadership experience in a variety of fields. Five directors are farmers or ranchers, elected by the local lending cooperatives that own the bank.

Dennis Anthony joins board

Bank stockholders elected Dennis Anthony of Friona, Texas, to a three-year term on the board of directors, effective January 1, 2023. He succeeds Ralph "Buddy" Cortese, who retired after 28 years of service on the board.

Anthony owns and operates Anthony Farm & Cattle, which produces stocker cattle, milo, wheat and corn in Parmer and Deaf Smith counties. Prior to his election, he was board chair of AgTexas Farm Credit Services. He serves on the boards of the Parmer County Hospital District and Parmer Medical Center.

Executive Management Team

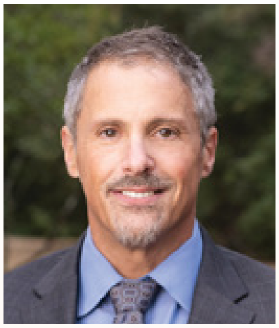
The bank's senior leaders draw on their experience in the Farm Credit System and in commercial banking, finance, information technology and agriculture.

In addition to overseeing day-to-day operations, this seasoned executive team works with the board of directors to establish the bank's business goals and strategies.

Amie Pala,
chief executive officer

Isaac Bennett,
chief credit officer

Brandon Blaut,
chief financial officer

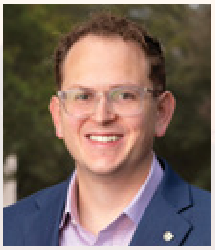


Scott Erlichman,
chief information officer

Nisha Rocap,
chief audit executive

Nanci Tucker,
chief administrative officer
and general counsel

Thomas Ringler



Ringler was named executive vice president, enterprise risk, in January 2023.

He has more than 15 years' experience in risk management, and is responsible for enterprise risk, SOX Compliance, model risk management and business continuity planning. Before joining the bank in 2017, he served in the risk assurance practice of PricewaterhouseCoopers. He helped form the Texas District Internal Controls over Financial Reporting (ICFR) Workgroup, serves on the System's ICFR Workgroup, and is a founding member of the System's Fraud Response Workgroup.

Five-Year Summary of Selected Financial Data

Farm Credit Bank of Texas

(dollars in thousands)	2022	2021	2020	2019	2018
Balance Sheet Data					
Cash, federal funds sold and overnight investments	**$ 443,165**	$ 351,209	$ 336,531	$ 421,950	$ 410,609
Investment securities	**6,654,952**	6,560,239	5,548,167	5,295,143	5,714,638
Loans	**28,264,222**	25,674,558	21,824,201	19,498,293	18,056,686
Less allowance for loan losses	**15,706**	11,869	9,608	11,487	11,974
Net loans	**28,248,516**	25,662,689	21,814,593	19,486,806	18,044,712
Other assets	**643,507**	519,251	528,214	459,917	359,191
Total assets	**$ 35,990,140**	$ 33,093,388	$ 28,227,505	$ 25,663,816	$ 24,529,150
Obligations with maturities of one year or less	**$ 12,032,142**	$ 11,895,213	$ 11,029,378	$ 9,660,506	$ 8,721,295
Obligations with maturities greater than one year	**22,334,635**	19,199,783	15,206,594	14,159,127	14,030,922
Total liabilities	**34,366,777**	31,094,996	26,235,972	23,819,633	22,752,217
Preferred stock	**750,000**	750,000	750,000	700,000	700,000
Capital stock	**471,029**	410,373	359,988	335,262	316,463
Allocated retained earnings	**74,043**	66,490	59,765	52,451	45,685
Unallocated retained earnings	**868,650**	868,365	850,607	808,101	796,478
Accumulated other comprehensive loss	**(540,359)**	(96,836)	(28,827)	(51,631)	(81,693)
Total shareholders' equity	**1,623,363**	1,998,392	1,991,533	1,844,183	1,776,933
Total liabilities and shareholders' equity	**$ 35,990,140**	$ 33,093,388	$ 28,227,505	$ 25,663,816	$ 24,529,150
Statement of Income Data					
Net interest income	**$ 386,162**	$ 367,811	$ 337,978	$ 271,611	$ 256,836
(Provision for credit losses) Loan loss reversal	**(4,580)**	(1,725)	(1,081)	588	(4,671)
Noninterest expense, net	**(111,696)**	(111,495)	(85,760)	(69,245)	(61,635)
Net income	**$ 269,886**	$ 254,591	$ 251,137	$ 202,954	$ 190,530
Financial Ratios (unaudited)					
Rate of return on:					
Average assets	**0.77 %**	0.84 %	0.92 %	0.81 %	0.81 %
Average shareholders' equity	**14.55**	12.17	12.58	10.86	10.85
Net interest income to average earning assets	**1.12**	1.24	1.28	1.10	1.10
Net charge-offs (recoveries) to average loans	**—**	—	0.01	—	—
Total shareholders' equity to total assets	**4.51**	6.04	7.06	7.19	7.24
Debt to shareholders' equity (:1)	**21.17**	15.56	13.17	12.92	12.80
Allowance for loan losses to total loans	**0.06**	0.05	0.04	0.06	0.07
Common equity tier 1 ratio	**8.66**	9.55	9.92	9.91	9.92
Tier 1 capital ratio	**13.42**	15.09	16.07	16.01	16.29
Total capital ratio	**13.50**	15.17	16.15	16.12	16.42
Permanent capital ratio	**13.43**	15.10	16.08	16.03	16.31
Tier 1 leverage ratio	**5.94**	6.37	7.11	7.26	7.39
Unallocated retained earnings (URE) and URE equivalents leverage ratio	**2.50**	2.73	2.99	3.06	3.08
Net Income Distributions					
Preferred stock cash dividends	**$ 46,400**	$ 46,400	$ 54,818	$ 56,450	$ 54,727
Patronage distributions declared					
Cash	**$ 215,648**	$ 183,691	$ 152,562	$ 128,112	$ 110,853
Allocated retained earnings	**7,553**	6,725	7,314	6,766	6,541

Management's Discussion & Analysis

(DOLLARS IN THOUSANDS, EXCEPT AS OTHERWISE NOTED)

The following commentary is a discussion and analysis of the financial position and the results of operations of the Farm Credit Bank of Texas (the Bank or FCBT) for the years ended December 31, 2022, 2021 and 2020. The commentary should be read in conjunction with the accompanying financial statements, notes to the financial statements (notes) and additional sections of this annual report. The accompanying financial statements were prepared under the oversight of the Bank's audit committee.

The Bank, together with its affiliated associations (Associations), are part of the Federally chartered Farm Credit System (System). The district serves Texas, Alabama, Mississippi, Louisiana and most of New Mexico. The Bank provides funding to the District Associations, which, in turn, provide credit to their borrower-shareholders. As of December 31, 2022, the Bank served one Federal Land Credit Association (FLCA), 13 Agricultural Credit Associations (ACAs) and certain Other Financing Institutions (OFIs) which are not part of the System. The FLCA and ACAs are collectively referred to as Associations. See Note 1, "Organization and Operations," to the accompanying financial statements for an expanded description of the structure and operations of the Bank.

The accompanying financial statements exclude financial information of the Bank's affiliated Associations. The Bank and its Associations are collectively referred to as the "Texas District." The Bank separately publishes certain unaudited combined financial information of the Texas District, including a condensed statement of condition and statement of income, which can be found on the Bank's website at *www.farmcreditbank.com*.

Forward-Looking Information

This annual report contains forward-looking statements. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that are difficult to predict. Words such as "anticipates," "believes," "could," "estimates," "may," "should," "will," or other variations of these terms are intended to identify the forward-looking statements. These statements are based on assumptions and analyses made in light of experience and other historical trends, current conditions and expected future developments. However, actual results and developments may differ materially from our expectations and predictions due to a number of risks and uncertainties, many of which are beyond our control. These risks and uncertainties include, but are not limited to:.

- political, legal, regulatory, financial markets, and economic conditions and developments in the United States and abroad;
- economic fluctuations in the agricultural, rural infrastructure, international and farm-related business sectors, as well as in the general economy that can affect the availability of off-farm sources of income;
- weather-related, food safety, disease and other adverse climatic or biological conditions that periodically occur that impact agricultural productivity and income of District borrowers;
- disruption of operations or disclosure of confidential information as a result of cybersecurity incidents;
- changes in United States government support of the agricultural industry and the System as a government-sponsored enterprise, as well as investor and rating agency reactions to events involving the U.S. government and government-sponsored enterprises;
- actions taken by the Federal Reserve System in implementing monetary, government and fiscal policy; and
- credit, interest rate, prepayment, and liquidity risk inherent in lending activities.

Critical Accounting Policies

The financial statements are reported in conformity with generally accepted accounting principles in the United States of America. Our significant accounting policies are critical to the understanding of our results of operations and financial position because some accounting policies require us to make complex or subjective judgments and estimates that may affect the value of certain assets or liabilities. We consider these policies critical because management has to make judgments about matters that are inherently uncertain. For a complete discussion of significant accounting policies, see Note 2, "Summary of Significant Accounting Policies," to the accompanying financial statements. The following is a summary of certain critical policies.

- *Reserves for credit losses* — The Bank records reserves for credit losses, consisting of an allowance for loan losses, reported as a reduction of loans on the Bank's balance sheet, and a reserve for losses on unfunded commitments, including letters of credit and unused loan commitments, which is reported as a liability on the Bank's balance sheet. These reserves are management's best estimate of the amount of probable losses existing in and inherent in our loan portfolio. The allowance for loan losses and reserve for losses on unfunded commitments are increased through provisions for credit losses and loan recoveries and are decreased through loan loss reversals and loan charge-offs. The allowance for loan losses is determined based on a periodic evaluation of the loan portfolio, which includes loans that may be impaired. Each of these individual loans is evaluated based on the borrower's overall financial condition, resources and payment record; the prospects for support from any financially responsible guarantor; and, if appropriate, the estimated net realizable value of any collateral. If the present value of expected future cash flows (or, alternatively, the fair value of the collateral) is less than the recorded investment in the loan (including accrued interest, net deferred loan fees or costs, and unamortized premium or discount), an impairment is recognized by making an addition to the allowance for loan losses with a corresponding charge to the provision for credit losses or by similarly adjusting an existing valuation allowance.

  Effective January 1, 2023, the Bank adopted the current expected credit losses (CECL) accounting guidance that replaced the incurred loss guidance. CECL established a single allowance framework for all financial assets measured at amortized cost, certain off-balance sheet credit exposures, and changed the impairment recognition model for available-for-sale securities. The guidance requires management to consider in its estimate of allowance for credit losses (ACL) relevant historical events, current conditions and reasonable and supportable forecasts that affect the collectability of the assets.

- *Valuation methodologies* — Management applies various valuation methodologies to assets and liabilities that often involve a significant degree of judgment, particularly when liquid markets do not exist for the particular items being valued. Quoted market prices are used when estimating fair values for certain assets for which an observable liquid market exists, such as most investment securities. Third-party valuation services are utilized by management to obtain fair values for the majority of the Bank's investments. Management utilizes significant estimates and assumptions to value items for which an observable liquid market does not exist. Examples of these items include impaired loans, other postretirement benefit obligations, and certain derivative and other financial instruments. These valuations require the use of various assumptions, including, among others, discount rates, repayment rates, cash flows, default rates, costs of servicing and liquidation values. The use of different assumptions could produce significantly different results, which could have material positive or negative effects on the Bank's results of operations.
- *Pensions and retirement plans* — The Bank and its affiliated Associations participate in the Texas District's defined benefit retirement plan (DB Plan). The DB Plan is noncontributory, and benefits are based on salary and years of service. As of January 1, 1996, the Bank and Associations froze participation in their defined benefit pension plan and offered defined contribution retirement plans to all employees hired subsequent to the freeze. The structure of the Texas District's single-employer DB Plan is characterized as multiemployer for participating employers' accounting purposes, since neither the assets, liabilities nor cost of any DB Plan is segregated or separately accounted for by participating employers (Bank and Associations). No portion of any surplus asset is available to any participating employer. Participating employers are jointly and severally liable for the DB Plan obligations. Upon withdrawal or termination of their participation in the DB Plan, a participating employer must pay all associated costs of its withdrawal from the DB Plan, including its unfunded liability (the difference between replacement annuities and the withdrawing employer's share of allocated DB Plan assets). As a result, participating employers of the DB Plan only recognize as cost the required contributions for the period and a liability for any unpaid contributions required for the period of their financial statements. DB Plan obligations, assets and the components of annual benefit expenses are recorded and reported upon combination only. The Bank records current contributions to the DB Plan as an expense in the current year.

  The liability and expense for other postemployment benefits is determined actuarially based on certain assumptions, including discount rate and mortality assumptions. The discount rate is used to determine the present value of our future benefit obligations. The Bank selected the discount rate by reference to the Aon AA Only Above-Median Yield Curve, actuarial analyses and industry norms. The Aon yield curves are determined based on actual corporate bond yields for bonds rated AA as of the measurement date. The discount rate at December 31, 2022, was 5.20% compared to 3.15% at December 31, 2021 and 2.80% at December 31, 2020.

OVERVIEW

General

The Bank's loan portfolio totaled $28.26 billion at December 31, 2022, a 10.09% increase from the prior year. The increase in the Bank's loan portfolio was due to an increase in the Bank's direct notes to Associations and an increase in the Bank's capital markets loan portfolio. The Bank's net income for 2022 was $269.9 million, an increase of $15.3 million compared to 2021. The increase in net income was the result of an $18.4 million increase in net interest income and a $1.4 million decrease in operating expenses, partially offset by a $2.9 million increase in the provision for credit losses and a $1.6 million decrease in noninterest income. The increase in net interest income was the result of a $4.79 billion increase in average earning assets, partially offset by a decrease of 13 basis points in the Bank's net interest rate spread to 1.05%. The decrease in net interest spread was due to an increase in the cost of debt of 60 basis points, partially offset by an increase in yields on average interest earning assets of 47 basis points.

Funding

During 2022, the System continued to have reliable access to the debt capital markets to support its mission of providing credit to farmers, ranchers and other eligible borrowers. The Federal Reserve raised the Federal funds rate seven times in 2022 for a total year to date increase of 425 basis points. As a result, funding costs for all Systemwide debt rose in 2022 due to higher Treasury yields, widening spreads and increased volatility.

Service Provider

During 2022, the Bank, in its role as an information technology provider to its affiliated Associations, continued to modernize and roll out its service offering branded FarmView. FarmView is an integrated suite of products for managing the full lending relationship. The suite of products includes sales management, origination, credit analysis, loan accounting, integrated cash management and document management solutions. The FarmView platform provides benefits directly to the converted Associations as well as their underlying borrowers. During 2022, the Bank converted its two largest Associations from their legacy platforms and is focused on training and preparing for additional conversion activities in 2023.

Conditions in the Texas District

Throughout the COVID-19 pandemic, the Bank continued to fulfill its mission to support agriculture and rural communities by providing access to reliable and consistent credit. Demand for Texas District Associations' retail loans has been historically high, leading to elevated growth across the District for most of 2022. However, loan growth began to moderate in the latter part of 2022 due to the rising interest rate environment. Macroeconomic uncertainty, as well as ongoing supply chain disruptions and fluctuating commodity markets, are likely to lead to volatility in credit quality in future periods.

The Consumer Price Index for All Urban Consumers increased by 6.5% for the year ending December 2022, down from 7.0% for the same period in 2021 and from a peak of 9.1% reached in June 2022. The Federal Open Market Committee (FOMC) increased the target Federal funds rate by a total of 425 basis points in 2022, including four consecutive 75 basis point increases in June, July, September and November. As of February 13, 2023, the range of the Federal funds target rate is 4.50 – 4.75%, including the latest 25 basis point increase in early February 2023. According to public remarks, the FOMC continues to be strongly committed to returning inflation to its 2.0% long-run objective.

On January 26, the U.S. Bureau of Economic Analysis (BEA) released its advanced estimate of real gross domestic product (GDP) for the fourth quarter of 2022. After two consecutive quarters of negative growth during the first half of 2022, the U.S. economy expanded at annualized rates of 3.2% in the third quarter and 2.9% in the fourth quarter. The increase in the fourth quarter primarily reflected increases in inventory investment and consumer spending that were partly offset by a decrease in housing investment. According to the International Monetary Fund's latest World Economic Outlook released on January 30, 2023, U.S. real GDP growth is estimated to be 1.4% in 2023 and 1.0% in 2024. Within the Texas District, the BEA estimated that third quarter 2022 annualized real GDP growth rates ranged from a low of -0.7% in Mississippi to a high of 8.2% in Texas. Fourth quarter GDP growth rates per state are scheduled to be released on March 31, 2023.

The U.S. Bureau of Labor Statistics (BLS) indicated that the U.S. unemployment rate decreased month-over-month to 3.5% in December 2022 from 3.6% in November and down from 3.9% in December 2021. The U.S. unemployment rate declined slightly to 3.4% in January 2023. The December state unemployment rates in the Texas District ranged from a low of 2.8% in Alabama to a high of 4.0% in Mississippi.

The West Texas Intermediate (WTI) crude oil futures price (front-month) decreased during the fourth quarter of 2022 from an average of about $91 per barrel in the third quarter to an average of about $83 per barrel. In the February 2023 edition of the Short-Term Energy Outlook, the U.S. Energy Information Administration estimated that the monthly average WTI spot price would be about $78 per barrel in 2023 and nearly $72 per barrel in 2024.

In February 2023, the U.S. Department of Agriculture (USDA) released its updated farm income forecast. Nominal net farm income is expected to have set a record high at about $162.7 billion in calendar year 2022, up 15.5% year over year (YOY). However, farm income is forecasted to decrease by 15.9% in 2023. Total nominal production expenses are forecasted to continue increasing by 4.1% in 2023 to about $459.53 billion, after increasing by 18.5% in 2022. Interest expenses and livestock/poultry purchases are expected to increase in 2023, while spending on feed and fuel/oil is expected to decline YOY. Farm sector assets are forecasted to increase by 5.2% in 2023 due to expected increases in farm real estate assets. Similarly, equity is forecasted to increase by 5.0% in 2023. After improving in 2021 and 2022, the U.S. farm sector debt-to-asset ratio is estimated to sightly deteriorate YOY from 13.1% in 2022 to 13.2% in 2023.

According to USDA's February 2023 World Agricultural Supply and Demand Estimates (WASDE) report, average farm prices for corn, wheat, and soybeans are projected to increase by about 11.7%, 18.0% and 7.5%, respectively, YOY during the 2022-23 marketing year, while the average farm price for upland cotton is projected to decline by 8.4 cents per pound, or 9.2%. Steer, broiler, and turkey prices are estimated to have experienced double-digit increases in 2022, while barrow and gilt prices are estimated to have risen by an average of nearly 5.8%. Further increases in prices are projected for steers and turkeys in 2023, while broiler and barrow and gilt prices are projected to decline. USDA estimates that all-milk prices averaged nearly $25.6 per hundredweight in 2022, up about $7.0 per hundredweight, or 37.9%, compared to 2021. Milk prices are anticipated to moderate in 2023 but are projected to remain above $20.0 per hundredweight. Due to increased supply and reduced demand, lumber prices fell precipitously in 2022. Front-month random length lumber futures prices declined by about 67.0% YOY in 2022. Subsequently, lumber futures prices have continued to be historically volatile, increasing by nearly 37.0% in January 2023 before declining by more than 20.0% through the first half of February.

Lack of adequate precipitation and soil moisture was a concern for agricultural producers across several regions of the country during 2022, as the year was among the driest on record for many states, such as California, Nebraska, Nevada and Texas. However, drought conditions improved notably across the West due to above-average precipitation in January 2023. Recent rainfall across portions of the central U.S., including the Texas District, has brought short-term relief to some areas, but drought conditions have continued to persist through mid-February 2023.

Agricultural producers and processors were negatively affected by several factors in 2022, including volatile commodity prices, elevated production costs, geopolitical conflicts, economic uncertainty, and weather-related challenges. However, the Texas District loan portfolio remained resilient and well-supported by industry diversification and conservative advance rates. Additionally, a high percentage of the District's borrowers primarily rely on non-farm sources of income to repay their loans.

RESULTS OF OPERATIONS

Net Income

The Bank's net income of $269.9 million for the year ended December 31, 2022, reflects an increase of 6.01% over 2021, while 2021 net income of $254.6 million increased by 1.38% from 2020. The return on average assets was 0.77% for the year ended December 31, 2022, compared to the return on average assets of 0.84% and 0.92% for the years ended December 31, 2021 and December 31, 2020, respectively.

Changes in the major components of net income for the referenced periods are outlined in the table below and in the discussion following:

	Year Ended December 31,	
	2022 vs. 2021	2021 vs. 2020
Net income (prior period)	**$ 254,591**	$ 251,137
Increase due to:		
Increase (decrease) in interest income	**264,173**	(55,819)
Increase (decrease) in interest expense	**245,822**	(85,652)
Increase in net interest income	**18,351**	29,833
Increase in provision for credit losses	**(2,855)**	(644)
(Decrease) increase in noninterest income	**(1,634)**	842
Decrease (increase) in noninterest expense	**1,433**	(26,577)
Total change in net income	**15,295**	3,454
Net income	**$ 269,886**	$ 254,591

Discussion of the changes in components of net income is included in the following narrative.

Interest Income

Total interest income for the year ended December 31, 2022, was $914.0 million, an increase of $264.2 million, or 40.65%, compared to 2021. Total interest income for the year ended December 31, 2021, was $649.8 million, a decrease of $55.8 million, or 7.91%, compared to 2020.

The increase for 2022 was primarily due to a $4.79 billion increase in average interest earning assets as well as a 47 basis point increase in the yield on average interest earning assets. The decrease for 2021 was due primarily to a 48 basis point decrease in the average yield, offset by a $3.22 billion increase in average earning assets.

The following table illustrates the impact that volume and yield changes had on interest income over these periods:

	Year Ended December 31,	
	2022 vs. 2021 [(1)]	2021 vs. 2020 [(1)]
Increase in average earning assets	**$ 4,793,399**	$ 3,218,205
Average yield (prior year)	**2.19%**	2.67%
Interest income variance attributed to change in volume	**104,684**	85,926
Average earning assets (current year)	**34,408,563**	29,615,163
Increase (decrease) in average yield	**0.47%**	(0.48)%
Interest income variance attributed to change in yield	**159,489**	(141,745)
Net change in interest income	**$ 264,173**	$ (55,819)

(1) The change in interest income 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.

Interest Expense

Total interest expense for the year ended December 31, 2022, was $527.9 million, an increase of $245.8 million, or 87.16%, compared to the same period of 2021. Total interest expense for the year ended December 31, 2021, was $282.0 million, a decrease of $85.7 million, or 23.30%, compared to the same period of 2020. The increase in 2022 was due primarily to the effects of a 60 basis point increase in the average cost of debt and an increase of $5.08 billion in interest-bearing liabilities. The decrease in 2021 was due primarily to the effects of a 47 basis point decrease in the average cost of debt, offset by a $2.97 billion increase in average interest-bearing liabilities. Average interest-bearing liabilities increased as a result of the growth in average interest-earnings assets.

During 2022, 2021 and 2020, the Bank reduced its interest expense by calling and replacing debt totaling $150.0 million, $3.98 billion and $16.18 billion, respectively. During the years ended December 31, 2022, 2021 and 2020, the Bank recognized concession expense of $174 thousand, $7.2 million and $22.2 million, respectively.

The following table illustrates the impact that volume and rate changes had on interest expense over these periods:

	Year Ended December 31,	
	2022 vs. 2021 [(1)]	2021 vs. 2020 [(1)]
Increase in average interest-bearing liabilities	**$ 5,080,615**	$ 2,972,027
Average rate (prior year)	**1.01%**	1.48%
Interest expense variance attributed to change in volume	**51,206**	43,982
Average interest-bearing liabilities (current year)	**32,884,101**	27,803,486
Increase (decrease) in average rate	**0.60%**	(0.47)%
Interest expense variance attributed to change in rate	**194,616**	(129,634)
Net change in interest expense	**$ 245,822**	$ (85,652)

(1) The change in interest 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

Net interest income, the excess of interest income over interest expense, increased by $18.4 million from 2021 to 2022, and increased by $29.8 million from 2020 to 2021. The increase in 2022 was due to the effects of a $4.79 billion increase in average interest earning assets, partially offset by a 13 basis point decrease in the interest rate spread, which is the difference between the average rate received on interest-earning assets and the average rate paid on interest-bearing debt. The increase in average interest earning assets included growth in direct notes to Associations, the Bank's capital markets loan portfolio and the investment portfolio.

Net interest income in 2021 was $29.8 million greater than 2020. The increase in 2021 was due to the effects of a $3.22 billion increase in average interest-earning assets and a 1 basis point decrease in the interest rate spread. The Bank's increase in average earning assets included growth in direct notes to Texas District Associations and the Bank's capital markets loan portfolio.

ANALYSIS OF NET INTEREST INCOME

	2022		2021		2020	
	Average Balance	**Interest**	Average Balance	Interest	Average Balance	Interest
Loans	**$ 27,573,140**	**$ 793,581**	$ 23,469,353	$ 577,290	$ 20,613,853	$ 610,907
Investments	**6,835,423**	**120,433**	6,145,810	72,551	5,783,105	94,753
Total earning assets	**34,408,563**	**914,014**	29,615,163	649,841	26,396,958	705,660
Interest-bearing liabilities	**32,884,101**	**527,852**	27,803,486	282,030	24,831,459	367,682
Impact of capital	**$ 1,524,462**		$ 1,811,677		$ 1,565,499	
Net Interest Income		**$ 386,162**		$ 367,811		$ 337,978

	Average Yield	Average Yield	Average Yield
Yield on loans	**2.88%**	2.46%	2.96%
Yield on investments	**1.76%**	1.18%	1.64%
Yield on earning assets	**2.66%**	2.19%	2.67%
Cost of interest-bearing liabilities	**1.61%**	1.01%	1.48%
Interest rate spread	**1.05%**	1.18%	1.19%
Impact of capital	**0.07%**	0.06%	0.09%
Net interest income/average earning assets	**1.12%**	1.24%	1.28%

Provision for Credit Losses

The Bank's provision for credit losses for 2022 was $4.6 million, an increase of $2.9 million from the $1.7 million provision for credit losses in 2021. The provision for credit losses for the twelve months ended December 31, 2022 primarily reflects an increase in specific reserves for two borrowers in the agribusiness sector as well as increases in general reserves due to isolated credit deterioration and loan growth.

The Bank's provision for credit losses for 2021 was $1.7 million, an increase of $644 thousand from the $1.1 million provision for credit losses recorded for 2020. The provision for credit losses was mainly driven by $1.3 million in reserves for credit deterioration on a limited number of borrowers within the electric utility sector. In addition to the specific reserves, the Bank reversed $1.5 million associated with the COVID-19 reserves and added $1.9 million in general provision due to loan growth and some credit deterioration on select loans in the agribusiness sector.

The Bank's provision for credit losses for 2020 was $1.1 million, an increase of $1.7 million from the $588 thousand loan loss reversal recorded for 2019. The provision for credit losses reflected an increase in qualitative general reserves related to the participation loans purchased portfolio due to uncertainty from the COVID-19 pandemic offset by a reversal of $1.6 million related to the payoff of two nonperforming loans in 2020.

Noninterest Income

Noninterest income for the year ended December 31, 2022, was $46.4 million, a decrease of $1.6 million, or 3.40%, compared to 2021. The decrease reflects lower prepayment fees as the loan prepayment rate has decreased from the rising interest rate environment, partially offset by higher patronage income.

Noninterest income for the year ended December 31, 2021, was $48.0 million, an increase of $842 thousand, or 1.78%, compared to 2020. The increase was primarily due to an increase of $4.0 million in net gains on investment valuations in Rural Business Investment Companies (RBICs) and a $1.5 million increase in fees for loan-related services during 2021, partially offset by a decrease in other income.

Noninterest income for the year ended December 31, 2020, was $47.2 million, a decrease of $2.0 million, or 4.15%, compared to 2019. The decrease was primarily due to the gain on sale of investments in 2019, partially offset by a $7.9 million increase in fees for loan-related services in 2020.

Noninterest Expense

Noninterest expense totaled $158.1 million for 2022, a decrease of $1.4 million, or 0.90%, from 2021. The decrease reflects lower professional fees of $8.1 million, partially offset by an increase of $6.9 million in Farm Credit System Insurance Corporation (FCSIC) premiums due to a premium rate of 20 basis points and increased outstanding debt.

Noninterest expense totaled $159.5 million for 2021, an increase of $26.6 million, or 19.99%, from 2020. The increase primarily consisted of a $7.0 million increase in salaries and employee benefits expense, a $6.8 million increase in FCSIC insurance premiums and a $3.7 million increase in occupancy and equipment due to computer software and maintenance expense and related depreciation.

Noninterest expense totaled $133.0 million for 2020, an increase of $14.5 million, or 12.21%, from 2019. The increase was related to a $5.9 million increase in salaries and employee benefits expense and an increase in occupancy and equipment expense of $5.8 million due to a $5.4 million increase in maintenance and depreciation expense on software.

Operating expense (salaries and employee benefits, occupancy and equipment, FCSIC premiums, and other operating expenses) statistics are set forth below for each of the three years ended December 31:

	2022	2021	2020
Excess of net interest income over operating expense	**$ 228,056**	$ 208,272	$ 205,016
Operating expense as a percentage of net interest income	**40.9 %**	43.4 %	39.3 %
Operating expense as a percentage of net interest income and noninterest income	**36.6**	38.4	34.5
Operating expense as a percentage of average loans	**0.57**	0.68	0.65
Operating expense as a percentage of average earning assets	**0.46**	0.54	0.50

CORPORATE RISK PROFILE

Overview

The Bank is in the business of funding and participating in agricultural and other loans which requires us to take certain risks in exchange for compensation for the risks undertaken. Management of risks inherent in our business is essential for our current and long-term financial performance. Our goal is to mitigate risk, where appropriate, and to properly and effectively identify, measure, price, monitor and report risks in our business activities.

The major types of risk to which we have exposure are:

- *structural risk* — risk inherent in our business and related to our structure (an interdependent network of lending institutions);
- *credit risk* — risk of loss arising from an obligor's failure to meet the terms of its contract or failure to perform as agreed;
- *interest rate risk* — risk that changes in interest rates may adversely affect our operating results and financial condition;
- *liquidity risk* — risk of loss arising from the inability to meet obligations when they come due without incurring unacceptable losses;
- *operational risk* — risk of loss resulting from inadequate or failed internal processes or systems, errors by employees, external cyber risk and data security or external events;
- *reputational risk* — risk of loss resulting from events, real or perceived, that shape the image of the Bank, the System or any System entities, including the impact of investors' perceptions about agriculture, the reliability of district or System financial information, or the overt actions of any district or System institution; and
- *political risk* — risk of loss of support for the System and agriculture by the Federal and state governments.

Structural Risk Management

Structural risk results from the fact that the Bank, along with its related Associations, is part of the Farm Credit System (System), which is composed of banks and associations that are cooperatively owned, directly or indirectly, by their borrowers. While System institutions are financially and operationally interdependent, this structure at times requires action by consensus or contractual agreement. Further, there is structural risk in that only the banks are jointly and severally liable for the payments of Systemwide debt securities. Although capital at the association level reduces a bank's credit exposure with respect to its direct loans to its affiliated associations, this capital may not be available to support the payment of principal and interest on Systemwide debt securities.

In order to mitigate this risk, the System utilizes two integrated contractual agreements — the Amended and Restated Contractual Interbank Performance Agreement (CIPA), and the Third Amended and Restated Market Access Agreement (MAA). Under provisions of the CIPA, a score (CIPA score) is calculated that measures the financial condition and performance of each district using various ratios that take into account the District's and Bank's capital, asset quality, earnings, interest-rate risk and liquidity. The CIPA score is then compared against the agreed-upon standard of financial condition and performance that each district must achieve and maintain. The measurement standard established under the CIPA is intended to provide an early-warning mechanism to assist in monitoring the financial condition of each district. The performance standard under the CIPA is based on the average CIPA score over a four-quarter period.

The MAA is designed to provide for the timely identification and resolution of individual bank financial issues and establishes performance criteria and procedures for the banks that provide operational oversight and control over a bank's access to System funding.

As required by the MAA, the banks and the Federal Farm Credit Banks Funding Corporation (Funding Corporation) undertake a periodic formal review of the MAA to consider whether any amendments are appropriate. In connection with the most recent review, the banks and the Funding Corporation agreed to enter into the Third Amended and Restated MAA, which was effective on January 1, 2017.

Periodically, the CIPA model and the MAA performance criteria are reviewed to take into consideration current performance standards in the financial services industry or regulatory changes. As a result of the changes to regulatory capital ratio requirements that became effective January 1, 2017, the performance criteria set forth in the MAA are as follows:

- the defined CIPA scores,
- the tier 1 leverage ratio of a bank, and
- the total capital ratio of a bank.

A bank's tier 1 leverage ratio is tier 1 capital (primarily unallocated retained earnings, the bank's common stock and preferred stock less certain regulatory required deductions) divided by non-risk adjusted assets. A bank's total capital ratio is the sum of the bank's common equity tier 1 capital, additional tier 1 capital and tier 2 capital elements, minus regulatory deductions and adjustments, divided by risk-adjusted assets.

If a bank fails to meet the above performance criteria, it will be placed into one of three categories. Each category gives the other System banks progressively more control over a bank that has declining financial performance under the MAA performance criteria. A "Category I" bank is subject to additional monitoring and reporting requirements; a "Category II" bank's ability to participate in issuances of Systemwide debt securities may be limited to refinancing maturing debt obligations; and a "Category III" bank may not be permitted to participate in issuances of Systemwide debt securities. A bank exits these categories by returning to compliance with the agreed-upon performance criteria.

The criteria for the tier 1 leverage ratio and the total capital ratio are:

	Tier 1 Leverage Ratio	Total Capital Ratio
Category I	<5.0%	<10.5%
Category II	<4.0%	<8.0%
Category III	<3.0%	<7.0%

During the year ended December 31, 2022, all System banks met the agreed-upon standards for the tier 1 leverage ratio and total capital ratio required by the MAA. As of December 31, 2022, all System banks met the agreed-upon standard of financial condition and performance required by the CIPA. During the year ended December 31, 2022, the System banks met the defined CIPA score required by the MAA.

Credit Risk Management

Credit risk arises from the potential inability of an obligor to meet its repayment obligation and exists in our outstanding loans, letters of credit, unfunded loan commitments, investment portfolio and derivative counterparty credit exposures. We manage credit risk associated with our lending activities through an assessment of the credit risk profile of individual obligors. We set our own underwriting standards and lending policies, approved by the Board of Directors, that provide direction to loan officers. Underwriting standards include, among other provisions, an expectation that lending decisions include evaluations of:

- *character* — borrower integrity and credit history;
- *capacity* — repayment capacity of the borrower based on cash flows from operations or other sources of income;
- *collateral* — protects the lender in the event of default and represents a potential secondary source of loan repayment;
- *capital* — ability of the operation to survive unanticipated risks; and
- *conditions* — structure of the transaction, including limitations on usage of loan funds, financial covenants and monitoring requirements.

The retail credit risk management process begins with an analysis of the borrower's credit history, repayment capacity and financial position. Repayment capacity focuses on the borrower's ability to repay the loan based on cash flows from operations or other sources of income, including non-farm income. Real estate loans with terms greater than 10 years must be secured by first liens on real estate. As required by Farm Credit Administration regulations, each institution that makes loans on a secured basis must have collateral evaluation policies and procedures.

This credit risk-rating process uses a two-dimensional loan rating structure, incorporating a 14-point probability of default rating scale to identify and track the probability of borrower default and a separate 4-point scale addressing loss given default. The 14-point probability of default rating scale provides for nine “acceptable” categories, one “other assets especially mentioned” (OAEM) category, two “substandard” categories, one “doubtful” category and one “loss” category. The loss given default scale establishes ranges of anticipated principal loss if the loan defaults. This process incorporates objective and subjective criteria to identify inherent strengths, weaknesses and risks in a particular relationship. Existing borrower relationships are periodically reviewed to ensure that the assigned probability of default and loss given default ratings appropriately reflect the risk of the transaction.

By buying and selling loans or interests in loans to or from other institutions within the System or outside the System, we limit our exposure to individual borrowers and industries. This also allows us to manage growth and capital, and to improve geographic diversification.

Portfolio credit risk is also evaluated with the goal of managing the concentration of credit risk. Concentration risk is reviewed and measured by industry, commodity, geography and customer limits.

Loans

The Bank’s loan portfolio consists of direct notes receivable from Texas District Associations and qualifying other financing institutions (OFIs), and the Bank’s capital markets loan portfolio. See Note 1, “Organization and Operations,” Note 2, “Summary of Significant Accounting Policies,” and Note 4, “Loans and Reserves for Credit Losses,” to the accompanying financial statements for further discussions.

The Bank’s capital markets loan portfolio predominantly includes participations, syndications and purchased whole loans, along with other financing structures within our lending authorities. The Bank also refers to the capital markets portfolio as participations purchased. In addition to purchasing loans from our Associations, which may exceed their hold limits, the Bank seeks the purchase of participations and syndications originated outside of the Texas District’s territory by other System institutions, commercial banks and other lenders. Our capital markets loan portfolio depends to a significant degree on our relationships with other Farm Credit institutions. These loans may be held as earning assets of the Bank or sub-participated to the associations or to other System entities.

Gross loan volume of $28.26 billion at December 31, 2022 reflected an increase of $2.59 billion, or 10.09%, from December 31, 2021. The increase in the loan portfolio from 2021 to 2022 was attributable to $1.35 billion increase in the Bank's capital markets loan portfolio and a $1.24 billion increase in the Bank’s direct loans to Associations and OFIs. Loan volume of $25.67 billion at December 31, 2021, reflected an increase of $3.85 billion, or 17.64%, from December 31, 2020. The increase in the loan portfolio from 2020 to 2021 was mainly attributable to a $3.28 billion increase in the Bank’s direct loans to associations and OFIs and a $567.6 million increase in the Bank's capital market loan portfolio.

The Bank has purchased loan participations and Federal Agricultural Mortgage Corporation (Farmer Mac) guaranteed agricultural mortgage-backed securities (AMBS) from associations in Capitalized Participation Pool (CPP) program transactions. CPP purchases result in pay downs on the associations’ direct notes at the time of purchase. There were no CPP loan purchases for the year ended December 31, 2022. CPP loans held at December 31, 2022 totaled $104.7 million and were included in loans on the balance sheet. The balance of the Farmer Mac AMBS CPP was $10.3 million at December 31, 2022, and is included in investment securities on the balance sheet.

The Bank also purchased loans from Associations in Non-Capitalized Participation Pool (NCPP) program transactions. NCPP purchases result in pay downs on the Associations’ direct notes at the time of purchase. NCPP loan purchases for the year ended December 31, 2022 totaled $50.8 million with $1.0 million in net stock retirements. NCPP loans held at December 31, 2022 totaled $171.4 million and are included in loans on the balance sheet.

The following table presents each loan category as a percentage of the total loan portfolio:

	December 31,		
	2022	2021	2020
Direct notes receivable from Associations and OFIs	**69.2 %**	71.3 %	68.9 %
Participations purchased	**30.8**	28.7	31.1
Total	**100.0 %**	100.0 %	100.0 %

The following table discloses the credit quality of the Bank’s loan portfolio:

	December 31,		
	2022	2021	2020
Acceptable	**99.4 %**	99.1 %	99.1 %
OAEM (special mention)	**0.3**	0.7	0.9
Substandard/Doubtful	**0.3**	0.2	—
Total	**100.0 %**	100.0 %	100.0 %

The acceptable loans credit quality classification (as a percentage of total loans) as of December 31, 2022 increased slightly as compared to December 31, 2021. Acceptable loans credit quality classification (as a percentage of total loans) as of December 31, 2021 was the same as compared to December 31, 2020.

The decrease in special mention loans credit quality classification (as a percentage of total loans) as of December 31, 2022 compared to December 31, 2021 was mainly due to improvements in the underlying performance of loans in this classification. The slight increase in substandard/doubtful credit quality is primarily due to isolated credit deterioration within the agribusiness sector.

The Bank’s capital markets loan portfolio’s concentration of credit risk in various commodities is shown in the following table at December 31:

	Percentage of Portfolio		
Commodity Group	**2022**	2021	2020
Rural electric	**15 %**	16 %	18 %
Livestock	**11**	12	10
Dairy	**9**	10	9
Communications	**7**	7	6
Miscellaneous food products	**7**	6	5
Grain mill products	**6**	6	7
Meat products	**5**	5	5
Beverages	**4**	3	2
Timber	**3**	3	4
Other	**33**	32	34
Total	**100 %**	100 %	100 %

The diversity of states underlying the Bank's capital markets loan portfolio is reflected in the following table:

	December 31,		
States**	**2022**	2021	2020
Texas	**16 %**	19 %	17 %
California	**8**	7	6
Illinois	**7**	5	6
Pennsylvania	**4**	4	3
Colorado	**4**	4	3
All other states	**61**	61	65
Total	**100 %**	100 %	100 %

** In all presentations of geographic distribution in this annual report, the distribution is based on the state in which the borrower is headquartered and may not be representative of their operations or business activities.

In September 2022, the Bank sold an additional $500 million in direct notes to another System bank. The balance of the Bank's Association direct notes sold to another System bank was $4.35 billion at December 31, 2022 and $3.85 billion at both December 31, 2021 and 2020.

Association Direct Notes and Association Loan Portfolios

The Bank's loan portfolio consisted of 69.2% of direct note receivables from Associations and OFIs at December 31, 2022. Terms of direct notes to Associations and OFIs are specified in a separate general financing agreement between each Association and OFI and the Bank, and all assets of each Association secure the direct notes to the Bank. Each Association is a Federally chartered instrumentality of the United States and is regulated by the Farm Credit Administration (FCA). See Note 1, "Organization and Operations," to the accompanying financial statements for further discussion of the Farm Credit System.

Direct notes from the Associations located in Texas represent the majority of the Bank's direct notes from all Associations. However, these notes are collateralized by a diverse loan portfolio, both in terms of geography and underlying commodities, which helps to mitigate the concentration risk often associated with one state or locale. Associations in each state have commodity diversification that is being augmented by purchases of loan participations.

The credit exposure of the Bank's loans to Associations, which are evidenced by direct notes with full recourse, is dependent on the Associations' creditworthiness and the ability of their borrowers to repay loans made to them. The credit risk to the Bank is mitigated by diversity in the Associations' loan portfolios in terms of underlying collateral and repayment sources, geography and range of individual loan amounts. In addition, the risk-bearing capacities of the Associations are assessed quarterly by the Bank. Each Association maintains an allowance for loan losses determined by its management and is capitalized to serve its unique market area. Associations are subject to FCA regulations concerning minimum capital, loan underwriting and portfolio management, and are audited annually by independent auditors. In addition, Associations are required by the general financing agreement with the Bank to provide copies of their risk-based internal credit review reports and other audit/examination reports. The Associations are required to maintain a risk-based internal credit review program including procedures addressing: reviewer qualification and independence, review frequency, accuracy of risk ratings, credit administration, regulatory compliance, scope selection, documentation of audit committee approval of reviewers and audit committee review of the internal control reports. The Bank completes an annual risk-based review of Association Portfolio loans to verify the accuracy of assigned risk ratings and, in certain cases, the appropriateness of lending and credit administration practices. As of December 31, 2022, all Associations were in compliance with their general financing agreements with the Bank.

Loans held by the combined Associations totaled $27.66 billion at December 31, 2022, an increase of $1.88 billion, or 7.29%, from loan volume at December 31, 2021, due to the low interest rate environment and strong loan demand in the chartered territories of the Texas District. In 2021 and 2020, Association loan volume increased by $3.71 billion and $2.30 billion, respectively.

The combined Associations' concentration of credit risk in various agricultural commodities is shown in the following table at December 31:

	Percentage of Portfolio		
Commodity Group	**2022**	2021	2020
Livestock	**40 %**	40 %	38 %
Crops	**16**	16	17
Timber	**7**	8	9
Cotton	**4**	5	5
Dairy	**4**	4	4
Poultry	**3**	4	5
Rural home	**1**	1	1
Other	**25**	22	21
Total	**100 %**	100 %	100 %

The diversity of states underlying the combined Associations' loan portfolio is reflected in the following table:

	December 31,		
States	**2022**	2021	2020
Texas	**64 %**	66 %	64 %
Mississippi	**7**	7	8
Alabama	**8**	8	9
Louisiana	**4**	4	4
All other states	**17**	15	15
Total	**100 %**	100 %	100 %

The combined Associations' loans by size are shown in the following table:

Size (thousands)	**December 31, 2022**
<$250	**15 %**
$250-$500	**12**
$500-$1,000	**14**
$1,000-$5,000	**32**
$5,000-$25,000	**23**
$25,000-$100,000	**4**
Total	**100 %**

Credit quality at the Associations remained strong, with loans classified as "acceptable" or "other assets especially mentioned" (special mention) as a percentage of total loans of 99.2%, 99.1% and 98.7% at December 31, 2022, 2021 and 2020, respectively. Association nonearning assets as a percentage of total loans at December 31, 2022, were 0.56%, compared to 0.44% and 0.59% at December 31, 2021 and 2020, respectively.

From the perspective of the Texas District, which is the Bank and its related Associations collectively, the loan portfolio consists only of retail loans. The diversity of the commodity types and income sources supporting Texas District loan repayment further mitigates credit risk at the Bank.

The following table illustrates the Texas District's loan portfolio by major commodity segments at December 31:

	Percentage of Portfolio		
Commodity Group	**2022**	2021	2020
Livestock	**33 %**	33 %	31 %
Crops	**14**	14	14
Timber	**6**	7	8
Dairy	**6**	6	5
Cotton	**3**	4	4
Poultry	**3**	3	4
Rural home	**1**	1	1
Other	**34**	32	33
Total	**100 %**	100 %	100 %

The following table reflects the Texas District's geographic distribution, by major states, at December 31:

	Percentage of Portfolio		
States	**2022**	2021	2020
Texas	**53 %**	55 %	53 %
Alabama	**6**	7	7
Mississippi	**6**	6	6
Louisiana	**4**	4	4
California	**4**	3	3
All other states	**27**	25	27
Total	**100 %**	100 %	100 %

High-Risk Assets

Nonperforming loan volume, also referred to as impaired loans, is composed of nonaccrual loans, accruing formally restructured loans (TDR), and loans 90 days past due still accruing interest. High-risk assets consisted of impaired loans and other property owned (OPO).

The following table discloses the components of the Bank's high-risk assets at December 31:

	2022	2021	2020
Nonaccrual loans	**$ 29,994**	$ 5,753	$ 1,341
Accruing formally restructured loans	**2,195**	2,280	2,369
Loans past due 90 days or more and still accruing interest	**—**	—	—
Total impaired loans	**32,189**	8,033	3,710
Total high-risk assets	**$ 32,189**	$ 8,033	$ 3,710

High-risk assets at December 31, 2022 increased by $24.2 million, or 300.71%, from $8.0 million at December 31, 2021. At December 31, 2022, $25.4 million, or 78.94%, were current as to principal and interest, compared to $6.0 million, or 75.13% at December 31, 2021. There were no OPO balances at December 31, 2022, December 31, 2021 and December 31, 2020.

The increase in nonaccrual loans at December 31, 2022 was primarily attributable to isolated credit deterioration in the agribusiness sector. The increase in nonaccrual loans at December 31, 2021 was primarily attributable to credit deterioration on a limited number of borrowers within the electric utility sector.

Allowance and Reserve for Losses on Unfunded Commitments

The allowance for loan losses at December 31, 2022, totaled $15.7 million, compared to $11.9 million at December 31, 2021, and $9.6 million at December 31, 2020. The increase during 2022 reflects an increase in specific reserves for two borrowers in the agribusiness sector as well as increases in general reserves due to isolated credit deterioration and loan growth. The reserve for losses on unfunded commitments on letters of credit (LOC) and unfunded commitments totaled $2.1 million, $1.4 million and $1.9 million at December 31, 2022, 2021 and 2020, respectively. The allowance and reserve for losses on unfunded commitments in its entirety is related to risks identified in the Bank's participation portfolio.

The following table provides an analysis of key statistics related to the allowance and reserve for losses on unfunded commitments at December 31:

	2022	2021	2020
Allowance and reserve for losses on unfunded commitments as a percentage of:			
Average loans	**0.06 %**	0.06 %	0.06 %
Loans at year end			
Total loans	**0.06**	0.05	0.05
Participations	**0.20**	0.18	0.17
Nonaccrual loans	**59.21**	231.17	860.70
Total high-risk loans	**55.17**	165.55	311.11
Net charge-offs (recoveries) to average loans	**—**	—	0.01
Provision expense to average loans	**0.02**	0.01	0.01

The activity in the reserves for credit losses is discussed further in Note 4, "Loans and Reserves for Credit Losses," to the accompanying financial statements.

Effective January 1, 2023, the Bank adopted the current expected credit losses (CECL) accounting guidance that replaced the incurred loss guidance. CECL established a single allowance framework for all financial assets measured at amortized cost, certain off-balance sheet credit exposures, and changed the impairment recognition model for available-for-sale securities. The guidance requires management to consider in its estimate of allowance for credit losses (ACL) relevant historical events, current conditions and reasonable and supportable forecasts that affect the collectability of the assets. The adoption of this guidance resulted in a cumulative effect transition adjustment at January 1, 2023, reflecting an increase in the Bank's ACL of approximately $8.4 million and a corresponding decrease in retained earnings.

Interest Rate Risk Management

Asset/liability management is the Bank's process for directing and controlling the composition, level and flow of funds related to the Bank's and Texas District's interest-rate-sensitive assets and liabilities. The Bank is able to manage the balance sheet composition by using various debt issuance strategies and hedging transactions to match its asset cash flows. Management's objective is to generate adequate and stable net interest income in a changing interest rate environment.

The Bank uses a variety of techniques to manage its financial exposure to changes in market interest rates. These include monitoring the difference in the maturities or repricing cycles of interest-rate-sensitive assets and liabilities; simulating changes in net interest income under various interest rate scenarios; and monitoring the change in the market value of interest-rate-sensitive assets and liabilities under various interest rate scenarios. The Bank measures interest rate risk on a quarterly basis.

The interest rate risk inherent in an Association's loan portfolio is substantially mitigated through its funding relationship with the Bank. The Bank manages district interest rate risk through its direct loan pricing and funding processes. Under the Farm Credit Act of 1971, as amended, an Association is obligated to borrow only from the Bank unless the Bank approves borrowing from other funding sources. An Association's indebtedness to the Bank, under a general financing agreement between the Bank and the Association, represents demand borrowings by the Association to fund the majority of its loan advances to Association members and is secured by the total assets of the Association.

The Bank's net interest income is determined by the difference between income earned on loans and investments and the interest expense paid on funding sources, typically Systemwide bonds and discount notes. The Bank's level of net interest income is affected by both changes in market interest rates and timing differences in the maturities or repricing cycles of interest-bearing assets and liabilities. Depending upon the direction and magnitude of changes in market interest rates, the Bank's net interest income may be affected either positively or negatively by the mismatch in the maturity or the repricing cycle of interest-rate-sensitive assets and liabilities.

The Bank maintains a loan pricing philosophy that loan rates should be based on competitive market rates of interest. The Associations offer a wide variety of products, including SOFR- and prime-indexed variable-rate loans and loans with fixed-rate terms ranging from under one year to 30 years. The interest rates on these loans are directly related to the Bank's cost to issue debt in the capital markets and a credit spread added for borrower risk.

The Bank offers an array of loan programs to associations that are designed to meet the needs of the Associations' borrowers. These loan programs have varying repayment terms, including fixed and level principal payments, and a choice of payment frequencies, such as monthly, quarterly, semiannual and annual payments. Additionally, the Bank offers a choice of prepayment options to meet customer needs.

FCBT uses complex modeling tools to manage and measure the risk characteristics of its earning assets and liabilities, including gap and simulation analyses. The following interest rate gap analysis sets forth the Bank's interest-earning assets and interest-bearing liabilities outstanding as of December 31, 2022, which are expected to mature or reprice in each of the future time periods shown:

Interest Rate Gap Analysis

as of December 31, 2022

Interest-Sensitive Period

	One Month or Less	More Than One Through Six Months	More Than Six Through Twelve Months	**Total Twelve Months or Less**	More Than One Year but Less Than Five Years	More Than Five Years and Non-Rate-Sensitive	**Total**
Interest-Earning Assets							
Total loans	$ 6,799,010	$ 2,455,488	$ 1,789,031	**$ 11,043,529**	$ 10,319,099	$ 6,901,594	**$ 28,264,222**
Total investments	2,116,909	568,589	726,300	**3,411,798**	2,585,649	959,183	**6,956,630**
Total interest-earning assets	8,915,919	3,024,077	2,515,331	**14,455,327**	12,904,748	7,860,777	**35,220,852**
Interest-Bearing Liabilities							
Total interest-bearing funds	7,835,398	2,978,354	2,870,296	**13,684,048**	11,358,419	8,929,275	**33,971,742**
Excess of interest-earning assets over interest-bearing liabilities	—	—	—	—		1,249,110	**1,249,110**
Total interest-bearing liabilities	7,835,398	2,978,354	2,870,296	**13,684,048**	11,358,419	10,178,385	**$ 35,220,852**
Interest rate sensitivity gap	$ 1,080,521	$ 45,723	$ (354,965)	**$ 771,279**	$ 1,546,329	$ (2,317,608)	
Cumulative interest rate sensitivity gap	$ 1,080,521	$ 1,126,244	$ 771,279	**$ 771,279**	$ 2,317,608		

The amount of assets or liabilities shown in each of the time periods was determined based on the earlier of repricing date, contractual maturity or anticipated loan payments, or projected exercise date on callable debt. To reflect the expected cash flow and repricing characteristics of the Bank's balance sheet, an estimate of expected prepayments on loans and mortgage-related investments is used to adjust the maturities of the loans and investments in the earning assets section of the gap analysis. Changes in market interest rates will affect the volume of prepayments on loans. Correspondingly, adjustments have been made to reflect the characteristics of callable debt instruments and the effect derivative financial instruments have on the repricing structure of the Bank's balance sheet. The "interest rate sensitivity gap" line reflects the mismatch, or gap, in the maturity or repricing of interest-rate-sensitive assets and liabilities. A gap position can be either positive or negative. A positive gap indicates that a greater volume of assets than liabilities reprices or matures in a given time period, and conversely, a negative gap indicates that a greater volume of liabilities than assets reprices or matures in a given time period. On a 12-month cumulative basis, the Bank has a positive gap position, indicating that the Bank has positive exposure to rising interest rates. This would occur when interest income on maturing or repricing interest-bearing assets increases sooner than interest expense on maturing or repricing interest-bearing liabilities.

The cumulative gap, which is a static measure, does not take into consideration the changing value of options available to the Bank in order to manage this exposure, specifically the ability to exercise or not exercise options on callable debt. These options are considered when projecting the effects of interest rate changes on net interest income and on the market value of equity in the following tables.

Interest rate risk exposure as measured by simulation modeling calculates the Bank's expected net interest income and market value of equity based upon projections of interest-rate-sensitive assets, liabilities, derivative financial instruments and interest rate scenarios. The Bank monitors its financial exposure to multiple interest rate scenarios. The Bank's policy guideline for the maximum negative impact as a result of a 200 basis point change in interest rates is 16% for net interest income and 20% for market value of equity. The Bank manages its interest rate risk exposure within these guidelines. At December 31, 2022, projected annual net interest income would decrease by 1.48%, if interest rates were to decrease by 100 basis points, and would decrease by 2.74%, if interest rates were to decrease by 200 basis points. At December 31, 2022, projected annual net interest income would increase by 2.05% if interest rates were to increase by 100 basis points and by 4.38% if interest rates were to increase by 200 basis points. Market value of equity is projected to increase by 3.87% as a result of a 100 basis point decrease in interest rates, and to increase by 7.07% if interest rates were to decrease by 200 basis points at December 31, 2022. Market value of equity is projected to decrease by 3.67% if interest rates were to increase by 100 basis points at December 31, 2022 and decrease by 6.64% if interest rates were to increase by 200 basis points.

The following tables set forth the Bank's projected sensitivity to interest rate movements as prescribed by policy as of December 31, 2022, based on the Bank's interest-earning assets and interest-bearing liabilities:

	December 31, 2022			
	+200	+100	-100	-200
Change in net interest income	4.38 %	2.05 %	(1.48)%	(2.74)%
Change in market value of equity	(6.64)%	(3.67)%	3.87 %	7.07 %

The Bank may use derivative financial instruments to manage its interest rate risk and liquidity position. Fair value and cash flow interest rate swaps for asset/liability management purposes may be used to change the repricing characteristics of liabilities to match the repricing characteristics of the assets they support. The Bank does not hold, and is restricted by policy from holding, derivative financial instruments for trading purposes and is not a party to leveraged derivative transactions.

At December 31, 2022, the Bank held interest rate caps with a notional amount of $115.0 million (net fair value asset of $878 thousand), and pay-fixed interest rate swap contracts with a notional amount of $1.4 billion (net fair value asset of $1.3 million, net of posted variation margin). See Note 17, "Derivative Instruments and Hedging Activity," to the accompanying financial statements for further discussion. For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. For derivative instruments that are designated and qualify as a fair value hedge, the gain or loss on the derivative as well as the offsetting loss or gain on the hedged item (principally, debt securities) attributable to the hedge risk are recognized in current earnings. The Bank includes the gain or loss on the hedged items in the same line item (interest expense) as the offsetting loss or gain on the related pay-floating interest rate swaps. To the extent that the derivatives have a negative fair value, the Bank has a payable on the instrument and the counterparty is exposed to the credit risk of the Bank. To the extent that the derivatives have a positive fair value, the Bank has a receivable on the instrument and is therefore exposed to credit risk from the counterparty. To manage this credit risk, the Bank monitors the credit ratings of its counterparties and has bilateral collateral agreements with counterparties. During the third quarter of 2020, the Bank began clearing cash flow hedges through a futures commission merchant (FCM), with a clearinghouse or central counterparty (CPP). At December 31, 2022, the Bank continues to clear all cash flow hedges through an FCM, with a clearinghouse or CPP.

At December 31, 2022, the notional amount of cleared cash flow hedges was $1.43 billion with associated posted initial margin of $42.7 million. At December 31, 2022, all cleared cash flow hedges were in an asset position and the Bank received cash collateral from the counterparty of $62.5 million. Cleared derivatives require the payment of initial and variation margin as a protection against default.

Excluding centrally cleared cash flow hedges, the Bank had counterparty credit risk exposure to three counterparties totaling $878 thousand at December 31, 2022.

The Bank's activity in derivative financial instruments for 2022 is summarized in the table below:

Activity in Derivative Financial Instruments
(Notional Amounts)

(in millions)	Pay-Fixed Swaps	Interest Rate Caps	Total
Balance at January 1, 2022	$ 825	$ 145	$ 970
Additions	600	—	600
Maturities/amortizations	—	(30)	(30)
Balance at December 31, 2022	**$ 1,425**	**$ 115**	**$ 1,540**

Liquidity Risk Management

The Bank's liquidity risk management practices ensure the Texas District's ability to meet its financial obligations. These obligations include the repayment of Systemwide debt securities as they mature, the ability to fund new and existing loan and other funding commitments, and the ability to fund operations in a cost-effective manner. A primary objective of liquidity risk management is to plan for unanticipated changes in the capital markets.

The Bank's primary source of liquidity is the ability to issue Systemwide debt securities, which are the general unsecured joint and several obligations of the System banks as discussed below. As a secondary source of liquidity, the Bank maintains an investment portfolio composed primarily of high-quality liquid securities. The securities provide a stable source of income for the Bank, and their high quality ensures the portfolio can quickly be converted to cash should the need arise.

While the Bank's primary source of liquidity is the ability to access the capital markets to issue Systemwide debt, the Bank also maintains other contingency funding sources including repurchase agreements with several commercial banks, a $75.0 million uncommitted Federal Funds line of credit and reciprocal emergency lending agreements with other System entities. These alternative funding sources are subject to various terms and conditions, and as a result, there can be no assurance that funding will be available if needed by the Bank. In addition, the Funding Corporation provides contingency financing mechanisms which include emergency and non-emergency purchases of Federal funds from counterparties and direct issuance of Systemwide debt securities to institutional investors.

FCSIC insures the timely payment of principal and interest on Systemwide debt securities. FCSIC maintains the Insurance Fund for this purpose and for certain other purposes. In the event a System bank is unable to timely pay principal or interest on any insured debt obligation for which that Bank is primarily liable, FCSIC must expend amounts in the Insurance Fund to the extent available to insure the timely payment of principal and interest on the debt obligation. The provisions of the Farm Credit Act providing for joint and several liability of the System banks on the debt obligation cannot be invoked until the Insurance Fund is exhausted. However, because of other mandatory and discretionary uses of the Insurance Fund, there is no assurance that there will be sufficient funds to pay the principal or interest on the insured debt obligation. The insurance provided through use of the Insurance Fund is not an obligation of and is not a guarantee by the U.S. government.

FCSIC 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 FCSIC. Under its existing statutory authority, FCSIC may use these funds to provide assistance to the System banks in demanding market circumstances which threaten the banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10.00 billion and terminates on September 30, 2023, unless otherwise renewed. The decision whether to seek funds from the Federal Financing Bank is at the discretion of FCSIC, 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 will be available if needed by the System.

FCA regulations require each bank to maintain a minimum of 90 days of liquidity coverage on a continuous basis, assuming no access to the capital markets. Liquidity coverage is defined as the number of days that maturing Systemwide debt securities could be funded with cash and eligible liquidity investments maintained by the Bank. Regulations on liquidity reserve requirement divided the existing eligible liquidity reserve requirement into three levels: Level 1 consists of cash and cash-like instruments and must provide 15 days of coverage; Level 2 consists primarily of government guaranteed securities and must provide 30 days of coverage (combined with Level 1); and Level 3 consists primarily of agency guaranteed securities and must provide a total of 90 days of coverage (combined with Level 1 and Level 2). Additionally, regulations require the Bank to maintain a supplemental liquidity reserve above the 90-day minimum to cover cash flow requirements unique to the Bank. At December 31, 2022, the Bank met all individual level criteria and had a total of 197 days of liquidity coverage, as compared with 185 days at December 31, 2021.

Funding Sources

The Bank continually raises funds to support its mission to provide credit and related services to the rural and agricultural sectors, repay maturing Systemwide debt securities and meet other obligations. As a government-sponsored enterprise, the Bank has had access to the nation's and world's capital markets. This access has provided us with a dependable source of competitively priced debt that is critical to support our mission of providing funding to the rural and agricultural sectors. Moody's Investors Service and Standard & Poor's rate the System's long-term debt as Aaa and AA+, respectively. These rating agencies base their ratings on many quantitative and qualitative factors, including the System's government-sponsored enterprise status. Standard and Poor's rating on long-term debt of AA+ is in concert with its sovereign credit rating on the United States of America at AA+. Material changes to the factors considered could result in a different debt rating. However, as a result of the System's financial performance, credit quality and standing in the capital markets, we anticipate continued access to funding necessary to support System needs. The U.S. government does not guarantee, directly or indirectly, Systemwide debt securities.

The types and characteristics of securities are described in Note 10, "Bonds and Notes," to the accompanying financial statements. As a condition of the Bank's participation in the issuance of Systemwide debt securities, the Bank is required by regulation to maintain specified eligible assets as collateral in an amount equal to or greater than the total amount of bonds and notes outstanding for which the Bank is liable. At December 31, 2022, the Bank had excess collateral of $1.35 billion. Management expects the Bank to maintain sufficient collateral to permit its continued participation in Systemwide debt issuances in the foreseeable future.

The Bank receives ratings from two rating agencies:

- On July 11, 2022, Fitch Ratings affirmed the Bank's long-term and short-term issuer default ratings at "AA-" and "F1+," respectively, with a stable outlook. In accordance with Fitch's updated "Bank Rating Criteria," Fitch has withdrawn the support rating of "1" and the support rating floor of "BBB+" for the Bank's noncumulative perpetual preferred stock and assigned the Bank the System Bank Government Support Rating of "aa-."
- On June 30, 2022, Moody's Investors Service affirmed the Bank's issuer rating at "Aa3," its noncumulative preferred stock rating at "Baa1 (hyb)," and its "a1" baseline credit assessment, with a stable outlook.

The following table provides a summary of the period-end balances of the debt obligations of the Bank:

	December 31,		
(dollars in thousands)	**2022**	2021	2020
Bonds outstanding	**$ 30,737,944**	$ 27,552,088	$ 22,660,531
Average effective interest rates	**2.57 %**	0.99 %	1.03 %
Average remaining life (years)	**3.7**	3.4	2.4
Discount notes outstanding	**$ 3,233,798**	$ 3,238,340	$ 3,212,898
Average effective interest rates	**3.51 %**	0.09 %	0.20 %
Average remaining life (days)	**142**	111	145

During the years ended December 31, 2022, 2021 and 2020, the Bank called debt totaling $150.0 million, $3.98 billion and $16.18 billion resulting in $174 thousand, $7.2 million and $22.2 million in concession expense, respectively.

The following table provides a summary of the average balances of the debt obligations of the Bank:

	Year Ended December 31,		
	2022	2021	2020
Average interest-bearing liabilities outstanding	**$ 32,884,101**	$ 27,803,486	$ 24,831,459
Average interest rates on interest-bearing liabilities	**1.61 %**	1.01 %	1.48 %

Investments

As permitted under FCA regulations, a bank is authorized to hold eligible investments for the purposes of maintaining a diverse source of liquidity, managing short-term surplus funds and managing interest rate risk. The Bank is authorized to hold an amount not to exceed 35.0% of loans outstanding. The Bank's holdings are within this limit as of December 31, 2022.

FCA regulations also define eligible investments by specifying credit criteria and percentage of investment portfolio limit for each investment type. If an investment no longer meets eligibility criteria, the investment becomes ineligible for inclusion in the liquidity portfolio.

At December 31, 2022, the Bank had no investments which were ineligible for liquidity purposes.

At December 31, 2022 and 2021, the Bank held no securities that were designated as other-than-temporarily impaired investments (OTTI) and the Bank recognized no credit losses related to OTTI securities.

The Bank's investments are all considered available-for-sale, and include a liquidity portfolio and a portfolio of other investments. The liquidity portfolio had a fair value of $6.64 billion at December 31, 2022, and consisted primarily of Federal agency-guaranteed collateralized mortgage-backed securities (MBS), corporate debt, agency-guaranteed debt, U.S. Treasury securities, asset-backed securities (ABS) and certificates of deposit. The majority of the liquidity portfolio's MBS includes Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC) securities.

The Bank's liquidity investment portfolio consisted of the following at December 31:

	2022		2021	
	Amortized Cost	**Fair Value**	Amortized Cost	Fair Value
Agency-guaranteed debt	**$ 54,888**	**$ 53,301**	$ 84,269	$ 85,293
Certificates of deposit	**200,000**	**199,009**	—	—
Corporate debt	**240,914**	**234,778**	232,885	234,580
Federal agency collateralized mortgage-backed securities:				
GNMA	**3,070,832**	**2,683,020**	2,822,556	2,793,482
FNMA and FHLMC	**2,652,701**	**2,469,209**	2,601,773	2,600,855
U.S. Treasury securities	**841,444**	**818,844**	650,216	647,564
Asset-backed securities	**188,983**	**186,521**	183,788	184,256
Total liquidity investments	**$ 7,249,762**	**$ 6,644,682**	$ 6,575,487	$ 6,546,030

There were no sales of investments in 2022, 2021 and 2020.

The Bank's other investments consisted of Federal Agricultural Mortgage Corporation (Farmer Mac) guaranteed agricultural mortgage-backed securities (AMBS), purchased from Associations as part of the Bank's CPP program. The Farmer Mac AMBS are not included in the Bank's liquidity portfolio. The Farmer Mac securities are backed by loans originated by the Associations and previously held by the Associations under the Farmer Mac long-term standby commitments to purchase agreements. As a part of the CPP program, any positive impact to net income of the Bank can be returned as patronage to the Association if declared by the Bank's board of directors. The declared patronage approximates the net earnings of the respective pool.

Farmer Mac is a government-sponsored enterprise and is examined and regulated by FCA. It provides secondary market arrangements for agricultural and rural home mortgage loans that meet certain underwriting standards. Farmer Mac is authorized to provide loan guarantees or be a direct pooler of agricultural mortgage loans. Farmer Mac is owned by both System and non-System investors and its board of directors has both System and non-System representation. Farmer Mac is not liable for any debt or obligation of any System institution and no System institution other than Farmer Mac is liable for any debt or obligation of Farmer Mac.

The Bank's other investment portfolio consisted of Farmer Mac AMBS securities at December 31:

	2022		2021	
	Amortized Cost	**Fair Value**	Amortized Cost	Fair Value
Agricultural mortgage-backed securities	**$ 11,595**	**$ 10,270**	$ 14,616	$ 14,209

As discussed above, effective January 1, 2023, the Bank adopted CECL guidance which amends existing impairment guidance for held-to-maturity and available-for-sale investments to incorporate an allowance, which will allow for the reversal of credit impairments in the event that the credit of an issuer improves. The Bank did not have a cumulative effect transition for its investments with the adoption on January 1, 2023 and does not expect credit losses on a significant portion of its available-for-sale securities as a majority of the portfolio consists of U.S. Treasury and U.S. agency securities that inherently have an immaterial risk of loss.

Capital Adequacy

Total shareholders' equity at December 31, 2022, was $1.62 billion compared to $2.00 billion and $1.99 billion at December 31, 2021 and 2020, respectively. The total shareholders' equity decrease of $375.0 million during 2022 was due primarily to an increase of $443.5 million in accumulated other comprehensive loss, $215.6 million in patronage declared, and $46.4 million in dividends paid on preferred stock, partially offset by net income of $269.9 million and the net issuance of capital stock of $60.7 million. The Bank declared patronage of $215.6 million which included $152.0 million in direct loan patronage, $47.0 million in patronage on certain participations, $9.5 million in patronage based on the associations' and OFIs' stock investment in the Bank, and $7.1 million in CPP and NCPP patronage. The Bank's goal is to provide direct loan patronage at a level that would result in a cost of funds to the Associations equal to the Bank's marginal cost of funds, which was achieved for the years ended 2022, 2021 and 2020.

On July 15, 2020, the Bank issued $350.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 4

(Class B-4 preferred stock), representing $ 350 thousand shares at $1,000 per share par value, for net proceeds of $346.1 million with issuance costs of $3.9 million. Dividends on the Class B-4, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2020, at an annual fixed rate of 5.70% of par value of $1,000 per share up to, but excluding, September 15, 2025, from and after which date will be paid at an annual rate of the five-year Treasury rate as of the most recent five-year reset dividend determination date plus 5.415%. The Class B-4 is not mandatorily redeemable at any time, but may be redeemed in whole or part at the option of the Bank, with prior approval from the FCA, on any dividend payment date on or after September 15, 2025. The Class B-4 ranks pari passu with respect to the existing Class B-2 and Class B-3 preferred stock and senior to all of the Bank's other outstanding capital stock. For regulatory purposes, the Class B-4 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations.

On July 20, 2020, the Bank notified holders of the bank's 10% Class B perpetual noncumulative subordinated preferred stock, Series 1 (Class B-1), of its right to redeem all of the outstanding Class B-1 preferred stock at a total price of $1,000 per share, together with an amount equal to all dividends accrued and unpaid up to, but not including, the redemption date. The redemption date was August 19, 2020, and the redemption price was equal to $1,017.777 per share or $305,333,333.33 in total.

Preferred stock totaled $750.0 million at December 31, 2022, 2021 and 2020. Class B noncumulative subordinated perpetual preferred stock included $300.0 million of Class B Series 2 issued in July 2013 (Class B-2 preferred stock), $100.0 million of Class B Series 3 issued in June 2018 (Class B-3 preferred stock), and $350.0 million of Class B Series 4 issued in July 2020 (Class B-4 preferred stock). Preferred stock is the sole obligation of the Bank and is not guaranteed by another System institution. Such obligations are not Systemwide Debt Securities and therefore are not subject to the joint and several obligations of the System banks and are not guaranteed or insured by the Insurance Fund.

Dividends on the Class B-2 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2013, at an annual fixed rate of 6.75% of par value of $100 per share, up to, but excluding September 15, 2023, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 4.01%.

Dividends on the Class B-3 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2018, at an annual fixed rate of 6.20% of par value of $1,000 per share up to, but excluding June 15, 2028, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 3.223%.

The Class B preferred stock ranks senior to all of our outstanding common stock. "Dividend/patronage stopper" clauses in the preferred stock offerings require the payment or declaration of current period dividends on the preferred stock issuances before any other patronage can be declared, and were required before payment of the December 31, 2022, stock investment and direct note patronages to Associations and OFIs.

Accumulated other comprehensive loss increased $443.5 million, or 458.01%, to $540.4 million at December 31, 2022, from $96.8 million at December 31, 2021. The increase was driven by a $576.5 million increase in unrealized losses on the Bank's investments, partially offset by a $130.1 million increase in net unrealized gains on cash flow derivatives and $2.9 million change in postretirement benefit plans. The increase in unrealized net losses on investments and the increase in net unrealized gains on cash flow derivatives were a result of increases in interest rates during 2022.

Capital adequacy is evaluated using various ratios for which the FCA has established regulatory minimums. Regulatory ratios remained well above regulatory minimums, including the conservation and leverage buffers at December 31, 2022.

The following table reflects the Bank's capital ratios at December 31:

	2022	2021	2020	2019	2018	Total Regulatory Requirement Including Capital Conservation Buffers
Permanent capital ratio	**13.43%**	15.10%	16.08%	16.03%	16.31%	7.00%
Common equity tier 1 ratio	**8.66**	9.55	9.92	9.91	9.92	7.00
Tier 1 capital ratio	**13.42**	15.09	16.07	16.01	16.29	8.50
Total capital ratio	**13.50**	15.17	16.15	16.12	16.42	10.50
Tier 1 leverage ratio	**5.94**	6.37	7.11	7.26	7.39	5.00
UREE leverage ratio	**2.50**	2.73	2.99	3.06	3.08	1.50

Operational Risk Management

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, human factors, external cyber risk and data security, or external events, including the execution of unauthorized transactions by employees, errors relating to transaction processing and technology, breaches of the internal control system and the risk of fraud by employees or persons outside the System. The board of directors is required, by regulation, to adopt an internal control policy that provides adequate direction to the institution in establishing effective control over and accountability for operations, programs and resources. The policy must include, at a minimum, the following items:

- direction to management that assigns responsibility for the internal control function to an officer of the institution;
- adoption of internal audit and control procedures;
- direction for the operation of a program to review and assess its assets;
- adoption of loan, loan-related assets and appraisal review standards, including standards for scope of review selection and standards for work papers and supporting documentation;
- adoption of asset quality classification standards;

- adoption of standards for assessing credit administration, including the appraisal of collateral; and
- adoption of standards for the training required to initiate a program.

In general, we address operational risk through the organization's internal governance structure. Exposure to operational risk is typically identified with the assistance of senior management, and internal audit plans are risk-based and are re-evaluated on an annual basis, or more frequently, if necessary. The board of directors is responsible for defining the role of the audit committee in providing oversight and review of the institution's internal controls.

Reputational Risk Management

Reputational risk is defined as the negative impact resulting from events, real or perceived, that shape the image of the Bank, the System or any of its entities. The Bank and its Associations could be harmed if its reputation were impacted by negative publicity about the System as a whole, an individual System entity or the agriculture industry in general.

Reputational risk is the direct responsibility of each System entity. For reputational issues that have broader consequences for the System as a whole, System governance will communicate guidance to the System supporting those business practices that are consistent with our mission.

Political Risk Management

We, as part of the System, are an instrumentality of the Federal government and are intended to further governmental policy concerning the extension of credit to or for the benefit of agricultural and rural America. The System and its borrowers may be significantly affected by Federal legislation that affects the System directly, such as changes to the Farm Credit Act, or indirectly, such as agricultural appropriations bills. Political risk to the System is the risk of loss of support for the System or agriculture by the U.S. government.

We manage political risk by actively supporting the Farm Credit Council (Council), which is a full-service, Federal trade association representing the System before Congress, the executive branch and others. The Council provides the mechanism for "grassroots" involvement in the development of System positions and policies with respect to Federal legislation and government actions that impact the System. Additionally, we take an active role in representing the individual interests of System institutions and their borrowers before Congress. In addition to the Council, each district has its own council, which is a member of the Council. The district councils represent the interests of their members on a local and state level, as well as on a Federal level.

Human Capital

The Bank recognizes that its people are the key to success and, therefore, strive to make the workplace attractive for all employees. Effective human capital management results from the recruitment and retention of a highly qualified workforce that is aligned with the Bank's core values and mission. The Bank has an onboarding program dedicated to familiarizing all new hires with the Bank's culture and values. The mission of effectively serving the needs of rural America and agriculture drives the organizational culture.

The Bank's human capital strategy is unique to its organization and is impacted by the geography and workforce demographics in the communities in which it serves. Human capital management is carried out under the oversight of the Bank's board of directors.

The Bank has adopted a Human Capital Plan (Plan) that focuses on three broad areas: (1) assessment of workforce and performance management, (2) succession planning and (3) diversity and inclusion.

Assessment of Workforce and Performance Management

The Plan provides a description of the Bank's workforce and an assessment of strengths and weaknesses within the workforce. The Plan generally takes into account effective strategies to evaluate the workforce including reviewing job descriptions to make sure the skills needed are accurately defined, engaging in a performance review process to assess skills desired against skills employees have, and training to address gaps.

Succession Program

Succession planning is necessary to ensure that talent and skills are available and essential knowledge and organization culture are maintained when employees in key positions depart. The Plan also provides for management succession planning and strategies with the main objective of identifying critical workforce positions and developing a targeted pool of potential successors.

Diversity and Inclusion

Diversity and inclusion are embedded within each phase of the employment life cycle including recruitment, onboarding, new employee immersion and employee retention and development. Effective diversity and inclusion strategies require a continuous cultivation of a welcoming, inclusive and collaborative environment that values the life experiences of all employees.

At December 31, 2022, the Bank employed 293 full-time employees of which 39% were women, 61% were men and 38% were minorities based on employee self-reporting. The statistics are for the Bank only and other System institution's information may vary from these statistics, as the composition of each System institution's workforce is impacted by the demographics of its unique service area.

LIBOR Transition

On March 5, 2021, the United Kingdom's Financial Conduct Authority (the UK FCA) announced that the ICE Benchmark Administration (IBA) (the entity regulated by the UK FCA that is responsible for calculating the London Inter-Bank Offered Rate (LIBOR)) had notified the UK FCA of its intent, among other things, to cease providing certain US dollar LIBOR settings as of June 30, 2023. In the announcement, the UK FCA confirmed that all 35 LIBOR tenors (including with respect to US dollar LIBOR) will be discontinued or declared non-representative as of either: (a)immediately after December 31, 2021 or (b)immediately after June 30, 2023.

The Bank has implemented a LIBOR transition plan in accordance with Farm Credit Administration's guidance and will continue to analyze potential risks associated with the LIBOR transition, including, but not limited to, financial, market, accounting, operational, legal, tax, reputational and compliance risks, and will update its LIBOR transition plan, to the extent necessary, to address these risks.

The Bank's LIBOR exposure arises from certain LIBOR-based loans made to customers, investment securities purchased, preferred stock issued, derivative transactions entered into, and Systemwide Debt Securities issued by the Funding Corporation on the Bank's behalf. Alternative reference rates that replace LIBOR may not yield the same or similar economic results over the lives of the financial instruments, which could adversely affect the value of, and return on, such financial instruments held by the Bank. Due to the uncertainty regarding the transition of LIBOR-based financial instruments, including the manner in which an alternative reference rate will apply, and the mechanisms for transitioning the Bank's LIBOR-based instruments to instruments with an alternative rate, the Bank cannot yet reasonably estimate the expected financial impact of the LIBOR transition on the Bank. In light of the announcements by the UK FCA, the IBA and the other U.S. prudential regulators noted above, US dollar LIBOR, except in very limited circumstances, has been or will be discontinued or declared unrepresentative as of June 30, 2023.

New York and several other states have passed laws intended to apply to US dollar LIBOR-based contracts, securities, and instruments governed by those states' laws. These laws established fallbacks for LIBOR when there is no or insufficient fallback rates in these contracts. The Federal Adjustable Interest Rate Act (LIBOR Act) was signed into law on March 15, 2022. The Federal legislation provides a statutory fallback mechanism on a nationwide basis to replace US dollar LIBOR with a benchmark rate, selected by the Federal Reserve Board and based on SOFR, for certain contracts that reference US dollar LIBOR and contain no or insufficient fallback provisions. The LIBOR Act largely parallels the state laws; however, where a conflict of law arises between the competing legislations, the LIBOR Act will preempt the state laws.

On December 16, 2022, the Federal Reserve Board adopted a final rule implementing certain provisions of the LIBOR Act ("Regulation ZZ"). Regulation ZZ specifies that on the LIBOR replacement date, which is the first London banking day after June 30, 2023, the Federal Reserve Board-selected benchmark replacement, based on SOFR and including any tenor spread adjustment as provided by Regulation ZZ, will replace references to overnight, one-month, three-month, six-month, and 12-month LIBOR in certain contracts that do not mature before the LIBOR replacement date and that do not contain adequate fallback language. While substantially all Bank contracts, including Systemwide Debt Securities and loans made by the Bank, have adequate fallbacks to replace LIBOR, the LIBOR Act and Regulation ZZ could apply to certain Systemwide Debt Securities and Bank investments, preferred stock and loans that reference LIBOR and have no or inadequate fallback provisions.

To the extent necessary, substantially all Systemwide Debt Securities and Bank loans and other financial products that reference LIBOR, have been amended to incorporate adequate fallbacks, including, where appropriate, the SOFR-based fallbacks recommended by the Alternative Reference Rates Committee (the "ARRC"). The ARRC is an industry-working group convened by the Federal Reserve Board and the New York Fed to lead the LIBOR transition, which, among other work, has developed industry-specific fallback language that may be used by market participants to address the cessation of US dollar LIBOR. On July 29, 2021, the ARRC formally announced that CME Term SOFR is an appropriate fallback to LIBOR to be used for certain types of currently outstanding loans, floating rate notes (which would include certain outstanding Systemwide Debt Securities) based on LIBOR when LIBOR is discontinued or deemed unrepresentative, and, in more limited circumstances, for new loans, floating rate notes and other transactions, including certain derivatives. CME Term SOFR are forward-looking rates published by CME Group Benchmark Administration Limited for 1-month, 3-month, 6-month and 12-month tenors. The ARRC's support of CME Term SOFR is expected to increase the volume of transactions quoted in SOFR, supporting the transition away from LIBOR.

The following is a summary of principal balances on variable-rate financial instruments with LIBOR exposure at December 31, 2022. Exposure to these instruments is limited to the Bank in this illustration:

(in thousands)	Due by June 30, 2023	Due after June 30, 2023	Total
Assets			
Loans	$ 57,383	$ 2,262,737	$ 2,320,120
Investment securities	—	581,187	581,187
Total assets	$ 57,383	$ 2,843,924	$ 2,901,307
Liabilities and shareholders' equity			
Bonds and notes, net	$ —	$ —	$ —
Preferred stock	—	400,000	400,000
Total liabilities and shareholders' equity	$ —	$ 400,000	$ 400,000

Note: Included in this table are preferred stock issuances that currently have fixed dividend rates but convert to LIBOR-indexed variable rates in the future. Since LIBOR will no longer be available or, to the extent available, non-representative after June 30, 2023, the annual rate will be replaced by a CME term SOFR-based rate either by bi-lateral negotiation or by operation of law. To the extent that any preferred stock has not been redeemed or amended prior to June 30, 2023 to include a non-LIBOR fallback rate, pursuant to the LIBOR Act and Regulation ZZ, the LIBOR-based rate that would have been paid after June 30, 2023 under such preferred stock will be replaced by operation of law with a CME Term SOFR-based rate. The preferred stock is perpetual and may be redeemed in 2023 or thereafter. For additional information regarding preferred stock, see Note 11 in the 2022 Annual Report.

(in thousands)	Due by June 30, 2023	Due after June 30, 2023	Total
Derivatives (notional amount)	$ 75,000	$ 290,000	$ 365,000

The following is a summary of variable-rate financial instruments indexed to SOFR:

(in thousands)	December 31, 2022
Assets	
Loans	**$ 3,560,869**
Investment securities	**1,138,770**
Total assets	**$ 4,699,639**
Liabilities and shareholders' equity	
Bonds and notes, net	**$ 7,065,000**
Preferred stock	—
Total liabilities and shareholders' equity	**$ 7,065,000**
Derivatives (notional amount)	**$ 1,175,000**

Recent Accounting Pronouncements

The recent accounting pronouncements are described in Note 2, "Summary of Significant Accounting Policies," to the accompanying financial statements.

Regulatory Matters

At December 31, 2022, there were no Associations operating under written agreements with the Farm Credit Administration (FCA).

On May 9, 2022, the FCA published a final rule in the Federal Register on amending certain regulations to address changes in accounting principles generally accepted in the United States. Such changes reflect the current expected credit losses (CECL) methodology that will replace the incurred loss methodology upon adoption. Credit loss allowances related to loans, lessor's net investments in leases, and held-to-maturity debt securities have been defined as adjusted allowances for credit losses and will be included in the Bank's Tier 2 capital up to 1.25% of the Bank'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 the Bank's Tier 2 capital. In addition, the final rule does not include a transition phase-in period for the CECL day 1 cumulative effect adjustment to retained earnings on the Bank's regulatory capital ratios. The rule became effective on January 1, 2023.

On June 16, 2022, the FCA published in the Federal Register a proposed rule to restructure and revise its regulations governing the Farm Credit System's service to young, beginning and small (YBS) farmers and ranchers. The comment period ended on August 15, 2022.

Report of Management

The financial statements of the Farm Credit Bank of Texas (Bank) are prepared by management, which is responsible for their integrity and objectivity, including amounts that must necessarily be based on judgments and estimates. The financial statements have been prepared in conformity with generally accepted accounting principles appropriate in the circumstances, except as noted. Other financial information included in this annual report is consistent with that in the financial statements.

To meet its responsibility for reliable financial information, management depends on the Bank's 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 of controls must be related to the benefits derived. To monitor compliance, the internal audit staff of the Farm Credit Bank of Texas audits the accounting records, reviews accounting systems and internal controls, and recommends improvements as appropriate. The financial statements are audited by PricewaterhouseCoopers LLP (PwC), independent auditors. In addition, our independent auditors have audited our internal accounting controls as of December 31, 2022. In addition, the Bank is examined by the Farm Credit Administration.

In the opinion of management, the financial statements are true and correct and fairly state the financial position of the Farm Credit Bank of Texas at December 31, 2022, 2021 and 2020. The independent auditors have direct access to the audit committee, which is composed solely of directors who are not officers or employees of the Bank.

The undersigned certify that we have reviewed the December 31, 2022, annual report of the Farm Credit Bank of Texas, that the report has been prepared in accordance with all applicable statutory or regulatory requirements, and that the information included herein is true, accurate and complete to the best of our knowledge and belief.

James F. Dodson
Chair of the Board

Amie Pala
Chief Executive Officer

Brandon Blaut
Executive Vice President, Chief Financial Officer

March 1, 2023

Report of Audit Committee

The audit committee (Committee) is composed of the entire board of directors of the Farm Credit Bank of Texas (Bank). The Committee oversees the Bank's system of internal controls and the adequacy of management's action with respect to recommendations arising from those internal control activities. The Committee's approved responsibilities are described more fully in the Audit Committee Charter, which is available on request or on the Bank's website at *www.farmcreditbank.com*. In 2022, 12 Committee meetings were held, with some of these meetings including executive sessions between the Committee and PricewaterhouseCoopers LLP (PwC) and the Bank's internal auditor. The Committee approved the appointment of PwC as independent auditors for 2022.

Management is responsible for the Bank's internal controls and for the preparation of the financial statements in accordance with accounting principles generally accepted in the United States of America. PwC is responsible for performing an independent audit of the Bank's financial statements in accordance with auditing standards generally accepted in the United States of America in addition to the Bank's internal control over financial reporting and to issue a report thereon. The Committee's responsibilities include monitoring and overseeing these processes.

In this context, the Committee reviewed and discussed the Bank's audited financial statements for the year ended December 31, 2022, with management and PwC. The Committee also reviewed with PwC the matters required to be discussed by Auditing Standard No. 16 (Communications with Audit Committees).

PwC has provided to the Committee the written communications regarding their independence. The Committee discussed with appropriate representatives of PwC the firm's independence from the Bank. The Committee also approved the non-audit service provided by PwC and concluded that the service was not incompatible with maintaining the auditor's independence. Furthermore, throughout 2022 the Committee has discussed with management and PwC such other matters and received such assurances from them as the Committee deemed appropriate. Both PwC and the Bank's internal auditor directly provided reports on significant matters to the committee.

M. Philip Guthrie, Chair
Dr. Larry Boleman, Vice Chair
Dennis Anthony
John L. Dailey
James F. Dodson
Linda C. Floerke
Dorothy Nichols

Audit Committee Members

March 1, 2023

Report on Internal Control Over Financial Reporting

The Farm Credit Bank of Texas' (Bank's) principal executive officer and principal financial officer are responsible for establishing and maintaining adequate internal control over financial reporting for the Bank's financial statements. For purposes of this report, "internal control over financial reporting" is defined as a process designed by, or under the supervision of, the Bank's principal executive officer and principal financial officer, or persons performing similar functions, with review by the Bank's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting information used in the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America (GAAP). Internal controls over financial reporting include those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Bank; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial information in accordance with GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Bank; and (3) 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 its financial statements.

The Bank's management has completed an assessment of the effectiveness of internal controls over financial reporting as of December 31, 2022. In making the assessment, management used the updated Internal Control – Integrated Framework promulgated by the Committee of Sponsoring Organizations of the Treadway Commission on May 14, 2013, commonly referred to as the "COSO 2013 Framework."

Based on the assessment performed, the Bank concluded that as of December 31, 2022, the internal control over financial reporting was effective based upon the COSO criteria. Additionally, based on this assessment, the Bank determined that there were no material weaknesses in the internal control over financial reporting as of December 31, 2022. A review of the assessment performed was reported to the Bank's audit committee.

The effectiveness of the Bank's internal control over financial reporting as of December 31, 2022, has been audited by PricewaterhouseCoopers LLP, independent auditors, which expresses an unqualified opinion on the effectiveness of the Bank's internal control over financial reporting as of December 31, 2022.

Evaluation of Disclosure Controls and Procedures

As of December 31, 2022, management of the Farm Credit Bank of Texas (Bank) carried out an evaluation with the participation of the Bank's management, including the chief executive officer (CEO) and chief financial officer (CFO), of the effectiveness of the design and operation of their respective disclosure controls and procedures [1] with respect to this annual stockholder report. This evaluation is based on testing of the design and effectiveness of key internal controls, certifications and other information furnished to the principal executive officer and principal financial officer of the Bank, as well as incremental procedures performed by the Bank. Based upon and as of the date of the Bank's evaluation, the CEO and the CFO concluded that the disclosure controls and procedures are effective in alerting them on a timely basis of any material information relating to the Bank that is required to be disclosed by the Bank in the annual and quarterly stockholder reports it files or submits to the Farm Credit Administration. There have been no significant changes in the Bank's internal control over financial reporting[2] that occurred during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, the Bank's internal control over financial reporting.

[1] For purposes of this discussion, "disclosure controls and procedures" are defined as controls and procedures of the Bank that are designed to ensure that the financial information required to be disclosed by the Bank in this annual stockholder report is recorded, processed, summarized and reported, within the time periods specified under the rules and regulations of the Farm Credit Administration.

[2] For purposes of this discussion, "internal control over financial reporting" is defined as a process designed by, or under the supervision of, the Bank's principal executive officer and principal financial officer, or persons performing similar functions, and effected by the Bank's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Bank's financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Bank; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the Bank's financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Bank are being made only in accordance with authorizations of management and directors of the Bank; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the Bank's financial statements.

Certification

I, Amie Pala, certify that:

1. I have reviewed the 2022 Annual Report of the Farm Credit Bank of Texas (Bank).
2. Based on my knowledge, this annual stockholder 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 annual stockholder 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 the Bank as of, and for, the periods presented in this report.
4. The Bank's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures[1] and internal control over financial reporting[2] for the Bank 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 is made known to us, particularly during the period in which this annual stockholder 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 annual stockholder report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual stockholder report based on such evaluation; and
   (d) disclosed in this annual stockholder report any change in the Bank's internal control over financial reporting that occurred during the Bank's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Bank's internal control over financial reporting.
5. The Bank'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 Bank's audit committee:
   (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.

Amie Pala

Amie Pala
Chief Executive Officer

March 1, 2023

(1) See footnote 1 on evaluation of disclosure controls and procedures report

(2) See footnote 2 on evaluation of disclosure controls and procedures report

Certification

I, Brandon Blaut, certify that:

1. I have reviewed the 2022 Annual Report of the Farm Credit Bank of Texas (Bank).
2. Based on my knowledge, this annual stockholder 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 annual stockholder 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 the bank as of, and for, the periods presented in this report.
4. The Bank's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures[1] and internal control over financial reporting[2] for the Bank 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 is made known to us, particularly during the period in which this annual stockholder 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 annual stockholder report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual stockholder report based on such evaluation; and
   (d) disclosed in this annual stockholder report any change in the Bank's internal control over financial reporting that occurred during the Bank's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Bank's internal control over financial reporting.
5. The Bank'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 Bank's audit committee:
   (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.

Brandon Blaut
Executive Vice President, Chief Financial Officer

March 1, 2023

(1) See footnote 1 on evaluation of disclosure controls and procedures report

(2) See footnote 2 on evaluation of disclosure controls and procedures report

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Farm Credit Bank of Texas

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying balance sheets of Farm Credit Bank of Texas (the “Company”) as of December 31, 2022, 2021 and 2020, and the related statements 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 “financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022, 2021 and 2020, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company’s financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the 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 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 financial statements included performing procedures to assess the risks of material misstatement of the 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 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 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

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weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Allowance for Loan Losses – Loans Collectively Evaluated for Impairment

As described in Notes 2 and 4 to the financial statements, the allowance for loan losses was $15.7 million, of which $10.6 million is related to loans collectively evaluated for impairment as of December 31, 2022. Management's estimate of the allowance for loan losses related to loans collectively evaluated for impairment is determined using a two-dimensional loan rating model that incorporates a 14-point risk-rating scale to identify and track the probability of borrower default and a separate scale addressing loss given default over a period of time. Probability of default is management's estimate of the probability that a borrower will experience a default within 12 months from the date of the determination of the risk rating, and loss given default is management's estimate as to the anticipated loss on a specific loan assuming default has occurred or is expected to occur within the next 12 months. As disclosed by management, the level of allowance for loan losses is generally based on recent charge-off experience adjusted for relevant environmental factors. Factors considered by management in determining and supporting the levels of allowances for loan losses are the concentration of lending in agriculture, combined with uncertainties associated with farmland values, commodity prices, exports, government assistance programs, regional economic effects and weather-related influences.

The principal considerations for our determination that performing procedures relating to the allowance for loan losses - loans collectively evaluated for impairment is a critical audit matter are the significant judgment by management in determining the allowance for loan losses, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing audit procedures and evaluating audit evidence relating to management's estimated probability of default and estimated loss given default assumptions, as well as management's consideration of environmental factors in determining the allowance for loan losses.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the financial statements. These procedures included testing the effectiveness of controls relating to management's allowance for loan losses estimation process, which included controls over the estimated probability of default and estimated loss given default assumptions, as well as management's consideration of environmental factors used within the allowance for loan losses related to loans collectively evaluated for impairment. These procedures also included, among others, testing management's process for determining the allowance for loan losses, which included (i) testing the completeness and accuracy of certain data used in the estimate; (ii) evaluating the appropriateness of the methodology and models; and (iii) evaluating the reasonableness of management's estimated probability of default and estimated loss given default assumptions, as well as the reasonableness of management's consideration of environmental factors in determining the allowance for loan losses.

PricewaterhouseCoopers LLP

Austin, Texas
March 1, 2023

We have served as the Company's auditor since at least 2002. We have not been able to determine the specific year we began serving as auditor of the Company.

Balance Sheets

Farm Credit Bank of Texas

(dollars in thousands)	December 31, 2022	2021	2020
Assets			
Cash	**$ 141,487**	$ 156,986	$ 128,302
Federal funds sold and overnight investments	**301,678**	194,223	208,229
Investment securities	**6,654,952**	6,560,239	5,548,167
Loans	**28,264,222**	25,674,558	21,824,201
Less allowance for loan losses	**15,706**	11,869	9,608
Net loans	**28,248,516**	25,662,689	21,814,593
Accrued interest receivable	**122,465**	67,762	64,984
Premises and equipment, net	**134,754**	148,218	142,002
Other assets	**386,288**	303,271	321,228
Total assets	**$ 35,990,140**	$ 33,093,388	$ 28,227,505
Liabilities and Shareholders' Equity			
Liabilities			
Bonds and notes, net	**$ 33,971,742**	$ 30,790,428	$ 25,873,429
Accrued interest payable	**135,676**	63,051	58,595
Reserve for losses on unfunded commitments	**2,052**	1,430	1,934
Preferred stock dividends payable	**11,600**	11,600	11,600
Patronage payable	**46,071**	39,017	37,487
Other liabilities	**199,636**	189,470	252,927
Total liabilities	**34,366,777**	31,094,996	26,235,972
Commitments and Contingencies (Note 14)			
Shareholders' Equity			
Preferred stock	**750,000**	750,000	750,000
Capital stock	**471,029**	410,373	359,988
Allocated retained earnings	**74,043**	66,490	59,765
Unallocated retained earnings	**868,650**	868,365	850,607
Accumulated other comprehensive loss	**(540,359)**	(96,836)	(28,827)
Total shareholders' equity	**1,623,363**	1,998,392	1,991,533
Total liabilities and shareholders' equity	**$ 35,990,140**	$ 33,093,388	$ 28,227,505

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

Statements of Comprehensive Income

Farm Credit Bank of Texas

(dollars in thousands)	Year Ended December 31, 2022	2021	2020
Interest Income			
Loans	**$ 793,581**	$ 577,290	$ 610,907
Investment securities	**120,433**	72,551	94,753
Total interest income	**914,014**	649,841	705,660
Interest Expense			
Bonds and notes	**527,852**	282,030	367,682
Net Interest Income	**386,162**	367,811	337,978
Provision for credit losses	**4,580**	1,725	1,081
Net interest income after provision for credit losses	**381,582**	366,086	336,897
Noninterest Income			
Patronage income	**26,771**	23,484	23,669
Fees for services to associations	**4,485**	3,475	3,179
Fees for loan-related services	**12,586**	17,846	16,355
Refunds from Farm Credit System Insurance Corporation (FCSIC)	**—**	—	2,380
Other income (loss), net	**2,568**	3,239	1,619
Total noninterest income	**46,410**	48,044	47,202
Noninterest Expense			
Salaries and employee benefits	**60,187**	56,864	49,899
Occupancy and equipment	**34,871**	31,826	28,087
FCSIC premiums	**22,414**	15,488	8,720
Other components of net periodic postretirement benefit cost	**309**	268	253
Other operating expenses	**40,325**	55,093	46,003
Total noninterest expense	**158,106**	159,539	132,962
Net Income	**$ 269,886**	$ 254,591	$ 251,137
Other comprehensive (loss) income			
Change in postretirement benefit plans	**2,919**	118	(90)
Change in unrealized (loss) gain on investments	**(576,540)**	(109,872)	76,795
Change in cash flow derivative instruments	**130,098**	41,745	(53,901)
Total other comprehensive (loss) income	**(443,523)**	(68,009)	22,804
Comprehensive (loss) income	**$ (173,637)**	$ 186,582	$ 273,941

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

Statements of Changes In Shareholders' Equity

Farm Credit Bank of Texas

(dollars in thousands)	Preferred Stock	Capital Stock	Retained Earnings Allocated	Retained Earnings Unallocated	Accumulated Other Comprehensive Loss	Total Shareholder Equity
Balance at December 31, 2019	$ 700,000	$ 335,262	$ 52,451	$ 808,101	$ (51,631)	$ 1,844,183
Net income	—	—	—	251,137	—	251,137
Other comprehensive income	—	—	—	—	22,804	22,804
Capital stock and allocated retained earnings issued	—	27,709	—	—	—	27,709
Capital stock and allocated retained earnings retired	—	(2,983)	—	—	—	(2,983)
Preferred stock issued	350,000	—	—	—	—	350,000
Preferred stock retired	(300,000)	—	—	—	—	(300,000)
Issuance cost on preferred stock	—	—	—	(3,949)	—	(3,949)
Preferred stock dividends	—	—	—	(44,806)	—	(44,806)
Patronage distributions						
Cash	—	—	—	(152,562)	—	(152,562)
Shareholders' equity	—	—	7,314	(7,314)	—	—
Balance at December 31, 2020	$ 750,000	$ 359,988	$ 59,765	$ 850,607	$ (28,827)	$ 1,991,533
Net income	—	—	—	254,591	—	254,591
Other comprehensive loss	—	—	—	—	(68,009)	(68,009)
Capital stock and allocated retained earnings issued	—	55,948	—	—	—	55,948
Capital stock and allocated retained earnings retired	—	(5,563)	—	—	—	(5,563)
Issuance cost on preferred stock	—	—	—	(17)	—	(17)
Preferred stock dividends	—	—	—	(46,400)	—	(46,400)
Patronage distributions						
Cash	—	—	—	(183,691)	—	(183,691)
Shareholders' equity	—	—	6,725	(6,725)	—	—
Balance at December 31, 2021	$ 750,000	$ 410,373	$ 66,490	$ 868,365	$ (96,836)	$ 1,998,392
Net income	—	—	—	269,886	—	269,886
Other comprehensive loss	—	—	—	—	(443,523)	(443,523)
Capital stock and allocated retained earnings issued	—	63,786	—	—	—	63,786
Capital stock and allocated retained earnings retired	—	(3,130)	—	—	—	(3,130)
Preferred stock dividends	—	—	—	(46,400)	—	(46,400)
Patronage distributions						
Cash	—	—	—	(215,648)	—	(215,648)
Shareholders' equity	—	—	7,553	(7,553)	—	—
Balance at December 31, 2022	**$ 750,000**	**$ 471,029**	**$ 74,043**	**$ 868,650**	**$ (540,359)**	**$ 1,623,363**

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

Statements of Cash Flows

Farm Credit Bank of Texas

(dollars in thousands)	Year Ended December 31, 2022	2021	2020
Cash Flows From Operating Activities			
Net income	**$ 269,886**	$ 254,591	$ 251,137
Reconciliation of net income to net cash provided by operating activities			
Provision for credit losses	**4,580**	1,649	1,081
Depreciation and amortization on premises and equipment	**14,008**	12,949	10,670
Discount accretion on loans (premium amortization)	**(6,083)**	3,025	1,495
Amortization and accretion on debt instruments	**45,966**	17,453	46,103
Premium amortization on investments	**436**	10,259	6,456
(Gain) loss on sale of loans	**(21)**	(299)	(2,946)
Allocated equity patronage from System bank	**(2,561)**	(2,757)	(2,745)
Loss (gain) on disposal of premises and equipment	**85**	56	(58)
(Increase) decrease in accrued interest receivable	**(54,703)**	(2,778)	14,918
Increase in other assets, net	**(72,713)**	(25,102)	(15,073)
Increase (decrease) in accrued interest payable	**72,626**	4,456	(26,066)
Increase (decrease) in other liabilities, net	**38,212**	(5,402)	(24,363)
Net cash provided by operating activities	**309,718**	268,100	260,609
Cash Flows From Investing Activities			
Net (increase) decrease in Federal funds sold and overnight investments	**(107,455)**	14,006	166,115
Investment securities			
Purchases	**(2,378,184)**	(3,595,360)	(2,561,691)
Proceeds from maturities, calls and prepayments	**1,706,495**	2,463,157	2,379,005
Increase in loans, net	**(3,125,127)**	(3,874,499)	(2,417,974)
Proceeds from sale of loans	**533,734**	4,868	111,051
Proceeds from sale of premises and equipment	**105**	137	185
Expenditures for premises and equipment	**(735)**	(19,358)	(43,943)
Investment in other earning assets	**(5,657)**	(4,104)	(673)
Net cash used in investing activities	**(3,376,824)**	(5,011,153)	(2,367,925)
Cash Flows From Financing Activities			
Bonds and notes issued	**37,503,438**	43,409,149	40,955,587
Bonds and notes retired	**(34,368,090)**	(38,509,603)	(38,602,167)
Decrease (increase) in cash collateral posted with a counterparty	**48,117**	50,384	(32,684)
Increase (decrease) in cash collateral posted by a counterparty	**62,480**		
Preferred stock issued	**—**	—	350,000
Preferred stock retired	**—**	—	(300,000)
Issuance costs on preferred stock	**—**	(17)	(3,949)
Capital stock issued	**63,786**	55,948	27,709
Capital stock retired and allocated retained earnings distributed	**(3,130)**	(5,563)	(2,983)
Cash dividends on preferred stock	**(46,400)**	(46,400)	(54,818)
Cash patronage distributions paid	**(208,594)**	(182,161)	(148,683)
Net cash provided by financing activities	**3,051,607**	4,771,737	2,188,012
Net increase (decrease) in cash	**(15,499)**	28,684	80,696
Cash at beginning of year	**156,986**	128,302	47,606
Cash at End of Year	**$ 141,487**	$ 156,986	$ 128,302
Supplemental Schedule of Noncash Investing and Financing Activities			
Net (decrease) increase in unrealized gains on investment securities	**$ (576,540)**	$ (109,872)	$ 76,795
Preferred stock dividends payable	**11,600**	11,600	11,600
Patronage distributions cash payable	**46,071**	39,017	37,487
Patronage distribution allocated equities	**7,553**	6,724	7,314
Right-of-use asset recognized in exchange for operating lease liabilities	**—**	—	484
Supplemental Schedule of Noncash Increase in Bonds and Notes Related to Hedging Activities	**—**	—	162
Supplemental Disclosure of Cash Flow Information			
Interest paid	**$ 455,227**	$ 277,574	$ 393,748

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

Notes to Financial Statements

Farm Credit Bank of Texas

(dollars in thousands, except per share amounts and as otherwise noted)

Note 1 — Organization and Operations

A. Organization:

The Farm Credit Bank of Texas (FCBT or Bank) is one of the banks of the Farm Credit System (System), a nationwide system of cooperatively owned banks and associations established by acts of Congress. The System is subject to the provisions of the Farm Credit Act of 1971, as amended (Farm Credit Act). The System specializes in providing financing and related services to qualified borrowers for agricultural and rural purposes.

As of December 31, 2022, there were three Farm Credit Banks (FCBs), each of which has specific lending authority within its chartered territory, and one Agricultural Credit Bank (ACB) — collectively, the “System banks” — which has nationwide lending authority for lending to cooperatives. The ACB also has the lending authorities of an FCB within its chartered territories. The Bank is chartered to serve the states of Alabama, Louisiana, Mississippi, New Mexico and Texas.

Each FCB and the ACB serves one or more Federal Land Credit Associations (FLCAs) and/or Agricultural Credit Associations (ACAs). The Bank and its related associations collectively are referred to as the Farm Credit Bank of Texas and affiliated associations (Texas District). The Texas District’s one FLCA, 13 ACA parent associations, each containing two wholly-owned subsidiaries (an FLCA and a Production Credit Association [PCA]), certain Other Financing Institutions (OFIs) and preferred stockholders jointly owned the Bank at December 31, 2022. The Bank's FLCA and ACAs collectively are referred to as Associations.

Each FCB and the ACB provides funding for its district associations and is responsible for supervising their activities. The FCBs and/or associations make loans to or for the benefit of eligible borrower-stockholders for qualified agricultural and rural purposes. District associations borrow the majority of their funds from their related bank. The System banks obtain a substantial majority of funds for their lending operations through the sale of consolidated Systemwide bonds and notes to the public, and also obtain a portion of their funds from internally generated earnings and from the issuance of common and preferred stock.

The Farm Credit Administration (FCA) is delegated authority by Congress to regulate the System banks and associations. The FCA examines the activities of System institutions to ensure their compliance with the Farm Credit Act, FCA regulations, and safe and sound banking practices.

The Farm Credit Act established the Farm Credit System Insurance Corporation (FCSIC) to administer the Insurance Fund. The Insurance Fund is required to be used to (1) insure the timely payment of principal and interest on Systemwide debt obligations (insured debt), (2) ensure the retirement of protected borrower capital at par or stated value and (3) for other specified purposes. The Insurance Fund is also available for the discretionary uses, by FCSIC, of providing assistance to certain troubled System institutions and to cover the operating expenses of FCSIC. Each System bank is required to pay premiums, which may be passed on to the associations, into the Insurance Fund based on its annual average adjusted outstanding insured debt until the assets in the Insurance Fund reach the “secure base amount,” which is defined in the Farm Credit Act as 2.0% of the aggregate insured obligations (adjusted to reflect the reduced risk on loans or investments guaranteed by Federal or state governments) or such other percentage of the aggregate obligations as FCSIC in its sole discretion determines to be actuarially sound. Under the Farm Credit Act, as amended, the FCSIC may return excess funds above the secure base amount to System banks.

B. Operations:

The Farm Credit Act sets forth the types of authorized lending activities, persons eligible to borrow and financial services which can be offered by the Bank.

The Bank lends primarily to Texas District Associations in the form of revolving lines of credit (direct notes) to fund the Associations’ loan portfolios. These direct notes are collateralized by a pledge of substantially all of each Association’s assets. The terms of the revolving direct notes are governed by a general financing agreement between the Bank and each Association. Each advance is structured so that the principal cash flow, repricing characteristics and underlying index (if any) of the advance match those of the assets being funded. By match-funding the Association loans, the interest rate risk is effectively transferred to the Bank.

Advances are also made to fund general operating expenses of the Associations. The FLCA borrows money from the Bank and, in turn, originates and services long-term real estate and agribusiness loans to their members. ACAs borrow from the Bank and in turn originate and service long-term mortgage loans through the FLCA subsidiary and short- and intermediate-term loans through the PCA subsidiary. The OFIs borrow from the Bank and in turn originate and service short- and intermediate-term loans to their members. An Association’s indebtedness to the Bank, under a general financing agreement between the Bank and the Association, represents demand borrowings by the Association to fund the majority, but not all, of its loan advances to Association member-borrowers.

In addition to providing loan funds to the Associations, the Bank also provides banking and support services to them, such as accounting, information systems, human resources and marketing. The fees charged by the Bank for these services are included in the Bank’s noninterest income.

The Bank is also authorized to provide, either directly or in participation with other lenders, credit, credit commitments and related services to eligible borrowers. Eligible borrowers include farmers, ranchers, producers or harvesters of aquatic products, their cooperatives, rural residents and farm-related businesses. The Bank may also lend to qualifying financial institutions engaged in lending to eligible borrowers.

The Bank, in conjunction with other System banks, jointly owns service organizations which were created to provide a variety of services for the System. The Bank has ownership interests in the following service organizations:

- *Federal Farm Credit Banks Funding Corporation (Funding Corporation)* — provides for the issuance, marketing and processing of Systemwide debt securities using a network of investment dealers and dealer banks. The Funding Corporation also provides financial accounting and reporting services.
- *Farm Credit System Building Association* — leases premises and equipment to the FCA, as required by the Farm Credit Act.
- *Farm Credit System Association Captive Insurance Company* — reciprocal insurer that provides insurance services to its member organizations.

In addition, the Farm Credit Council acts as a full-service, federated trade association which represents the System before Congress, the Executive Branch and others, and provides support services to System institutions on a fee basis.

Note 2 — Summary of Significant Accounting Policies

The accounting and reporting policies of the Bank conform to generally accepted accounting principles in the United States of America (GAAP) and prevailing practices within the banking industry. The preparation of financial statements in conformity with GAAP requires the management of the Bank to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant estimates are discussed in these notes as applicable. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements. Actual results could differ from these estimates. Material estimates that are particularly susceptible to significant change in the near term relate to the determination of the allowance for loan losses and the determination of fair value of financial instruments.

The accompanying financial statements include the accounts of the Bank and reflect the investments in and allocated earnings of the service organizations in which the Bank has partial ownership interests.

The multiemployer structure of certain retirement and benefit plans of the Texas District results in the recording of these plans only in the combined financial statements of the Texas District.

A. Cash:

Cash, as included in the financial statements, represents cash on hand and on deposit at banks and the Federal Reserve.

B. Federal Funds Sold and Overnight Investments:

The Bank holds Federal funds sold and other overnight funds primarily to maintain a liquidity reserve and manage short-term surplus funds. Securities purchased under agreements to resell and securities sold under agreements to repurchase are treated as collateralized financing transactions.

C. Investment Securities:

The Bank, as permitted under FCA regulations, holds eligible investments for purposes of maintaining a liquidity reserve, managing short-term surplus funds and managing interest rate risk in an amount not to exceed 35% of its total outstanding loans.

The Bank's investments are generally held to maturity unless needed for liquidity purposes and, accordingly, have been classified as available-for-sale at December 31, 2022, 2021 and 2020. These investments are reported at fair value, and unrealized holding gains and losses on investments are netted and reported as a separate component of shareholders' equity on the balance sheet (accumulated other comprehensive gain/loss). Changes in the fair value of these investments are reflected as direct charges or credits to other comprehensive income, unless the investment is deemed to be other-than-temporarily impaired.

The Bank reviews all investments that are in a loss position in order to determine whether the unrealized loss, which is considered an impairment, is temporary or other-than-temporary. Impairment is considered to be other-than-temporary if the present value of cash flows expected to be collected from the debt security is less than the amortized cost basis of the security (any such shortfall is referred to as a "credit loss"). If the Bank intends to sell an impaired debt security or is more likely than not to be required to sell the security before recovery of its amortized cost basis less any current-period credit loss, the impairment is other-than-temporary and will be recognized currently in earnings in an amount equal to the entire difference between fair value and amortized cost. If a credit loss exists, but the Bank does not intend to sell the impaired debt security and is not more likely than not to be required to sell before recovery, the impairment is other-than-temporary and will be separated into (i) the estimated amount relating to credit loss, and (ii) the amount relating to all other factors. Only the estimated credit loss amount is recognized currently in earnings, with the remainder of the loss amount recognized in other comprehensive income. In subsequent periods, if the present value of cash flows expected to be collected is less than the amortized cost basis, the Bank would record an additional other-than-temporary impairment and adjust the yield of the security prospectively. The amount of total other-than-temporary impairment for an available-for-sale security that previously was impaired is determined as the difference between its carrying amount prior to the determination of other-than-temporary impairment and its fair value.

Gains and losses on the sales of investments available-for-sale are determined using the specific identification method. Premiums and discounts are amortized or accreted into interest income over the term of the respective issues. The Bank does not hold investments for trading purposes.

All or a portion of the unrealized holding gain or loss of an available-for-sale security that is designated as a hedged item in a fair value hedge is recognized in earnings during the period of the hedge.

The Bank may also hold additional investments in accordance with other investment programs approved by the FCA. These programs allow the Bank to make investments that further the System's mission to serve rural America. These other investments are not included in the Bank's liquidity calculations and are not covered by the eligible investment limitations specified by the FCA regulations. Agricultural mortgage-backed securities (AMBS) issued by the Federal Agricultural Mortgage Corporation (Farmer Mac) are considered other investments in the available-for-sale portfolio and are excluded from the limitation and the Bank's liquidity calculations.

The Bank's holdings in investment securities are more fully described in Note 3, "Investment Securities."

D. Loans and Reserves for Credit Losses:

Long-term real estate mortgage loans can have maturities ranging from 5 to 40 years. Substantially all short- and intermediate-term loans for agricultural production or operating purposes have maturities of 10 years or less.

Loans are carried at their principal amount outstanding adjusted for charge-offs and any unearned income or unamortized premium or discount. Interest on loans is accrued and credited to interest income based on the daily principal amount outstanding. Funds which are held by the Bank on behalf of the borrowers, where legal right of setoff exists and which can be used to reduce outstanding loan balances at the Bank's discretion, are netted against loans on the balance sheets.

Loan origination fee income is capitalized and the fee is amortized over the life of the related loans as an adjustment to yield.

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 loan and are generally considered substandard or doubtful, which is in accordance with the loan rating model, as described herein. Impaired loans include nonaccrual loans, troubled debt restructurings (TDRs), and loans 90 days past due still accruing interest. A loan is past due when any contractually scheduled loan payments have not been received in full on or before the contractual due date and remains due.

A restructured loan constitutes a troubled debt restructuring if for economic or legal reasons related to the debtor's financial difficulties the Bank grants a concession to the debtor that it would not otherwise consider. A concession is generally granted in order to minimize the Bank's economic loss and avoid foreclosure. Concessions vary by program, are borrower-specific and may include interest rate reductions, term extensions, payment deferrals or the acceptance of additional collateral in lieu of payments. In limited circumstances, principal may be forgiven. A loan restructured in a troubled debt restructuring is an impaired loan.

Impaired loans are generally placed in nonaccrual status when principal or interest is delinquent for 90 days (unless adequately secured and in the process of collection), circumstances indicate that collection of principal and interest is in doubt or legal action, including foreclosure or other forms of collateral conveyance, has been initiated to collect the outstanding principal and interest. When a loan is placed in nonaccrual status, accrued interest that is considered uncollectible is either reversed (if accrued in the current year) or charged against the allowance for loan losses (if accrued in the prior year). Loans are charged off at the time they are determined to be uncollectible.

When loans are in nonaccrual status, the interest portion of payments received in cash is recognized as interest income if collection of the recorded investment in the loan is fully expected and the loan does not have a remaining unrecovered prior charge-off associated with it. Otherwise, loan payments received are applied against the recorded investment in the loan. Nonaccrual loans may be returned to accrual status when contractual principal and interest are current, the borrower has demonstrated payment performance, and collection of future payments is no longer in doubt. If previously unrecognized interest income exists at the time the loan is transferred to accrual status, cash received at the time of or subsequent to the transfer is first recorded as interest income until such time as the recorded balance equals the contractual indebtedness of the borrower.

The Bank uses a two-dimensional loan rating model based on an internally generated combined System risk-rating guidance that incorporates a 14-point risk rating scale to identify and track the probability of borrower default and a separate scale addressing loss given default over a period of time. Probability of default is the probability that a borrower will experience a default within 12 months from the date of the determination of the risk rating. A default is considered to have occurred if the lender believes the borrower will not be able to pay its obligation in full or the borrower is past due more than 90 days. The loss given default is management's estimate as to the anticipated principal loss on a specific loan assuming default has occurred or is expected to occur within the next 12 months.

Each of the probability of default categories carries a distinct percentage of default probability. The 14-point probability of default rating scale provides for granularity of the probability of default, especially in the acceptable ratings. There are nine acceptable categories that range from a borrower of the highest quality to a borrower of minimally acceptable quality. The probability of default between 1 and 9 is very narrow and would reflect almost no default to a minimal default percentage. The probability of default grows more rapidly as a loan moves from a 9 to other assets especially mentioned and grows significantly as a loan moves to a substandard (viable) level. A substandard (nonviable) rating indicates that the probability of default is almost certain.

The credit risk-rating methodology is a key component of the Bank's allowance for loan losses evaluation, and is generally incorporated into the Bank's loan underwriting standards and internal lending limit. The allowance for loan losses is maintained at a level considered adequate by management to provide for probable and estimated losses inherent in the loan portfolio. The allowance is based on a periodic evaluation of the loan portfolio by management in which numerous factors are considered, including economic conditions, loan portfolio composition, collateral value, portfolio quality, current production conditions and economic conditions, and prior loan loss experience.

The allowance for loan losses is a valuation account used to reasonably estimate loan losses as of the financial statement date. The allowance is increased through provisions for loan losses and loan recoveries and is decreased through loan loss reversals and loan charge-offs. Determining the appropriate allowance for loan losses balance involves significant judgment about when a loss has been incurred and the amount of that loss. The determination of the allowance for loan losses is based on management's current judgments about the credit quality of its loan portfolio. A specific allowance may be established for impaired loans under authoritative accounting guidance. Impairment of these loans is measured based on the present value of expected future cash flows discounted at the loan's effective interest rate or, as practically expedient, at the loan's observable market price or fair value of the collateral if the loan is collateral-dependent.

The allowance for loan losses encompasses various judgments, evaluations and appraisals with respect to the loans and their underlying security that, by their nature, contain elements of uncertainty and imprecision. Changes in the agricultural economy and their impact on borrower repayment capacity will cause these various judgments, evaluations and appraisals to change over time. Management considers the following factors in determining and supporting the levels of allowances for loan losses: the concentration of lending in agriculture, combined with uncertainties associated with farmland values, commodity prices, exports, government assistance programs, regional economic effects and weather-related influences.

The allowance for loan losses includes components for loans individually evaluated for impairment and loans collectively evaluated for impairment. Generally, for loans individually evaluated, the allowance for loan losses represents the difference between the recorded investment in the loan and the present value of the cash flows expected to be collected discounted at the loan's effective interest rate, or at the fair value of the collateral, if the loan is collateral-dependent. For those loans collectively evaluated for impairment, the allowance for loan losses is determined using the risk-rating model.

E. Other Property Owned:

Other property owned (OPO), consisting of real and personal property acquired through foreclosure or deed-in-lieu of foreclosure, would be recorded at fair value, based on appraisal, less estimated selling costs upon acquisition and included in other assets on the balance sheet. Any initial reduction in the carrying amount of a loan to the fair value of the collateral received would be charged to the allowance for loan losses. On at least an annual basis, revised estimates to the fair value, established by appraisal, less cost to sell would be reported as adjustments to the carrying amount of the asset, provided that such adjusted value was not in excess of the carrying amount at acquisition. Income and expenses from operations and carrying value adjustments would be included in net losses (gains) on OPO in the statements of comprehensive income. The Bank did not hold any OPO at December 31, 2022, 2021 and 2020.

F. Premises and Equipment:

Premises and equipment are carried at cost less accumulated depreciation. Depreciation expense is calculated using the straight-line method over the estimated useful lives of three years for automobiles, and three to 10 years for furniture, equipment and certain leasehold improvements. Computer software and hardware are amortized over three to 10 years. Gains and losses on dispositions are reflected in current operating results. Maintenance and repairs are charged to operating expense, and improvements are capitalized and amortized over the remaining useful life of the asset.

G. Other Assets and Other Liabilities:

The Bank is a limited partner in certain Rural Business Investment Companies (RBICs) for various relationship and strategic reasons. These RBICs facilitate equity and debt investments in agriculture-related businesses that create growth and job opportunities in rural America. These investments are accounted for under the equity method as the Bank is considered to have significant influence.

The Bank is authorized under the Farm Credit Act to accept "advance conditional payments" (ACPs) from borrowers. To the extent the borrower's access to such ACPs is restricted and the legal right of setoff exists, the ACPs are netted against the borrower's related loan balance. Unrestricted advance conditional payments are included in other liabilities. ACPs are not insured, and interest is generally paid by the Bank on such balances. There were no significant balances of ACPs at December 31, 2022, 2021 and 2020.

Investment in another System bank represents non-marketable investments consisting of stock in another institution regulated by the FCA. This investment is carried at cost and evaluated for impairment based on the ultimate recoverability of the par value rather than by recognizing temporary declines in value.

Derivative financial instruments are included on the balance sheet at fair value, as either other assets or other liabilities.

H. Employee Benefit Plans:

Employees of the Bank participate in one of two Texas District-wide retirement plans (a defined benefit plan and a defined contribution plan) and are eligible to participate in the 401(k) plan of the Texas District. Within the 401(k) plan, a certain percentage of employee contributions is matched by the Bank. The 401(k) plan costs are expensed as incurred. Additionally, certain qualified individuals in the Bank may participate in a separate, nonqualified 401(k) plan.

The structure of the Texas District's defined benefit plan (DB Plan) is characterized as multiemployer, since neither the assets, liabilities nor cost of the DB Plan is segregated or separately accounted for by participating employers (Bank and Associations). No portion of any surplus assets is available to any participating employer. Participating employers are jointly and severally liable for the DB Plan obligations. Upon withdrawal or termination of their participation in the DB Plan, a participating employer must pay all associated costs of its withdrawal from the DB Plan, including its unfunded liability (the difference between replacement annuities and the withdrawing employer's share of allocated plan assets). As a result, participating employers of the DB Plan only recognize as cost the required contributions for the period and a liability for any unpaid contributions required for the period of their financial statements. DB Plan obligations, assets and the components of annual benefit expenses are recorded and reported upon combination at the Texas District level only. The Bank records current contributions to the DB Plan as an expense in the current year.

In addition to pension benefits, the Bank provides certain health care benefits to qualifying retired employees (other postretirement benefits). These benefits are not characterized as multiemployer and, consequently, the liability for these benefits is included in other liabilities. Bank employees hired after January 1, 2004, will be eligible for retiree medical benefits for themselves and their spouses but will be responsible for 100% of the related premiums.

The Bank records an accrual of the expected cost of providing postretirement benefits other than pensions (primarily health care benefits) to an employee and an employee's beneficiaries and covered dependents during the years that the employee renders service necessary to become eligible for these benefits.

I. Income Taxes:

The Bank is exempt from Federal and certain other income taxes as provided in the Farm Credit Act.

J. Derivative Instruments and Hedging Activity:

In the normal course of business, the Bank enters into derivative financial instruments, including interest rate swaps and caps, which are principally used to manage interest rate risk on assets, liabilities and anticipated transactions. Derivatives are recorded on the balance sheet as assets and liabilities at fair value.

Changes in the fair value of derivatives are recorded 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 hedges, which hedge changes in the fair value of assets, liabilities or firm commitments, changes in the fair value of the derivative are recorded in earnings and will generally be offset by changes in the hedged item's fair value. For cash flow hedges, which hedge the exposure to variability in expected future cash flows, changes in the fair value of the derivative will generally be offset by an entry to accumulated other comprehensive income (loss) in statement of shareholders' equity. The ineffective portion of all hedges is recorded in current period earnings. For derivatives not designated as a hedging instrument, the related change in fair value is recorded in current period earnings.

The Bank formally documents all relationships between hedging instruments and hedged items, as well as its risk-management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value or cash flow hedges to (1) specific assets or liabilities on the balance sheet or (2) firm commitments or forecasted transactions. The Bank also formally assesses (both at the hedge's inception and on an ongoing basis) whether the derivatives that are used in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of hedged items and whether those derivatives may be expected to remain highly effective in future periods. The Bank uses regression analysis (or other statistical analysis) to assess the effectiveness of its hedges. The Bank discontinues hedge accounting prospectively when the Bank determines that 1) a derivative is no longer effective in offsetting changes in the fair value or cash flows of a hedged item; 2) the derivative expires or is sold, terminated, or exercised; 3) it is no longer probable that the forecasted transaction will occur; 4) a hedged firm commitment no longer meets the definition of a firm commitment; or 5) management determines that designating the derivative as a hedging instrument is no longer appropriate. For cash flow hedges, when the Bank discontinues hedge accounting, any remaining accumulated other comprehensive income (loss) would be amortized into earnings over the remaining life of the original hedged item. For fair value hedges, when the Bank discontinues hedge accounting, changes in fair value of the derivative will be recorded in current period earnings. The Bank may use interest rate swaps whose critical terms match the corresponding hedged item, thereby qualifying for short-cut treatment, and are presumed to be highly effective in offsetting changes in the fair value. The Bank would discontinue hedge accounting prospectively if it were determined that a hedge had not been or is not expected to be effective as a hedge. In all situations in which hedge accounting is discontinued and the derivative remains outstanding, the Bank will carry the derivative at its fair value on the balance sheet, recognizing changes in fair value in current period earnings. See Note 17, "Derivative Instruments and Hedging Activity," for additional disclosures about derivative instruments.

K. Fair Value Measurements:

The Financial Accounting Standards Board (FASB) guidance defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements.

It describes three levels of inputs that may be used to measure fair value:

Level 1 — Quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 1 assets include assets held in trust funds, which relate to our supplemental retirement plan. The trust funds include investments that are actively traded and have quoted net asset values that are observable in the marketplace.

Level 2 — Observable inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly. Level 2 inputs include the following: (a) quoted prices for similar assets or liabilities in active markets; (b) quoted prices for identical or similar assets or liabilities in markets that are not active so that they are traded less frequently than exchange-traded instruments, the prices are not current or principal market information is not released publicly; (c) inputs other than quoted prices that are observable such as interest rates and yield curves, prepayment speeds, credit risks and default rates; and (d) inputs derived principally from or corroborated by observable market data by correlation or other means. This category generally includes certain U.S. government and agency mortgage-backed debt securities, certificates of deposit, corporate debt securities, commercial paper and derivative contracts. The market value of collateral assets and liabilities is their face value, plus accrued interest, as these instruments are cash balances; therefore, fair value approximates face value.

Level 3 — Unobservable inputs are those that are supported by little or no market activity and that are significant to the determination of the fair value of the assets or liabilities. These unobservable inputs reflect the reporting entity's own assumptions about assumptions that market participants would use in pricing the asset or liability. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation. This category generally includes the Bank's Federal Agricultural Mortgage Corporation (Farmer Mac) guaranteed agricultural mortgage-backed securities (AMBS) and certain loans.

The fair value disclosures are presented in Note 16, "Fair Value Measurements."

L. Off-Balance-Sheet Credit Exposures:

Commitments to extend credit are agreements to lend to customers, generally having fixed expiration dates or other termination clauses that may require payment of a fee. Commercial letters of credit are conditional commitments issued to guarantee the performance of a customer to a third party. These letters of credit are issued to facilitate commerce and typically result in the commitment being funded when the underlying transaction is consummated between the customer and the third party. The credit risk associated with commitments to extend credit and commercial letters of credit is essentially the same as that involved with extending loans to customers and is subject to normal credit policies. Collateral may be obtained based on management's assessment of the customer's creditworthiness.

M. Recently Issued or Adopted Accounting Pronouncements:

The Bank adopted the Financial Accounting Standards Board (FASB) guidance entitled "Measurement of Credit Losses on Financial Instruments" and other subsequently issued accounting standards updates related to credit losses on January 1, 2023. The guidance replaced the incurred loss impairment methodology with a single allowance framework for financial assets carried at amortized cost and certain off-balance sheet credit exposures. This guidance requires management to consider in its estimate of the allowance for credit losses (ACL) relevant historical events, current conditions and reasonable and supportable forecasts that affect the collectability of the assets. In addition, the guidance amends existing impairment guidance for held-to-maturity and available-for-sale investments to incorporate an allowance, which will allow for the reversal of credit impairments in the event that the credit of an issuer improves.

Also adopted effective January 1, 2023, was the updated guidance entitled "Financial Instruments–Credit Losses: Troubled Debt Restructurings and Vintage Disclosure." The guidance eliminates the accounting guidance for troubled debt restructurings (TDRs) by creditors while enhancing disclosure requirements for certain loan refinancings and restructurings when a borrower is experiencing financial difficulty. The creditor is required to determine whether a modification results in a new loan or a continuation of an existing loan among other disclosures specific to modifications with borrowers that are experiencing financial difficulties. The update also requires disclosure of current period gross write-offs by year of origination for financing receivables and net investments in leases.

The Bank estimated loan losses over a two-year forecast period using a range of macroeconomic variables and then revert to its historical loss experience over the remaining life of the loan. The Bank did not expect credit losses on a significant portion of its available-for-sale securities as a majority of the portfolio consists of U.S. Treasury and U.S. agency securities that inherently have an immaterial risk of loss.

The adoption of this guidance resulted in an increase in the Bank's allowance for credit losses of approximately $8.4 million and a corresponding decrease of approximately $8.4 million in retained earnings.

In December 2022, the FASB issued an update entitled "Reference Rate Reform–Deferral of the Sunset Date of Topic 848." In March 2020, the FASB issued guidance entitled "Facilitation of the Effects of Reference Rate Reform on Financial Reporting (Reference Rate Reform)," which provided optional expedients and exceptions for applying GAAP to contracts, hedging relationships and other transactions affected by reference rate reform to ease the potential burden related to reference rate reform (transition away from the London Inter-Bank Offered Rate (LIBOR) with the optional amendments effective as of March 12, 2020 through December 31, 2022, the sunset date. At the time the update was issued, the expectation was that LIBOR would cease to be published after December 31, 2021.

In January 2021, the FASB issued an update to Reference Rate Reform whereby certain derivative instruments could be modified to change the rate used for margining, discounting, or contract price alignment. An entity could elect to apply the new amendments on a full retrospective basis as of any date from the beginning of an interim period that includes or is subsequent to March 12, 2020, or on a prospective basis to new modifications from any date within an interim period that includes or is subsequent to the date of the update, up to the date that financial statements are available to be issued. These amendments did not apply to contract modifications made or new hedging relationships entered into after December 31, 2022, and existing hedging relationships evaluated for effectiveness in periods after December 31, 2022.

Subsequent to the issuance of the January 2021 update, it was announced that the intended cessation date for various tenors of LIBOR would be June 30, 2023, thus necessitating the update to the sunset date. The amendments in the current update defer the sunset date from December 31, 2022 to December 31, 2024, after which entities will no longer be permitted to apply the relief.

In March 2022, the FASB issued an update entitled "Derivatives and Hedging: Fair Value Hedging – Portfolio Layer Method." Under current guidance, the last-of-layer method enables an entity to apply fair value hedging to a stated amount of a closed portfolio of prepayable financial assets (or one or more beneficial interests secured by a portfolio of prepayable financial instruments) without having to consider prepayment risk or credit risk when measuring those assets. This guidance will allow entities to apply the portfolio layer method to portfolios of all financial assets, including both prepayable and non-prepayable financial assets. This scope expansion is consistent with the FASB's efforts to simplify hedge accounting and allows entities to apply the same method to similar hedging strategies. For public business entities, the amendments in this update are effective for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years. Early adoption is permitted on any date on or after the issuance of this update for any entity that has adopted amendments previously issued. Although the Bank does not have a current derivative hedging strategy in which the last-of-layer method is used, the Bank is currently evaluating the impact of this update on future derivative hedging strategies.

Note 3 — Investment Securities

The Bank's available-for-sale investments include a liquidity portfolio and a portfolio of other investments. The liquidity portfolio consists primarily of agency-guaranteed debt instruments, mortgage-backed investment securities (MBS), U.S. Treasury securities, asset-backed investment securities (ABS), corporate debt and certificates of deposit. The liquidity portfolio's MBS were Federal agency-guaranteed collateralized MBS, including the Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC) securities. The Bank's other investments portfolio consists of Farmer Mac AMBS purchased from Associations in 2010, 2012 and 2014, as a part of the Bank's Capitalized Participation Pool (CPP) program. In accordance with this program, any positive impact to the net income of the Bank can be returned as patronage to the Association if declared by the Bank's board of directors. The declared patronage approximates the net earnings of the respective pool. The Farmer Mac securities are backed by loans originated by the Associations and previously held by the associations under the Farmer Mac long-term standby commitments to purchase agreements.

During the years ended December 31, 2022, 2021 and 2020, no investment securities were sold. The Bank would use the specific identification method to determine the cost of securities sold.

A summary of the amortized cost and fair value of the available-for-sale investment securities in the liquidity portfolio and other investment portfolio are included in the following tables:

	December 31, 2022				
	Amortized Cost	**Gross Unrealized Gains**	**Gross Unrealized Losses**	**Fair Value**	**Weighted Average Yield**
Liquidity Portfolio:					
Agency-guaranteed debt	**$ 54,888**	**$ —**	**$ (1,587)**	**$ 53,301**	**2.79 %**
Certificates of deposit	**200,000**	**—**	**(991)**	**199,009**	**4.46**
Corporate debt	**240,914**	**135**	**(6,271)**	**234,778**	**2.83**
Federal agency collateralized mortgage-backed securities:					
GNMA	**3,070,832**	**736**	**(388,548)**	**2,683,020**	**2.04**
FNMA and FHLMC	**2,652,701**	**49**	**(183,541)**	**2,469,209**	**3.04**
U.S. Treasury securities	**841,444**	**2**	**(22,602)**	**818,844**	**1.91**
Asset-backed securities	**188,983**	**345**	**(2,807)**	**186,521**	**3.76**
Total liquidity investments	**$ 7,249,762**	**$ 1,267**	**$ (606,347)**	**$ 6,644,682**	**2.53 %**
Other Investments:					
Agricultural mortgage-backed securities	**$ 11,595**	**$ —**	**$ (1,325)**	**$ 10,270**	**4.81 %**

	December 31, 2021				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Weighted Average Yield
Liquidity Portfolio:					
Agency-guaranteed debt	$ 84,269	$ 1,032	$ (8)	$ 85,293	1.60 %
Corporate debt	232,885	2,238	(543)	234,580	1.51
Federal agency collateralized mortgage-backed securities:					
GNMA	2,822,556	11,106	(40,180)	2,793,482	1.42
FNMA and FHLMC	2,601,773	15,018	(15,936)	2,600,855	1.03
U.S. Treasury securities	650,216	14	(2,666)	647,564	0.26
Asset-backed securities	183,788	786	(318)	184,256	0.81
Total liquidity investments	$ 6,575,487	$ 30,194	$ (59,651)	$ 6,546,030	1.14 %
Other Investments:					
Agricultural mortgage-backed securities	$ 14,616	$ 8	$ (415)	$ 14,209	4.23 %

	December 31, 2020				
	Amortized Cost	Gross Unrealized Gains	Gain Unrealized Losses	Fair Value	Weighted Average Yield
Liquidity Portfolio:					
Agency-guaranteed debt	$ 111,760	$ 2,633	$ (14)	$ 114,379	1.61%
Commercial Paper	49,990	1	—	49,991	0.22
Corporate debt	279,024	5,808	—	284,832	1.69
Federal agency collateralized mortgage-backed securities:					
GNMA	1,959,146	39,163	(1,735)	1,996,574	1.87
FNMA and FHLMC	2,421,854	34,715	(489)	2,456,080	1.20
U.S. Treasury securities	426,451	22	(20)	426,453	0.11
Asset-backed securities	196,231	457	(294)	196,394	0.68
Total liquidity investments	$ 5,444,456	$ 82,799	$ (2,552)	$5,524,703	1.36%
Other Investments:					
Agricultural mortgage-backed securities	$ 23,704	$ 26	$ (266)	$ 23,464	4.28 %

There were no investments in a held-to-maturity portfolio at December 31, 2022, 2021 or 2020.

A summary of contractual maturity, amortized cost, estimated fair value and weighted average yield of the available-for-sale liquidity portfolio at December 31, 2022:

	Due in One Year Or Less	Due After One Year Through Five Years	Due After Five Years Through 10 Years	Due After 10 Years	Total
Liquidity Portfolio:					
Agency-guaranteed debt	$ —	$ 53,301	$ —	$ —	$ 53,301
Certificates of deposit	199,009	—	—	—	199,009
Corporate debt	42,414	192,364	—	—	234,778
Federal agency collateralized mortgage-backed securities					
GNMA	—	12,218	16,859	2,653,943	2,683,020
FNMA and FHLMC	1,473	174,978	1,001,569	1,291,189	2,469,209
U.S. Treasury securities	391,426	427,418	—	—	818,844
Asset-backed securities	—	80,990	51,829	53,702	186,521
Total fair value	$ 634,322	$ 941,269	$ 1,070,257	$ 3,998,834	$ 6,644,682
Total amortized cost	$ 641,331	$ 972,873	$ 1,094,833	$ 4,540,725	$ 7,249,762
Weighted average yield	2.62%	2.58%	4.06%	2.14%	2.53%

Collateralized mortgage obligations (CMOs) have stated contractual maturities in excess of 15 years at purchase. However, the security structure of the CMOs is designed to produce a relatively short-term life. At December 31, 2022, the CMO portfolio had a weighted average remaining life of 5.09 years.

Investments in the available-for-sale other investments portfolio at December 31, 2022:

	Due After One Year Through Five Years	Due After Five Years Through 10 Years	Total
Fair value of agricultural mortgage-backed securities	$ 7,410	$ 2,860	$ 10,270
Total amortized cost	8,246	3,349	11,595
Weighted average yield	4.75%	4.96%	4.81%

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

	December 31, 2022					
	Less Than 12 Months		Greater Than 12 Months		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Agency-guaranteed debt	**$ 47,760**	**$ (1,567)**	**$ 5,541**	**$ (20)**	**$ 53,301**	**$ (1,587)**
Certificates of deposit	**199,009**	**(991)**	**—**	**—**	**199,009**	**(991)**
Corporate debt	**154,993**	**(2,946)**	**46,651**	**(3,325)**	**201,644**	**(6,271)**
Federal agency collateralized mortgage-backed securities						
GNMA	**1,149,659**	**(103,469)**	**1,407,300**	**(285,079)**	**2,556,959**	**(388,548)**
FNMA and FHLMC	**1,713,903**	**(63,213)**	**733,304**	**(120,328)**	**2,447,207**	**(183,541)**
U.S. Treasury securities	**455,102**	**(11,796)**	**338,933**	**(10,806)**	**794,035**	**(22,602)**
Asset-backed securities	**68,602**	**(381)**	**41,699**	**(2,426)**	**110,301**	**(2,807)**
Total	**$ 3,789,028**	**$ (184,363)**	**$ 2,573,428**	**$ (421,984)**	**$ 6,362,456**	**$ (606,347)**

	December 31, 2021					
	Less Than 12 Months		Greater Than 12 Months		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Agency-guaranteed debt	$ —	$ —	$ 7,786	$ (8)	$ 7,786	$ (8)
Corporate debt	69,424	(543)	—	—	69,424	(543)
Federal agency collateralized mortgage-backed securities						
GNMA	1,704,937	(33,045)	212,637	(7,135)	1,917,574	(40,180)
FNMA and FHLMC	1,119,824	(13,912)	86,872	(2,024)	1,206,696	(15,936)
U.S. Treasury securities	597,468	(2,666)	—	—	597,468	(2,666)
Asset-backed securities	67,848	(297)	9,374	(21)	77,222	(318)
Total	$ 3,559,501	$ (50,463)	$ 316,669	$ (9,188)	$ 3,876,170	$ (59,651)

	December 31, 2020					
	Less Than 12 Months		Greater Than 12 Months		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Agency-guaranteed debt	$ —	$ —	$ 9,975	$ (14)	$ 9,975	$ (14)
Federal agency collateralized mortgage-backed securities						
GNMA	242,805	(1,418)	141,308	(317)	384,113	(1,735)
FNMA and FHLMC	112,470	(262)	50,426	(227)	162,896	(489)
U.S. Treasury securities	101,035	(20)	—	—	101,035	(20)
Asset-backed securities	64,137	(115)	29,921	(179)	94,058	(294)
Total	$ 520,447	$ (1,815)	$ 231,630	$ (737)	$ 752,077	$ (2,552)

Other-Than-Temporarily Impaired Investments Evaluation

As more fully disclosed in Note 2, "Summary of Significant Accounting Policies," the guidance for other-than-temporary impairment contemplates numerous factors in determining whether an impairment is other-than-temporary, including: (i) whether or not an entity intends to sell the security, (ii) whether it is more likely than not that an entity would be required to sell the security before recovering its costs or (iii) whether or not an entity expects to recover the security's entire amortized cost basis (even if it does not intend to sell). The Bank performs a quarterly evaluation on a security-by-security basis considering all available information. If the Bank intends to sell the security or it is more likely than not that it would be required to sell the security, the impairment loss equals the full difference between amortized cost and fair value of the security. When the Bank does not intend to sell securities in an unrealized loss position, other-than-temporary impairment is considered using various factors, including the length of time and the extent to which the fair value is less than cost; adverse conditions specifically related to the industry, geographic area and the condition of the underlying collateral; payment structure of the security; ratings by rating agencies; the creditworthiness of bond insurers; and volatility of the fair value changes. The Bank uses estimated cash flows over the remaining lives of the underlying collateral to assess whether credit losses exist. In estimating cash flows, the Bank considers factors such as expectations of relevant market and economic data, including underlying loan level data for mortgage-backed and asset-backed securities and credit enhancements.

There were no other-than-temporarily impaired (OTTI) securities at December 31, 2022, 2021 or 2020.

Note 4 — Loans and Reserves for Credit Losses

Loans comprised the following categories at December 31:

	2022	2021	2020
Direct notes receivable from District Associations and OFIs	$ **19,551,823**	$ 18,316,444	$ 15,033,669
Participations purchased	**8,712,399**	7,358,114	6,790,532
Total loans	$ **28,264,222**	$ 25,674,558	$ 21,824,201

A summary of the Bank's loan types at December 31 follows:

	2022	2021	2020
Direct notes receivable from District Associations	$ **19,499,945**	$ 18,277,377	$ 15,002,072
Real estate mortgage	**1,096,090**	1,037,029	825,679
Production and intermediate-term	**1,067,229**	881,991	815,698
Agribusiness			
Loans to cooperatives	**503,670**	480,124	474,133
Processing and marketing	**3,407,164**	2,696,278	2,566,234
Farm-related business	**261,843**	223,272	174,520
Communications	**785,563**	648,619	583,708
Energy (rural utilities)	**1,303,639**	1,182,406	1,200,204
Water and waste disposal	**187,044**	137,415	135,472
Rural home	**1,815**	2,168	1,801
Mission-related	**2,172**	2,257	2,344
Lease receivables	**7,885**	9,305	10,739
International	**88,285**	57,250	—
Loans to other financing institutions	**51,878**	39,067	31,597
Total	$ **28,264,222**	$ 25,674,558	$ 21,824,201

The Bank's capital markets loan portfolio predominantly includes participations, syndications and purchased whole loans, along with other financing structures within our lending authorities. The Bank also refers to the capital markets portfolio as participations purchased. In addition to purchasing loans from our Associations, which may exceed their hold limits, the Bank seeks the purchase of participations and syndications originated outside of the Texas District's territory by other System institutions, commercial banks and other lenders. Our capital markets loan portfolio depends to a significant degree on our relationships with other Farm Credit institutions. These loans may be held as earning assets of the Bank or sub-participated to the associations or to other System entities.

The Bank purchases or sells participation interests with other parties in order to diversify risk, manage loan volume and comply with FCA regulations.

The following table presents information on loan participations, excluding syndications, at December 31, 2022:

	Other Farm Credit Institutions		Non–Farm Credit Institutions		Total	
	Participations Purchased	Participations Sold	Participations Purchased	Participations Sold	Participations Purchased	Participations Sold
Real estate mortgage	$ 1,626,665	$ 605,219	$ 53,695	$ —	$ 1,680,360	$ 605,219
Production and intermediate-term	1,845,664	1,033,499	101,752	—	1,947,416	1,033,499
Agribusiness	2,653,118	856,925	53,873	—	2,706,991	856,925
Communications	952,731	166,773	—	—	952,731	166,773
Energy (rural utilities)	1,373,510	69,885	—	—	1,373,510	69,885
Water and waste disposal	235,346	48,126	—	—	235,346	48,126
Rural home	4,123	—	—	—	4,123	—
International	128,545	40,051	—	—	128,545	40,051
Mission-related	2,172	—	—	—	2,172	—
Lease receivables	9,200	1,320	—	—	9,200	1,320
Direct note receivable from District Associations	—	4,350,000	—	—	—	4,350,000
Total	**$ 8,831,074**	**$ 7,171,798**	**$ 209,320**	**$ —**	**$ 9,040,394**	**$ 7,171,798**

A substantial portion of the Bank's loan portfolio consists of direct notes receivable from Associations. As described in Note 1, "Organization and Operations," these notes are used by the Associations to fund their loan portfolios, and therefore the Bank's implicit concentration of credit risk in various agricultural commodities approximates that of the Texas District as a whole. Loan concentrations are considered to exist when there are amounts loaned to borrowers engaged in similar activities, which could cause them to be similarly impacted by economic or other conditions. A substantial portion of the Associations' lending activities is collateralized and the Associations' exposure to credit loss associated with lending activities is reduced accordingly. An estimate of the Bank's credit risk exposure is considered in the Bank's allowance for loan losses.

During 2022, the Bank sold an additional $500 million of direct notes to another System bank. At December 31, 2022, the Bank had sold a total of $4.35 billion of Association direct notes to another System bank. The sales included participations of 11 direct notes receivable from Associations. These sales provide diversification benefits among Farm Credit entities.

The Bank has purchased loan participations and Farmer Mac guaranteed AMBS from Associations in CPP transactions. As a condition of the transactions, the Bank redeemed stock in the amount of 2.0% of the par value of the loans and AMBS purchased, and the Associations bought Bank stock equal to 8.0% of the purchased loans' par value and 1.6% of the Farmer Mac AMBS' par value. There were no CPP loan purchases for the year ended December 31, 2022. CPP loans held at December 31, 2022, totaled $104.7 million and were included in loans on the balance sheet. The balance of the Farmer Mac AMBS CPP was $10.3 million at December 31, 2022, and is included in investment securities on the balance sheet.

The Bank also purchased loans from Associations in Non-Capitalized Participation Pool (NCPP) transactions. As a condition of these transactions, the Bank redeems common stock in the amount of 2.0% of the par value of the loans purchased. During 2022, the Bank purchased $50.8 million in loan participations from a District Association in a NCPP transaction which resulted in net stock retirements of $1.0 million. NCPP loans held at December 31, 2022, totaled $171.4 million, and were included in loans on the balance sheet.

Impaired loans are loans for which it is probable that all principal and interest will not be collected according to the contractual terms of the loans. Interest income recognized and cash payments received on nonaccrual impaired loans are applied in a similar manner as for nonaccrual loans, as described in Note 2, "Summary of Significant Accounting Policies."

The following table presents information concerning nonaccrual loans, accruing restructured loans and accruing loans 90 days or more past due, collectively referred to as "impaired loans." Restructured loans are loans whose terms have been modified and where concessions have been granted because of borrower financial difficulties. The Bank's impaired loans consisted of participations purchased; no direct notes to Associations were impaired at December 31, 2022, 2021 and 2020.

	December 31,		
	2022	2021	2020
Nonaccrual loans			
Current as to principal and interest	**$ 23,215**	$ 3,755	$ —
Past due	**6,779**	1,998	1,341
Total nonaccrual loans	**29,994**	5,753	1,341
Loans past due 90 days or more and still accruing interest	**—**	—	—
Accruing restructured loans	**2,195**	2,280	2,369
Total impaired accrual loans	**2,195**	2,280	2,369
Total impaired loans	**$ 32,189**	$ 8,033	$ 3,710

Nonperforming assets (including related accrued interest) and related credit quality statistics are as follows:

	December 31,		
	2022	2021	2020
Nonaccrual loans:			
Real estate mortgage	**$ —**	$ —	$ 1,341
Agribusiness	**26,559**	—	—
Energy & water/waste disposal	**3,435**	5,753	—
Total nonaccrual loans	**29,994**	5,753	1,341
Accruing restructured loans:			
Mission-related	**2,195**	2,280	2,369
Total nonperforming loans and assets	**$ 32,189**	$ 8,033	$ 3,710

One credit quality indicator utilized by the Bank is the Farm Credit Administration Uniform Loan Classification System that categorizes loans into five categories. The categories are defined as follows:

- *Acceptable* — assets are expected to be fully collectible and represent the highest quality;
- *Other assets especially mentioned (OAEM)* — assets are currently collectible but exhibit some potential weakness;
- *Substandard* — assets exhibit some serious weakness in repayment capacity, equity and/or collateral pledged on the loan;
- *Doubtful* — assets exhibit similar weaknesses to substandard assets; however, doubtful assets have additional weaknesses in existing factors, conditions and values that make collection in full highly questionable, and
- *Loss* — assets are considered uncollectible.

The following table presents loans and related accrued interest classified under the Farm Credit Administration Uniform Loan Classification System as a percentage of total loans and related accrued interest receivable by loan type:

	December 31,		
	2022	2021	2020
Real estate mortgage:			
Acceptable	**99.9 %**	98.6 %	99.7 %
OAEM	**0.1**	1.4	0.1
Substandard/Doubtful	**—**	—	0.2
	100.0 %	100.0 %	100.0 %
Production and intermediate-term:			
Acceptable	**99.2 %**	91.8 %	91.8 %
OAEM	**—**	8.2	8.2
Substandard/Doubtful	**0.8**	—	—
	100.0 %	100.0 %	100.0 %
Agribusiness:			
Acceptable	**96.3 %**	96.9 %	95.7 %
OAEM	**1.7**	2.2	4.2
Substandard/Doubtful	**2.0**	0.9	0.1
	100.0 %	100.0 %	100.0 %
Energy & water/waste disposal:			
Acceptable	**98.8 %**	98.4 %	99.7 %
OAEM	**0.8**	—	—
Substandard/Doubtful	**0.4**	1.6	0.3
	100.0 %	100.0 %	100.0 %
Rural home:			
Acceptable	**100.0 %**	100.0 %	100.0 %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
Communications:			
Acceptable	**100.0 %**	100.0 %	100.0 %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
Direct notes to associations:			
Acceptable	**100.0 %**	100.0 %	100.0 %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
Loans to other financing institutions:			
Acceptable	**100.0 %**	67.1 %	100.0 %
OAEM	**—**	32.9	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
Mission-related:			
Acceptable	**100.0 %**	100.0 %	100.0 %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
Lease receivables:			
Acceptable	**100.0 %**	100.0 %	100.0 %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	100.0 %
International:			
Acceptable	**100.0 %**	100.0 %	— %
OAEM	**—**	—	—
Substandard/Doubtful	**—**	—	—
	100.0 %	100.0 %	— %
Total loans:			
Acceptable	**99.4 %**	99.1 %	99.1 %
OAEM	**0.3**	0.7	0.9
Substandard/Doubtful	**0.3**	0.2	—
	100.0 %	**100.0 %**	**100.0 %**

The following tables provide an aging analysis of past due loans (including accrued interest) as of:

December 31, 2022	**30-89 Days Past Due**	**90 Days or More Past Due**	**Total Past Due**	**Not Past Due or Less Than 30 Days Past Due**	**Total Loans**	**Recorded Investment Greater Than 90 Days Past Due and Accruing**
Real estate mortgage	**$ 164**	**$ —**	**$ 164**	**$ 1,107,641**	**$ 1,107,805**	**$ —**
Production and intermediate-term	**—**	**—**	**—**	**1,074,968**	**1,074,968**	**—**
Agribusiness	**5,393**	**1,384**	**6,777**	**4,192,808**	**4,199,585**	**—**
Energy & water/waste disposal	**—**	**2**	**2**	**1,498,411**	**1,498,413**	**—**
Rural home	**—**	**—**	**—**	**1,821**	**1,821**	**—**
Lease receivables	**—**	**—**	**—**	**7,929**	**7,929**	**—**
Communications	**—**	**—**	**—**	**787,968**	**787,968**	**—**
Direct notes to associations	**—**	**—**	**—**	**19,543,825**	**19,543,825**	**—**
Loans to OFIs	**—**	**—**	**—**	**52,054**	**52,054**	**—**
International	**—**	**—**	**—**	**89,201**	**89,201**	**—**
Mission-related	**—**	**—**	**—**	**2,195**	**2,195**	**—**
Total	**$ 5,557**	**$ 1,386**	**$ 6,943**	**$ 28,358,821**	**$ 28,365,764**	**$ —**

December 31, 2021	30-89 Days Past Due	90 Days or More Past Due	Total Past Due	Not Past Due or Less Than 30 Days Past Due	Total Loans	Recorded Investment Greater Than 90 Days Past Due and Accruing
Real estate mortgage	$ 1,248	$ —	$ 1,248	$ 1,042,232	$ 1,043,480	$ —
Production and intermediate-term	—	—	—	885,104	885,104	—
Agribusiness	—	—	—	3,411,397	3,411,397	—
Energy & water/waste disposal	—	1,998	1,998	1,322,817	1,324,815	—
Rural home	—	—	—	2,176	2,176	—
Lease receivables	—	—	—	9,342	9,342	—
Communications	—	—	—	648,865	648,865	—
Direct notes to associations	—	—	—	18,309,914	18,309,914	—
Loans to OFIs	—	—	—	39,125	39,125	—
International	—	—	—	57,341	57,341	—
Mission-related	—	—	—	2,280	2,280	—
Total	$ 1,248	$ 1,998	$ 3,246	$ 25,730,593	$ 25,733,839	$ —

December 31, 2020	30-89 Days Past Due	90 Days or More Past Due	Total Past Due	Not Past Due or Less Than 30 Days Past Due	Total Loans	Recorded Investment Greater Than 90 Days Past Due and Accruing
Real estate mortgage	$ 388	$ 1,341	$ 1,729	$ 829,661	$ 831,390	$ —
Production and intermediate-term	—	—	—	818,507	818,507	—
Agribusiness	—	—	—	3,227,160	3,227,160	—
Energy & water/waste disposal	—	—	—	1,340,612	1,340,612	—
Rural home	—	—	—	1,807	1,807	—
Lease receivables	—	—	—	10,777	10,777	—
Communications	—	—	—	583,838	583,838	—
Direct notes to associations	—	—	—	15,031,851	15,031,851	—
Loans to OFIs	—	—	—	31,653	31,653	—
Mission-related	—	—	—	2,369	2,369	—
Total	$ 388	$ 1,341	$ 1,729	$ 21,878,235	$ 21,879,964	$ —

Note: The recorded investment in the receivable is the face amount increased or decreased by applicable accrued interest and unamortized premium, discount, finance charges or acquisition costs and may also reflect a previous direct write-down of the investment.

A restructuring of a debt constitutes a troubled debt restructuring (TDR) if the creditor for economic or legal reasons related to the debtor's financial difficulties grants a concession to the debtor that it would not otherwise consider. TDRs are undertaken in order to improve the likelihood of recovery on the loan and may include, but are not limited to, forgiveness of principal or interest, interest rate reductions that are lower than the current market rate for new debt with similar risk, or significant term or payment extensions.

As of December 31, 2022, the total recorded investment of TDRs was $2.7 million, with $2.2 million classified as accrual with a specific allowance for loan losses of $168 thousand.

There were no payment defaults on TDRs that occurred within the previous 12 months. A payment default is defined as a payment that is 30 days past due after the date the loan was restructured.

There were no additional commitments to lend to borrowers whose loans have been modified in TDRs at December 31, 2022, December 31, 2021 and December 31, 2020.

The following table presents additional information regarding TDRs, which includes both accrual and nonaccrual loans, that received the TDR designation during the year ended December 31, 2022. The predominate form of concession granted for loans that received the TDR designation in 2022 was forgiveness of principal and interest. There were no new TDRs identified during the years ended December 31, 2021 and December 31, 2020. The premodification outstanding recorded investment represents the recorded investment of the loans as of the quarter end prior to the restructuring. The postmodification outstanding recorded investment represents the recorded investment of the loans as of the quarter end the restructuring occurred.

	Premodification Outstanding Recorded Investment**	Postmodification Outstanding Recorded Investment**
TDRs:		
Energy	$ 696	$ 540
Total	$ 696	$ 540

**The recorded investment is the face amount of the receivable increased or decreased by applicable accrued interest and unamortized premium, discount, finance charges or acquisition costs and may also reflect a previous direct write-down of the investment.

The following table provides information on outstanding loans restructured in TDRs at period end. These loans are included as impaired loans in the impaired loan table:

	Total Loans Modified as TDRs			TDRs in Nonaccrual Status		
	December 31,			December 31,		
	2022	2021	2020	**2022**	2021	2020
Real estate mortgage	**$ —**	$ —	$ 665	**$ —**	$ —	$ 665
Energy	**540**	—	—	**540**	—	—
Agribusiness	**—**	—	—	**—**	—	—
Mission-related	**2,195**	2,280	2,369	**—**	—	—
Total	**$ 2,735**	$ 2,280	$ 3,034	**$ 540**	$ —	$ —

Additional impaired loan information at December 31, 2022, is as follows:

	Recorded Investment	Unpaid Principal Balance*	Related Allowance	Average Impaired Loans	Interest Income Recognized
Impaired loans with a related allowance for credit losses:					
Processing and marketing	$ 26,540	$ 26,682	$ 3,977	$ 6,907	$ —
Energy & water/waste disposal	3,435	3,592	1,110	5,416	—
Mission-related	154	154	60	154	12
Total	$ 30,129	$ 30,428	$ 5,147	$ 12,477	$ 12
Impaired loans with no related allowance for credit losses:					
Production and intermediate-term	$ —	$ 91	$ —	$ —	$ —
Processing and marketing	19	1,352	—	2	—
Energy & water/waste disposal	—	2,098	—	—	—
Mission-related	2,041	2,041	—	2,048	124
Total	$ 2,060	$ 5,582	$ —	$ 2,050	$ 124
Total impaired loans:					
Production and intermediate-term	$ —	$ 91	$ —	$ —	$ —
Processing and marketing	26,559	28,034	3,977	6,909	—
Energy & water/waste disposal	3,435	5,690	1,110	5,416	—
Mission-related	2,195	2,195	60	2,202	136
Total	$ 32,189	$ 36,010	$ 5,147	$ 14,527	$ 136

Additional impaired loan information at December 31, 2021, is as follows:

	Recorded Investment	Unpaid Principal Balance*	Related Allowance	Average Impaired Loans	Interest Income Recognized
Impaired loans with a related allowance for credit losses:					
Real estate mortgage	$ —	$ 44	$ —	$ 237	$ —
Energy & water/waste disposal	5,753	5,755	1,352	4,858	—
Mission-related	159	159	58	159	13
Total	$ 5,912	$ 5,958	$ 1,410	$ 5,254	$ 13
Impaired loans with no related allowance for credit losses:					
Real estate mortgage	$ —	$ —	$ —	$ 438	$ 19
Processing and marketing	—	1,192	—	—	—
Energy & water/waste disposal	—	2,098	—	—	—
Mission-related	2,121	2,121	—	2,130	303
Total	$ 2,121	$ 5,411	$ —	$ 2,568	$ 322
Total impaired loans:					
Real estate mortgage	$ —	$ 44	$ —	$ 675	$ 19
Processing and marketing	—	1,192	—	—	—
Energy & water/waste disposal	5,753	7,853	1,352	4,858	—
Mission-related	2,280	2,280	58	2,289	316
Total	$ 8,033	$ 11,369	$ 1,410	$ 7,822	$ 335

Additional impaired loan information at December 31, 2020, is as follows:

	Recorded Investment	Unpaid Principal Balance*	Related Allowance	Average Impaired Loans	Interest Income Recognized
Impaired loans with a related allowance for credit losses:					
Agribusiness	$ —	$ —	$ —	$ 5,049	$ 1,416
Energy & water/waste disposal	—	—	—	7,001	—
Mission-related	164	164	55	163	8
Total	$ 164	$ 164	$ 55	$ 12,213	$ 1,424
Impaired loans with no related allowance for credit losses:					
Real estate mortgage	$ 1,341	$ 1,341	$ —	$ 1,431	$ 50
Agribusiness	—	—	—	134	—
Processing and marketing	—	1,192	—	—	—
Energy & water/waste disposal	—	—	—	276	—
Mission-related	2,205	2,205	—	2,209	82
Total	$ 3,546	$ 4,738	$ —	$ 4,050	$ 132
Total impaired loans:					
Real estate mortgage	$ 1,341	$ 1,341	$ —	$ 1,431	$ 50
Agribusiness	—	—	—	5,183	1,416
Processing and marketing	—	1,192	—	—	—
Energy & water/waste disposal	—	—	—	7,277	—
Mission-related	2,369	2,369	55	2,372	90
Total	$ 3,710	$ 4,902	$ 55	$ 16,263	$ 1,556

*Unpaid principal balance represents the recorded principal balance of the loans.

Interest income on nonaccrual and accruing restructured loans that would have been recognized under the original terms of the loans were as follows at December 31:

	2022	2021	2020
Interest income which would have been recognized under the original loan terms	**$ 1,384**	$ 479	$ 1,591
Less: interest income recognized	**136**	335	1,556
Foregone interest income	**$ 1,248**	$ 144	$ 35

A summary of changes in the allowance and reserves for unfunded commitments and period-end recorded investment (including accrued interest) in loans follows:

	Real Estate Mortgage	**Production and Intermediate -Term**	**Agri-business**	**Commun -ications**	**Energy and Water/Waste Disposal**	**Lease Receivables**	**Rural Residential Real Estate**	**Direct Notes to Associations**	**Loans to OFIs**	**Internat-ional**	**Mission-Related**	**Total**
Allowance for credit losses:												
Balance at December 31, 2021	$ 466	$ 1,316	$ 5,952	$ 409	$ 3,606	$ 35	$ —	$ —	$ —	$ 27	$ 58	$ 11,869
Charge-offs	—	—	—	—	(155)	—	—	—	—	—	—	(155)
Recoveries	25	—	2	—	—	—	—	—	—	—	8	35
Provision for credit losses (loan loss reversal)	13	57	5,973	125	(1,550)	(32)	—	—	—	1	(7)	4,580
Other*	(57)	38	(644)	(13)	50	—	—	—	—	3	—	(623)
Balance at December 31, 2022	$ 447	$ 1,411	$ 11,283	$ 521	$ 1,951	$ 3	$ —	$ —	$ —	$ 31	$ 59	$ 15,706
Individually evaluated for impairment	$ —	$ —	$ 3,977	$ —	$ 1,110	$ —	$ —	$ —	$ —	$ —	$ 60	$ 5,147
Collectively evaluated for impairment	447	1,411	7,306	521	841	3	—	—	—	31	(1)	10,559
Loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—	—	—	—
Balance at December 31, 2022	$ 447	$ 1,411	$ 11,283	$ 521	$ 1,951	$ 3	$ —	$ —	$ —	$ 31	$ 59	$ 15,706
Recorded investments in loans outstanding:												
Ending balance for loans individually evaluated for impairment	$ —	$ —	$ 26,559	$ —	$ 3,435	$ —	$ —	$ 19,543,825	$ 52,054	$ —	$ 2,195	$19,628,068
Ending balance for loans collectively evaluated for impairment	1,107,805	1,074,968	4,173,026	787,968	1,494,978	7,929	1,821	—	—	89,201	—	8,737,696
Ending balance for loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—	—	—	—
Balance at December 31, 2022	$1,107,805	$ 1,074,968	$4,199,585	$787,968	$ 1,498,413	$ 7,929	$ 1,821	$ 19,543,825	$ 52,054	$ 89,201	$ 2,195	$28,365,764

*Reserve for losses on letters of credit and unfunded commitments recorded in other liabilities.

	Real Estate Mortgage	Production and Intermediate -Term	Agri-business	Commun-ications	Energy and Water/ Waste Disposal	Lease Receivables	Rural Residential Real Estate	Direct Notes to Associations	Loans to OFIs	Internat-ional	Mission-Related	Total
Allowance for credit losses:												
Balance at December 31, 2020	$ 314	$ 1,875	$ 6,196	$ 341	$ 748	$ 79	$ —	$ —	$ —	$ —	$ 55	$ 9,608
Charge-offs	(44)	—	—	—	—	—	—	—	—	—	—	(44)
Recoveries	40	—	—	—	35	—	—	—	—	—	—	75
Provision for credit losses (loan loss reversal)	160	(693)	(765)	82	2,941	(44)	—	—	—	41	3	1,725
Other*	(4)	134	521	(14)	(118)	—	—	—	—	(14)	—	505
Balance at December 31, 2021	$ 466	$ 1,316	$ 5,952	$ 409	$ 3,606	$ 35	$ —	$ —	$ —	$ 27	$ 58	$ 11,869
Individually evaluated for impairment	$ —	$ —	$ —	$ —	$ 1,352	$ —	$ —	$ —	$ —	$ —	$ 58	$ 1,410
Collectively evaluated for impairment	466	1,316	5,952	409	2,254	35	—	—	—	27	—	10,459
Loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—	—	—	—
Balance at December 31, 2021	$ 466	$ 1,316	$ 5,952	$ 409	$ 3,606	$ 35	$ —	$ —	$ —	$ 27	$ 58	$ 11,869
Recorded investments in loans outstanding:												
Ending balance for loans individually evaluated for impairment	$ —	$ —	$ —	$ —	$ 5,753	$ —	$ —	$ 18,309,914	$ —	$ —	$ 2,280	$18,317,947
Ending balance for loans collectively evaluated for impairment	1,043,480	885,104	3,411,397	648,865	1,319,062	9,342	2,176	—	39,125	57,341	—	7,415,892
Ending balance for loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—		—	—
Balance at December 31, 2021	$1,043,480	$ 885,104	$3,411,397	$ 648,865	$1,324,815	$ 9,342	$ 2,176	$ 18,309,914	$39,125	$ 57,341	$ 2,280	$25,733,839

*Reserve for losses on letters of credit and unfunded commitments recorded in other liabilities.

	Real Estate Mortgage	Production and Intermediate -Term	Agri- business	Commun- ications	Energy and Water/ Waste Disposal	Lease Receivables	Rural Residential Real Estate	Direct Notes to Associations	Loans to OFIs	Mission- Related	Total
Allowance for credit losses:											
Balance at December 31, 2019	$ 166	$ 1,085	$ 6,097	$ 345	$ 3,699	$ 40	$ —	$ —	$ —	$ 55	$ 11,487
Charge-offs	—	—	—	—	(2,846)	—	—	—	—	—	(2,846)
Recoveries	11	—	—	—	—	—	—	—	—	—	11
Provision for credit losses (loan loss reversal)	151	1,017	444	2	(572)	39	—	—	—	—	1,081
Other*	(14)	(227)	(345)	(6)	467	—	—	—	—	—	(125)
Balance at December 31, 2020	$ 314	$ 1,875	$ 6,196	$ 341	$ 748	$ 79	$ —	$ —	$ —	$ 55	$ 9,608
Individually evaluated for impairment	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ 55	$ 55
Collectively evaluated for impairment	314	1,875	6,196	341	748	79	—	—	—	—	9,553
Loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—	—	—
Balance at December 31, 2020	$ 314	$ 1,875	$ 6,196	$ 341	$ 748	$ 79	$ —	$ —	$ —	$ 55	$ 9,608
Recorded investments in loans outstanding:											
Ending balance for loans individually evaluated for impairment	$ 1,341	$ —	$ —	$ —	$ —	$ —	$ —	$ 15,031,851	$ —	$ 2,369	$15,035,561
Ending balance for loans collectively evaluated for impairment	830,049	818,507	3,227,160	583,838	1,340,612	10,777	1,807	—	31,653	—	6,844,403
Ending balance for loans acquired with deteriorated credit quality	—	—	—	—	—	—	—	—	—	—	—
Balance at December 31, 2020	$ 831,390	$ 818,507	$3,227,160	$ 583,838	$1,340,612	$ 10,777	$ 1,807	$ 15,031,851	$ 31,653	$ 2,369	$21,879,964

*Reserve for losses on letters of credit and unfunded commitments recorded in other liabilities.

The Bank's reserves for credit losses include the allowance for loan losses and a reserve for losses on unfunded commitments. The reserve for losses on unfunded commitments includes letters of credit and unused loan commitments, and is recorded in other liabilities on the balance sheet. At December 31, 2022, 2021 and 2020, the reserve totaled $2.1 million, $1.4 million and $1.9 million, respectively, representing management's estimate of probable credit losses related to letters of credit and unfunded commitments.

Note 5 — Leases

The Bank evaluates arrangements at inception to determine if they meet the criteria for a lease. Leases with an initial term of twelve months or less are not recorded on the balance sheet with lease expense recognized on a straight-line basis over the lease term. Operating leases are included in other assets for right-of-use (ROU) assets and other liabilities for lease liabilities on the balance sheet.

ROU assets represent the Bank's right to use an underlying asset for the lease term and lease liabilities represent the Bank's obligation to make lease payments arising from the lease. Operating ROU assets and liabilities are recognized based on the present value of the lease payments over the lease term. The Bank's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Bank will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

The Bank maintains a lease for its headquarters facility in Austin, Texas, which currently expires in December 2034. This lease is for approximately 111,500 square feet of office space ranging from $18 to $38 per square foot during the term of the lease. Lease expense for the headquarters facility includes certain operating expenses passed through from the landlord.

The Bank entered a lease for postage machines in June 2017, a lease for copiers in January 2020, and a lease for ice machines in November 2020. The postage machines lease currently expires in September 2023. The copier lease has a term of January 2020 through March 2023. The ice machines lease expired in October 2022 and is currently a month-to-month lease.

Amounts presented on the balance sheet are as follows:

	Balance Sheet Classification	As of December 31, 2022	2021
Operating leases	Operating lease right-of-use asset building	$ 35,432	$ 37,009
	Operating lease right-of-use asset other	49	202
Total lease assets		$ 35,481	$ 37,211
Operating leases	Operating lease right-of-use liabilities building	$ 41,174	$ 42,278
	Operating lease right-of-use liabilities other	49	202
Total lease liabilities		$ 41,223	$ 42,480

Lease expenses, which are included as a component of occupancy and equipment expense in the statement of comprehensive income totaled $5.3 million, $5.3 million and $5.4 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Other information related to leases includes:

	Year Ended December 31, 2022	2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for operating leases	$ 2,897	$ 2,785
Right-of-use assets obtained in exchange for new lease obligations:		
Operating leases	$ —	$ —

The weighted-average remaining lease term for the building, copier and postage leases is 12.07 years and the weighted-average discount rate is 2.42%. The discount rates were determined using the Bank's incremental borrowing rate for bonds for terms relative to the lease terms. The following are the undiscounted cash flows for the operating leases at December 31, 2022:

	Maturities of Lease Liabilities
2023	$ 2,837
2024	3,051
2025	3,481
2026	3,551
2027	3,622
Thereafter	27,463
Total undiscounted cash flows	44,005
Less interest expense	2,782
Lease liability	$ 41,223

The lease expense for leases with terms of 12 months or less was $39 thousand, $38 thousand and $29 thousand for the twelve months ended December 31, 2022, 2021 and 2020, respectively.

Note 6 — Premises and Equipment

Premises and equipment comprised the following at:

	December 31, 2022	2021	2020
Leasehold improvements	$ **3,044**	$ 3,044	$ 3,029
Computer equipment and software	**208,532**	215,514	196,665
Furniture and equipment	**3,105**	3,566	3,763
	214,681	222,124	203,457
Accumulated depreciation	**(79,927)**	(73,906)	(61,455)
Total	$ **134,754**	$ 148,218	$ 142,002

Note 7 — Asset/Liability Offsetting

Most derivative transactions with swap dealers are cleared through a Futures Commission Merchant (FCM). Cleared derivative contracts are required to be 100% collateralized and the Derivatives Clearing Organization (DCO) takes on the obligation of both sides of the transaction. The Bank's interest rate cap derivatives are under bilateral collateral and netting agreements that require the net settlement of covered contracts.

Notwithstanding collateral and netting provisions, our derivative assets and liabilities are not offset on the accompanying balance sheet. The amount of collateral received or pledged is calculated on a net basis by counterparty.

The following tables summarize overnight investments, derivative assets and liabilities and amounts of collateral exchanged pursuant to our agreements.

December 31, 2022	Gross Amounts of Assets/Liabilities Presented on the Balance Sheet	Amounts Not Offset on the Balance Sheet: Cash Collateral Received/ (Pledged)	Amounts Not Offset on the Balance Sheet: Investment Securities Received/Pledged as Collateral	Net Amount
Assets:				
Interest rate swaps and other derivatives	**$ 64,692**	**$ 62,480**	**$ —**	**$ 2,212**
Federal funds sold and overnight investments	**$ 301,678**	**$ —**	**$ —**	**$ 301,678**
Liabilities:				
Interest rate swaps and other derivatives	**$ —**	**$ (42,749)**	**$ —**	**$ (42,749)**

December 31, 2021	Gross Amounts of Assets/Liabilities Presented on the Balance Sheet	Amounts Not Offset on the Balance Sheet: Cash Collateral Pledged	Amounts Not Offset on the Balance Sheet: Investment Securities Received/Pledged as Collateral	Net Amount
Assets:				
Interest rate swaps and other derivatives	$ 338	$ —	$ —	$ 338
Federal funds sold and overnight investments	$ 194,223	$ —	$ —	$ 194,223
Liabilities:				
Interest rate swaps and other derivatives	$ 65,538	$ (90,866)	$ —	$ (25,328)

December 31, 2020	Gross Amounts of Assets/Liabilities Presented on the Balance Sheet	Amounts Not Offset on the Balance Sheet: Cash Collateral Pledged	Amounts Not Offset on the Balance Sheet: Investment Securities Received/Pledged as Collateral	Net Amount
Assets:				
Interest rate swaps and other derivatives	$ 398	$ —	$ —	$ 398
Federal funds sold and overnight investments	$ 208,229	$ —	$ —	$ 208,229
Liabilities:				
Interest rate swaps and other derivatives	$ 73,347	$ (57,684)	$ —	$ 15,663

Note 8 — Other Property Owned

OPO, consisting of real and personal property acquired through foreclosure or deed in lieu of foreclosure, is recorded at fair value, based on appraisal, less estimated selling costs upon acquisition. There was no OPO at December 31, 2022, December 31, 2021 and December 31, 2020, respectively, and there were no sales of OPO during the last three years.

Note 9 — Other Assets and Other Liabilities

Other assets comprised the following at December 31:

	2022	2021	2020
Investment in another System bank	**$ 157,380**	$ 154,819	$ 152,062
Other accounts receivable	**107,272**	59,701	44,074
RBIC investments	**24,930**	19,273	15,168
Fair value of derivatives	**44,961**	18,051	7,702
Operating lease right-of-use asset	**35,481**	37,212	38,821
Cash collateral posted with derivative counterparties	**—**	—	50,380
Other	**16,264**	14,215	13,021
Total	**$ 386,288**	$ 303,271	$ 321,228

Other liabilities comprised the following at December 31:

	2022	2021	2020
Payable to associations for cash management services	**$ 36,747**	$ 31,263	$ 37,317
Accounts payable – participations	**22**	12,882	24,453
Accounts payable – other	**69,344**	58,349	37,373
Fair value of derivatives	**—**	—	73,347
Operating lease liabilities	**41,223**	42,480	43,538
Obligation for nonpension postretirement benefits	**9,718**	12,512	12,532
Mortgage life additional reserve	**4,653**	4,572	4,371
FCSIC premium payable	**22,414**	15,487	8,720
Other	**15,515**	11,925	11,276
Total	**$ 199,636**	$ 189,470	$ 252,927

Note 10 — Bonds and Notes

Systemwide Debt Securities

The System, unlike commercial banks and other depository institutions, obtains funds for its lending operations primarily from the sale of Systemwide debt securities issued by the banks through the Funding Corporation. Systemwide bonds and discount notes (Systemwide debt securities) are the joint and several liability of the System banks. Certain conditions must be met before the Bank can participate in the issuance of Systemwide debt securities. As one condition of participation, the Bank is required by the Farm Credit Act and FCA regulations to maintain specified eligible assets, at least equal in value to the total amount of debt obligations outstanding for which it is primarily liable. This requirement does not provide holders of Systemwide debt securities, or bank and other bonds, with a security interest in any assets of the banks. In general, each bank determines its participation in each issue of Systemwide debt securities based on its funding and operating requirements, subject to the availability of eligible assets as described above and subject to Funding Corporation determinations and FCA approval. At December 31, 2022, the Bank had such specified eligible assets totaling $35.46 billion and obligations and accrued interest payable totaling $34.11 billion, resulting in excess eligible assets of $1.35 billion.

The System banks and the Funding Corporation have entered into the Market Access Agreement (MAA), which establishes criteria and procedures for the banks to provide certain information to the Funding Corporation and, under certain circumstances, for restricting or prohibiting an individual bank's participation in Systemwide debt issuances, thereby reducing other System banks' exposure to statutory joint and several liability. At December 31, 2022, the Bank was and currently remains in compliance with the conditions and requirements of the System banks' and the Funding Corporation's MAA.

Each issuance of Systemwide debt securities ranks equally, in accordance with the FCA regulations, with other unsecured Systemwide debt securities. Systemwide debt securities are not issued under an indenture, and no trustee is provided with respect to these securities. Systemwide debt securities are not subject to acceleration prior to maturity upon the occurrence of any default or similar event.

The Bank's participation in Systemwide debt securities at December 31, 2022, follows (dollars in thousands):

	Systemwide					
	Bonds		Discount Notes		Total	
Year of Maturity	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
2023	$ 8,403,309	2.92%	$ 3,233,798	3.51%	$ 11,637,107	3.08%
2024	6,765,519	2.90	—	—	6,765,519	2.90
2025	2,972,633	1.60	—	—	2,972,633	1.60
2026	2,406,564	1.73	—	—	2,406,564	1.73
2027	2,285,040	2.08	—	—	2,285,040	2.08
Subsequent years	7,904,879	2.67	—	—	7,904,879	2.67
Total	$ 30,737,944	2.57%	$ 3,233,798	3.51%	$ 33,971,742	2.66%

In the preceding table, the weighted average interest rate reflects the effects of interest rate caps and interest rate swaps used to manage the interest rate risk on the bonds and notes issued by the Bank. The Bank's interest rate swap strategy is discussed more fully in Note 2, "Summary of Significant Accounting Policies," and Note 17, "Derivative Instruments and Hedging Activity."

Discount notes are issued with maturities ranging from one to 365 days. The average maturity of discount notes at December 31, 2022, was 142 days.

The Bank's Systemwide callable debt consisted of the following as of December 31, 2022 (dollars in thousands):

Year of Maturity	Amount	Range of Call Dates
2023	$ 1,194,784	1/1/2023-6/14/2023
2024	1,784,109	1/1/2023-6/27/2024
2025	1,888,154	1/1/2023-2/14/2024
2026	1,897,453	1/1/2023-7/13/2023
2027	1,827,024	1/1/2023-12/20/2023
Subsequent years	7,060,465	1/1/2023-3/24/2027
Total	$ 15,651,989	1/1/2023-3/24/2027

Callable debt may be called on the first call date and, generally, every day thereafter with seven days' notice. Expenses associated with the exercise of call options on debt issuances are included in interest expense.

As described in Note 1, "Organization and Operations," the Insurance Fund is available to insure the timely payment of principal and interest on Systemwide debt securities (insured debt) of insured System banks to the extent net assets are available in the Insurance Fund. All other liabilities in the financial statements are uninsured. At December 31, 2022, the assets of the Insurance Fund aggregated $6.67 billion; however, due to the other authorized uses of the Insurance Fund, there is no assurance that the amounts in the Insurance Fund will be sufficient to fund the timely payment of principal and interest on an insured debt obligation in the event of a default by any System bank having primary liability thereon.

FCSIC 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 FCSIC. Under its existing statutory authority, FCSIC may use these funds to provide assistance to the System banks in demanding market circumstances which threaten the Banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10.00 billion and terminates on September 30, 2023, unless otherwise renewed. The decision whether to seek funds from the Federal Financing Bank is at the discretion of FCSIC, 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 will be available if needed by the System.

While the Bank's primary source of liquidity is the ability to access the capital markets to issue Systemwide debt, the Bank also maintains other contingency funding sources including repurchase agreements with several commercial banks, a $75 million uncommitted Federal Funds line of credit and reciprocal emergency lending agreements with other System entities. These alternative funding sources are subject to various terms and conditions, and as a result, there can be no assurance that funding will be available if needed by the Bank. In addition, the Funding Corporation provides contingency financing mechanisms which include emergency and non-emergency purchases of Federal funds from counterparties and direct issuance of Systemwide debt securities to institutional investors.

Note 11 — Shareholders' Equity

Descriptions of the Bank's equities, capitalization requirements, and regulatory capitalization requirements and restrictions are provided below.

A. Description of Bank Equities:

Class B Series 2 Noncumulative Subordinated Perpetual Preferred Stock (Class B-2 preferred stock) — On July 23, 2013, the Bank issued $300.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 2, representing 3,000,000 shares at $100 per share par value, for net proceeds of $296.0 million. Dividends on the Class B-2 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2013, at an annual fixed rate of 6.75% of par value of $100 per share up to, but excluding September 15, 2023, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 4.01%. The Class B-2 preferred stock is not mandatorily redeemable at any time, but may be redeemed in whole or in part at the option of the Bank on any dividend payment date on or after September 15, 2023. The Class B-2 preferred stock ranks, both as to dividends and upon liquidation, pari passu with respect to the existing Class B-3 and Class B-4 preferred stock, and senior to all other classes of the Bank's outstanding capital stock. Class B-2 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to associations and OFIs. For regulatory purposes, the Class B-2 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations. In 2022, 2021 and 2020, Class B-2 preferred stock dividends totaling $20.2 million were declared and paid for each year. At December 31, 2022, dividends payable on Class B-2 preferred stock totaled $5.0 million.

Class B Series 3 Noncumulative Subordinated Perpetual Preferred Stock (Class B-3 preferred stock) — On June 25, 2018, the Bank issued $100.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 3 (Class B-3 preferred stock), representing 100,000 shares at $1,000 per share par value, for net proceeds of $98.7 million. Dividends on the Class B-3 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2018, at an annual fixed rate of 6.20% of par value of $1,000 per share up to, but excluding June 15, 2028, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 3.223%. The Class B-3 preferred stock is not mandatorily redeemable at any time, but may be redeemed in whole or in part at the option of the Bank on any dividend payment date on or after June 15, 2018. The Class B-3 preferred stock ranks pari passu with respect to the existing Class B-2 and Class B-4 preferred stock, and senior to all of the Bank's outstanding capital stock. Class B-3 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to associations and OFIs. For regulatory purposes, the Class B-3 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations. In 2022, 2021 and 2020, Class B-3 preferred stock dividends totaling $6.2 million were declared and paid in each year. At December 31, 2022, dividends payable on Class B-3 preferred stock totaled $1.6 million.

Class B Series 4 Noncumulative Subordinated Perpetual Preferred Stock (Class B-4 preferred stock) — On July 15, 2020, the bank issued $350.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 4 (Class B-4 preferred stock), representing 350,000 shares at $1,000 per share par value, for net proceeds of $346.1 million. Dividends on the Class B-4, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2020, at an annual fixed rate of 5.70% of par value of $1,000 per share up to, but excluding, September 15, 2025, from and after which date will be paid at an annual rate of the 5-year Treasury rate as of the most recent five-year reset dividend determination date plus 5.415%. The Class B-4 is not mandatorily redeemable at any time, but may be redeemed in whole or part at the option of the Bank, with prior approval from the FCA, on any dividend payment date on or after September 15, 2025. The Class B-4 ranks pari passu with respect to the existing Class B-2 and Class B-3 preferred stock and senior to all of the Bank's other outstanding capital stock. Class B-4 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to associations and OFIs. For regulatory purposes, the Class B-4 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations. In 2022 and 2021, Class B-4 preferred stock dividends totaling $20.0 million were declared and paid in each respective year. In 2020, Class B-4 preferred stock dividends totaling $8.0 million were declared and paid. At December 31, 2022, dividends payable on Class B-4 preferred stock totaled $5.0 million.

Class A Voting Common Stock — According to the Bank's bylaws, the minimum and maximum stock investments that the Bank may require of the ACAs and FLCA are 2% (or $1 thousand, whichever is greater) and 5%. The investments in the Bank are required to be in the form of Class A voting common stock (with a par value of $5 per share) and allocated retained earnings. The current investment required of the Associations is 2% of their average borrowings from the Bank. Under the CPP program, the stock investment that the Bank requires is 1.6% of each Farmer Mac AMBS pool and 8% of each loan pool. Under the NCPP program, the Bank redeems stock in the amount of 2.0% of the par value of the loans purchased. No Class A voting common stock may be retired except at the sole discretion of the Bank's board of directors, and provided that after such retirement, the Bank shall meet minimum capital adequacy standards as may from time to time be promulgated by the FCA or such higher level as the board may from time to time establish in the Bank's Capital Plan. There were 94.0 million shares, 81.9 million shares and 71.8 million shares of Class A voting common stock issued and outstanding at December 31, 2022, 2021 and 2020, respectively.

Class A Nonvoting Common Stock — The Bank requires OFIs to make cash purchases of Class A nonvoting common stock (with a par value of $5 per share) in the Bank based on a minimum stock investment of 2% (or $1 thousand, whichever is greater) and on a maximum of 5%. The current investment required of the OFIs is 2% of their average borrowings from the Bank. No Class A nonvoting common stock may be retired except at the sole discretion of the Bank's board of directors, and provided that after such retirement, the Bank shall meet minimum capital adequacy standards as may from time to time be promulgated by the FCA or such higher level as the board may from time to time establish in the Bank's Capital Plan. The Bank has a first lien on these equities for the repayment of any indebtedness to the Bank. There were 174 thousand shares, 150 thousand shares and 154 thousand shares of Class A nonvoting common stock issued and outstanding at December 31, 2022, 2021 and 2020, respectively.

Allocated retained earnings of $74.0 million, $66.5 million and $59.8 million at December 31, 2022, 2021 and 2020, respectively, consisted of allocated equity for the payment of patronage on loans participated with another System bank.

At December 31, the Bank's equities included the following:

	2022	2021	2020
Class A voting common stock – associations	**$ 470,160**	$ 409,621	$ 359,217
Class A nonvoting common stock – other financing institutions	**869**	752	771
Total common stock	**471,029**	410,373	359,988
Preferred stock	**750,000**	750,000	750,000
Allocated retained earnings – other entities	**74,043**	66,490	59,765
Total allocated retained earnings	**74,043**	66,490	59,765
Total capital stock and allocated retained earnings	**$ 1,295,072**	$1,226,863	$1,169,753

Patronage may be paid to the holders of Class A voting common stock, Class A nonvoting stock and allocated retained earnings of the Bank, as the board of directors may determine by resolution, subject to the capitalization requirements defined by the FCA. During 2022, $215.6 million in cash patronage was declared to Associations, OFIs and other entities, compared to $183.7 million in 2021 and $152.6 million in 2020. Cash patronage in 2022 consisted of direct loan patronage of $152.0 million, patronage on certain participations of $47.0 million, patronage on Association and OFI investment in the Bank of $9.5 million, and capitalized and noncapitalized participation pool patronage of $7.1 million.

B. Regulatory Capitalization Requirements and Restrictions:

The Farm Credit Administration (FCA) sets minimum regulatory capital requirements, including capital conservation buffers, for banks and associations. These requirements are split into minimum requirements for risk-adjusted ratios and non-risk-adjusted ratios. The risk-adjusted ratios include common equity tier 1, tier 1 capital and total capital and permanent risk-based capital ratios. The non-risk-adjusted ratios include a tier 1 leverage ratio and an unallocated retained earnings (URE) and URE equivalents (UREE) leverage ratio that are applicable to both the banks and associations.

The Farm Credit Act has defined permanent capital to include all capital except stock and other equities that may be retired upon the repayment of the holder's loan or otherwise at the option of the holder, or is otherwise not at risk. Risk-adjusted assets have been defined by regulations as the balance sheet assets and off-balance sheet commitments adjusted by various percentages ranging from 0 to 1,250%, depending on the level of risk inherent in the various types of assets.

The ratios are based on a three-month average daily balance in accordance with FCA regulations and are calculated as follows:

- Common equity tier 1 ratio is statutory minimum purchased borrower stock, other required borrower stock held for a minimum of 7 years, allocated equities held for a minimum of 7 years or not subject to revolvement, unallocated retained earnings, paid-in capital, less certain regulatory required deductions including the amount of allocated investments in other System institutions, and the amount of purchased investments in other System institutions under the corresponding deduction approach, divided by average risk-adjusted assets.
- Tier 1 capital ratio is common equity tier 1 plus noncumulative perpetual preferred stock, divided by average risk-adjusted assets.
- Total capital is tier 1 capital plus other required borrower stock held for a minimum of 5 years, allocated equities held for a minimum of 5 years, subordinated debt and limited-life preferred stock greater than 5 years to maturity at issuance subject to certain limitations, allowance and reserve for losses on unfunded commitments under certain limitations less certain investments in other System institutions under the corresponding deduction approach, divided by average risk-adjusted assets.

- Permanent capital ratio (PCR) is all at-risk borrower stock, any allocated excess stock, unallocated retained earnings, paid-in capital, subordinated debt and preferred stock subject to certain limitations, less certain allocated and purchased investments in other System institutions, divided by PCR risk-adjusted assets.
- Tier 1 leverage ratio is tier 1 capital, including regulatory deductions, divided by average assets less regulatory deductions subject to tier 1 capital.
- UREE leverage ratio is unallocated retained earnings, paid-in capital, allocated surplus not subject to revolvement less certain regulatory required deductions including the amount of allocated investments in other System institutions divided by average assets less regulatory deductions subject to tier 1 capital.

If the capital ratios fall below the minimum regulatory requirements, capital distributions (equity redemptions, dividends and patronage) and discretionary bonus payments to senior officers are restricted or prohibited without prior FCA approval.

The following table reflects the Bank's capital ratios at December 31:

	2022	2021	2020	Total Regulatory Requirements Including Capital Conservation Buffers
Permanent capital ratio	**13.43 %**	15.10 %	16.08 %	7.00 %
Common equity tier 1 ratio	**8.66**	9.55	9.92	7.00
Tier 1 capital ratio	**13.42**	15.09	16.07	8.50
Total capital ratio	**13.50**	15.17	16.15	10.50
Tier 1 leverage ratio	**5.94**	6.37	7.11	5.00
UREE leverage ratio	**2.50**	2.73	2.99	1.50

The components of the Bank's risk-adjusted capital, based on 90-day average balances, were as follows at December 31, 2022:

	Common Equity Tier 1 Ratio	Tier 1 Capital Ratio	Total Capital Ratio	Permanent Capital Ratio
Numerator:				
Unallocated retained earnings	**$ 1,051,848**	**$ 1,051,848**	**$ 1,051,848**	**1,051,848**
Adjustments for patronage or dividend accrued receivables or payables	**(5,165)**	**(5,165)**	**(5,165)**	**(5,165)**
Common Cooperative Equities:				
Purchased other required stock ≥ 7 years	**374,887**	**374,887**	**374,887**	**374,887**
Allocated stock ≥ 7 years	**36,042**	**36,042**	**36,042**	**36,042**
Allocated equities:				
Allocated equities held ≥ 7 years	**66,961**	**66,961**	**66,961**	**66,961**
Noncumulative perpetual preferred stock	**—**	**750,000**	**750,000**	**750,000**
Allowance for loan losses and reserve for losses on unfunded commitments subject	**—**	**—**	**13,110**	**—**
Regulatory Adjustments and Deductions:				
Amount of allocated investments in other System institutions	**(157,616)**	**(157,616)**	**(157,616)**	**(157,616)**
Other regulatory required deductions	**(217)**	**(217)**	**(217)**	**(217)**
Total	**$ 1,366,740**	**$ 2,116,740**	**$ 2,129,850**	**$ 2,116,740**
Denominator:				
Risk-adjusted assets excluding allowance	**$ 15,778,318**	**$ 15,778,318**	**$ 15,778,318**	**$ 15,778,318**
Regulatory Adjustments and Deductions:				
Allowance for loan losses	**—**	**—**	**—**	**(11,310)**
Total	**$ 15,778,318**	**$ 15,778,318**	**$ 15,778,318**	**$ 15,767,008**

The components of the Bank's non-risk-adjusted capital, based on 90-day average balances, were as follows at December 31, 2022:

	Tier 1 Leverage Ratio	UREE Leverage Ratio
Numerator:		
Unallocated retained earnings	$ 1,051,848	$ 1,051,848
Adjustments for patronage or dividend accrued receivables or payables	(5,165)	(5,165)
Common Cooperative Equities:		
Purchased other required stock ≥ 7 years	374,887	—
Allocated stock ≥ 7 years	36,042	—
Allocated equities:		
Allocated equities held ≥ 7 years	66,961	—
Noncumulative perpetual preferred stock	750,000	—
Regulatory Adjustments and Deductions:		
Amount of allocated investments in other System institutions	(157,616)	(157,616)
Other regulatory required deductions	(217)	—
Total	$ 2,116,740	$ 889,067
Denominator:		
Total Assets	$ 35,781,758	$ 35,781,758
Regulatory Adjustments and Deductions:		
Regulatory deductions included in tier 1 capital	(168,168)	(168,168)
Total	$ 35,613,590	$ 35,613,590

The components of the Bank's risk-adjusted capital, based on 90-day average balances, were as follows at December 31, 2021:

	Common Equity Tier 1 Ratio	Tier 1 Capital Ratio	Total Capital Ratio	Permanent Ratio
Numerator:				
Unallocated retained earnings	$ 1,029,975	$ 1,029,975	$ 1,029,975	$ 1,029,975
Common Cooperative Equities:				
Purchased other required stock ≥ 7 years	322,779	322,779	322,779	322,779
Allocated stock ≥ 7 years	36,042	36,042	36,042	36,042
Allocated equities:				
Allocated equities held ≥ 7 years	59,931	59,931	59,931	59,931
Noncumulative perpetual preferred stock	—	750,000	750,000	750,000
Allowance for loan losses and reserve for losses on unfunded commitments subject to certain limitations	—	—	11,780	—
Regulatory Adjustments and Deductions:				
Amount of allocated investments in other System institutions	(155,054)	(155,054)	(155,054)	(155,054)
Other regulatory required deductions	(249)	(249)	(249)	(249)
Total	$ 1,293,424	$ 2,043,424	$ 2,055,204	$ 2,043,424
Denominator:				
Risk-adjusted assets excluding allowance	$ 13,546,024	$ 13,546,024	$ 13,546,024	$ 13,546,024
Regulatory Adjustments and Deductions:				
Allowance for loan losses	—	—	—	(10,080)
Total	$ 13,546,024	$ 13,546,024	$ 13,546,024	$ 13,535,944

The components of the Bank's non-risk-adjusted capital, based on 90-day average balances, were as follows at December 31, 2021:

	Tier 1 Leverage Ratio	UREE Leverage Ratio
Numerator:		
Unallocated retained earnings	$ 1,029,975	$ 1,029,975
Common Cooperative Equities:		
Purchased other required stock ≥ 7 years	322,779	—
Allocated stock ≥ 7 years	36,042	—
Allocated equities:		
Allocated equities held ≥ 7 years	59,931	—
Noncumulative perpetual preferred stock	750,000	—
Regulatory Adjustments and Deductions:		
Amount of allocated investments in other System institutions	(155,054)	(155,054)
Other regulatory required deductions	(249)	—
Total	$ 2,043,424	$ 874,921
Denominator:		
Total Assets	$ 32,238,312	$ 32,238,312
Regulatory Adjustments and Deductions:		
Regulatory deductions included in tier 1 capital	(165,260)	(165,260)
Total	$ 32,073,052	$ 32,073,052

C. Accumulated Other Comprehensive Loss:

Following is a summary of the components of accumulated other comprehensive loss and the changes occurring during the year ended December 31, 2022:

	Total	Unrealized Loss on Investments	Postretirement Benefit Plans	Unrealized (Loss) Gain on Cash Flow Derivative Instruments
Balance, January 1, 2022	**$ (96,836)**	**$ (29,865)**	**$ (773)**	**$ (66,198)**
Change in net unrealized gains (losses) on available-for-sale (AFS) securities:				
Change in net unrealized losses on AFS securities	**(576,540)**	**(576,540)**		
Net change in unrealized losses on AFS securities	**(576,540)**	**(576,540)**		
Change in postretirement benefit plans:				
Actuarial gains	**2,998**		**2,998**	
Amounts amortized into net periodic expense:				
Amortization of prior service credits	**(79)**		**(79)**	
Net change in postretirement benefit plans	**2,919**		**2,919**	
Change in cash flow derivative instruments:				
Net unrealized gains on cash flow derivative instruments	**206**			**206**
Reclassification of losses recognized in interest expense	**129,892**			**129,892**
Net change in cash flow derivative instruments	**130,098**			**130,098**
Total other comprehensive (loss) income	**(443,523)**	**(576,540)**	**2,919**	**130,098**
Balance, December 31, 2022	**$ (540,359)**	**$ (606,405)**	**$ 2,146**	**$ 63,900**

Following is a summary of the components of accumulated other comprehensive loss and the changes occurring during the year ended December 31, 2021:

	Total	Unrealized Gain (Loss) on Investments	Postretirement Benefit Plans	Unrealized Loss on Cash Flow Derivative Instruments
Balance, January 1, 2021	$ (28,827)	$ 80,007	$ (891)	$ (107,943)
Change in net unrealized gains (losses) on available-for-sale (AFS) securities:				
Change in net unrealized losses on AFS securities	(109,872)	(109,872)		
Net change in unrealized losses on AFS securities	(109,872)	(109,872)		
Change in postretirement benefit plans:				
Actuarial gains	195		195	
Amounts amortized into net periodic expense:				
Amortization of prior service credits	(77)		(77)	
Net change in postretirement benefit plans	118		118	
Change in cash flow derivative instruments:				
Net unrealized gains on cash flow derivative instruments	41,498			41,498
Reclassification of losses recognized in interest expense	247			247
Net change in cash flow derivative instruments	41,745			41,745
Total other comprehensive (loss) income	(68,009)	(109,872)	118	41,745
Balance, December 31, 2021	$ (96,836)	$ (29,865)	$ (773)	$ (66,198)

Following is a summary of the components of accumulated other comprehensive loss and the changes occurring during the year ended December 31, 2020:

	Total	Unrealized Gain on Investments	Postretirement Benefit Plans	Unrealized Loss on Cash Flow Derivative Instruments
Balance, January 1, 2020	$ (51,631)	$ 3,212	$ (801)	$ (54,042)
Change in net unrealized gains (losses) on available-for-sale (AFS) securities:				
Change in net unrealized gains on AFS securities	76,795	76,795		
Net change in unrealized gains on AFS securities	76,795	76,795		
Change in postretirement benefit plans:				
Actuarial losses	(13)		(13)	
Amounts amortized into net periodic expense:				
Amortization of prior service credits	(77)		(77)	
Net change in postretirement benefit plans	(90)		(90)	
Change in cash flow derivative instruments:				
Net unrealized losses on cash flow derivatives instruments	(55,859)			(55,859)
Reclassification of losses recognized in interest expense	1,958			1,958
Net change in cash flow derivative instruments	(53,901)			(53,901)
Total other comprehensive income (loss)	22,804	76,795	(90)	(53,901)
Balance, December 31, 2020	$ (28,827)	$ 80,007	$ (891)	$ (107,943)

The following table summarizes amounts reclassified out of accumulated other comprehensive (loss) income to current earnings:

Description	Amount Reclassified From Accumulated Other Comprehensive Loss			Location of Gain (Loss) Recognized in Statements of Comprehensive Income
	2022	2021	2020	
Postretirement benefit plans				
Amortization of prior service credits	**79**	77	77	Salaries and employee benefits
Cash flow derivative instruments				
Losses on cash flow derivatives	**(129,892)**	(247)	(1,958)	Interest expense
	$ (129,813)	$ (170)	$ (1,881)	

Note 12 — Employee Benefit Plans

Employees of the Bank participate in either the Texas District's defined benefit retirement plan (DB Plan) or in a nonelective defined contribution feature (DC Plan) within the Farm Credit Benefits Alliance 401(k) plan. In addition, all benefits-eligible employees are qualified to participate in the Farm Credit Benefits Alliance 401(k) plan.

The structure of the Texas District's DB Plan is characterized as multiemployer, since neither the assets, liabilities nor cost of any plan is segregated or separately accounted for by participating employers (Bank and Associations). No portion of any surplus assets is available to any participating employer. As a result, participating employers of the DB Plan only recognize as cost the required contributions for the period and a liability for any unpaid contributions required for the period of their financial statements. DB Plan obligations, assets and the components of annual benefit expenses are recorded and reported upon Texas District combination only. The Bank records current contributions to the DB Plan as an expense in the current year.

The DB Plan is noncontributory, and benefits are based on salary and years of service. As of January 1, 1996, the Bank and Associations froze participation in the DB Plan and offered defined contribution retirement plans to all employees hired subsequent to the freeze. The legal name of the DB Plan is Farm Credit Bank of Texas Pension Plan. It's employer identification number is 74-1110170. The DB Plan is not subject to any contractual expiration dates. The DB Plan's funding policy is to fund additional benefits that are expected to be earned by employees during the current year, the service cost plus 20% of the accumulated benefit obligation (ABO) shortfall based on a targeted funding status of ABO of 80%. The DB Plan sponsor is the board of directors of the Bank. The "projected unit credit" actuarial method is used for both financial reporting and funding purposes. Texas District employers have the option of providing enhanced retirement benefits, under certain conditions, within the DB Plan, to facilitate reorganization and/or restructuring. Actuarial information regarding the DB Plan accumulated benefit obligation and DB Plan asset is calculated for the Texas District as a whole and is presented in the Texas District's unaudited 2022 Annual Report. The actuarial present value of vested and non-vested accumulated benefit obligation exceeded the net assets of the DB Plan as of December 31, 2022.

The risks of participating in multiemployer plans are different from single-employer plans in the following aspects:

a. Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.

b. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

c. If the participating employer chooses to stop participating in the multiemployer plan, it may be required to pay the plan an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

The following table includes additional information regarding the funded status of the DB Plan for projected benefit obligation in excess of DB Plan assets, the Bank's contributions, and the percent of Bank contributions to total plan contributions for the years ended December 31, 2022, 2021 and 2020:

	2022	2021	2020
Projected benefit obligation	**$ 260,042**	$ 348,701	$ 405,892
Fair value of plan assets	**184,418**	245,976	254,237
Funded status of plan	**70.9 %**	70.5 %	62.6 %
Bank's contribution	**$ 1,427**	$ 2,327	$ 609
Percent of Bank's contribution to total contributions	**13.7 %**	15.3 %	10.1 %

The funded status presented above is based on the percent of DB Plan assets to projected benefit obligation. DB plan funding is based on the percent of DB Plan assets to the accumulated benefit obligation, which was 71.8%, 72.0% and 64.3% at December 31, 2022, 2021 and 2020, respectively.

The expected long-term rate of return assumption is determined independently for each defined benefit pension plan. Generally, DB Plan trustees use historical return information to establish a best-estimate range for each asset class in which the DB Plan is invested. DB Plan trustees select the most appropriate rate for the DB Plan from the best-estimate range, taking into consideration the duration of the benefit liabilities and DB Plan sponsor investment policies.

Participants in the non-elective pension feature of the DC Plan direct the placement of their employers' contributions (5% of eligible compensation during 2022) made on their behalf into various investment alternatives.

The Texas District also participates in the Farm Credit Benefits Alliance 401(k) plan (the 401(k) Plan), which offers a pre-tax and after-tax Roth compensation deferral feature. Employers match 100% of employee contributions for the first 3% of eligible compensation and then match 50% of employee contributions on the next 2% of eligible compensation, for a maximum employer contribution of 4% of eligible compensation.

Certain executive or highly compensated employees in the Bank are eligible to participate in a separate nonqualified supplemental 401(k) plan, named the Farm Credit Benefits Alliance Nonqualified Supplemental 401(k) Plan (Supplemental 401(k) Plan). The Supplemental 401(k) Plan allows Texas District employers to elect to participate in any or all of the following benefits:

- *Restored Employer Contributions* – to allow "make-up" contributions for eligible employees whose benefits to the qualified 401(k) Plan were limited by the Internal Revenue Code during the year
- *Elective Deferrals* – to allow eligible employees to make pre-tax deferrals of compensation above and beyond any deferrals into the qualified 401(k) Plan
- *Discretionary Contributions* – to allow participating employers to make a discretionary contribution to an eligible employee's account in the plan, and to designate a vesting schedule

Contributions of $94 thousand, $315 thousand and $211 thousand were made to the Supplemental 401(k) Plan for the years ended December 31, 2022, 2021 and 2020. There were no distributions from the Supplemental 401(k) Plan in 2022, 2021 and 2020. The fair value of accumulated benefits and funded balance in the Supplemental 401(k) Plan totaled $1.2 million at December 31, 2022.

The following table presents the Bank's retirement benefit expenses for the years ended:

	2022	2021	2020
Texas District DB Plan	$ 1,427	$ 2,327	$ 609
DC Plan	2,071	1,934	1,775
401(k) Plan	1,530	1,487	1,340
Supplemental 401(k) Plan	94	315	211
Total	$ 5,122	$ 6,063	$ 3,935

The Bank provides certain health care benefits to qualifying retired employees (other postretirement benefits). These benefits are not characterized as multiemployer and, consequently, the liability for these benefits is included in other liabilities on the balance sheet. Bank employees hired on or after January 1, 2004, may be eligible for retiree medical benefits for themselves and their spouses at their expense and will be responsible for 100% of the related premiums.

The following tables reflect the benefit obligation, cost, funded status and actuarial assumptions for the Bank's other postretirement benefits, and additional information for accumulated benefits in excess of plan assets for the years ended December 31, 2022, 2021 and 2020:

	Other Postretirement Benefits		
	2022	2021	2020
Change in projected benefit obligation			
Projected benefit obligation, beginning of year	$ 12,513	$ 12,532	$ 12,231
Service cost	194	195	227
Interest cost	388	345	415
Plan participants' contributions	94	76	80
Plan amendments	—	—	—
Actuarial (gain) loss	(2,998)	(195)	13
Benefits paid	(473)	(440)	(434)
Projected benefit obligation, end of year	$ 9,718	$ 12,513	$ 12,532
Change in plan assets			
Plan assets at fair value, beginning of year	—	—	—
Actual return on plan assets	—	—	—
Company contributions	379	364	354
Plan participants' contributions	94	76	80
Benefits paid	(473)	(440)	(434)
Plan assets at fair value, end of year	—	—	—
Unfunded status at end of year	$ (9,718)	$ (12,513)	$ (12,532)

	Other Postretirement Benefits		
	2022	2021	2020
Amounts recognized on the balance sheet consist of:			
Other postretirement liabilities	$ (9,718)	$ (12,513)	$ (12,532)
Accumulated other comprehensive (gain) loss	(2,146)	773	891
Amounts recognized in accumulated other comprehensive loss:			
Net actuarial (gain) loss	$ (1,990)	$ 1,006	$ 1,203
Prior service credit	(156)	(233)	(312)
Total accumulated other comprehensive (gain) loss	$ (2,146)	$ 773	$ 891
Net periodic benefit cost			
Service cost	$ 194	$ 195	$ 227
Interest cost	388	345	415
Amortization of:			
Prior service cost credit	(79)	(77)	(77)
Total periodic benefit cost	$ 503	$ 463	$ 565
Other changes to plan assets and projected benefit obligations recognized in other comprehensive (income) loss:			
Net actuarial (gain) loss	$ (2,998)	$ (195)	$ 13
Prior service costs	79	77	77
Net change	$ (2,919)	$ (118)	$ 90
Additional details regarding plans with accumulated (post-retirement) benefit obligations in excess of plan assets:			
Accumulated (post-retirement) benefit obligation	$ 9,718	$ 12,513	$ 12,532
Fair value of plan assets	—	—	—

	Other Postretirement Benefits		
	2022	2021	2020
Weighted-average assumptions used to determine benefit obligation at year end			
Measurement date	12/31/2022	12/31/2021	12/31/2020
Discount rate	5.20 %	3.15 %	2.80 %
Health care cost trend rate assumed for next year (pre/post-65)	7.20%/7.70%	6.80%/6.00%	6.60%/6.20%
Ultimate health care cost trend rate	4.50 %	4.50 %	4.50 %
Year that the rate reaches the ultimate trend rate	2030	2030	2029
Weighted-average assumptions used to determine net periodic cost for the year			
Measurement date	12/31/2021	12/31/2020	12/31/2019
Discount rate	3.15 %	2.80 %	3.45 %
Health care cost trend rate assumed for next year (pre/post-65)	6.80%/6.00%	6.60%/6.20%	6.90%/6.40%
Ultimate health care cost trend rate	4.50 %	4.50 %	4.50 %
Year that the rate reaches the ultimate trend rate	2030	2029	2029

Expected Future Cash Flow Information

Expected Benefit Payments		
Fiscal 2023	$	**437**
Fiscal 2024		**485**
Fiscal 2025		**509**
Fiscal 2026		**543**
Fiscal 2027		**569**
Fiscal 2028 - 2031		**3,162**
Expected Contributions		
Fiscal 2023	$	**437**

The Bank's plan for other postretirement benefits does not have plan assets.

Note 13 — Related Party Transactions

As discussed in Note 1, "Organization and Operations," the Bank lends funds to the Texas District Associations to fund their loan portfolios. Interest income recognized on direct notes receivable from Texas District Associations was $455.2 million, $361.4 million and $375.6 million for 2022, 2021 and 2020, respectively. Further disclosure regarding these related party transactions is found in Note 4, "Loans and Reserves for Credit Losses," and Note 11, "Shareholders' Equity."

In addition to providing loan funds to Texas District Associations, the Bank also provides banking and support services to them, such as accounting, information systems, marketing and other services. Income derived by the Bank from these activities was $4.5 million, $3.5 million and $3.2 million for 2022, 2021 and 2020, respectively, and was included in the Bank's noninterest income.

The Bank had no transactions with nor loans to directors or senior officers, their immediate family members, or any organizations with which such senior officers or directors are affiliated, during 2022, 2021 and 2020.

Note 14 — Commitments and Contingencies

The Bank has various outstanding commitments and contingent liabilities as discussed elsewhere in these notes.

The Bank is primarily liable for its portion of Systemwide debt obligations. Additionally, the Bank is jointly and severally liable for the consolidated Systemwide bonds and notes of other System banks. The total Bank and consolidated Systemwide debt obligations of the System at December 31, 2022, were approximately $389.98 billion.

In the normal course of business, the Bank incurs a certain amount of claims, litigation, and other legal and administrative proceedings, all of which are considered incidental to the normal conduct of business. The Bank believes it has meritorious defenses to the claims currently asserted against it, and, with respect to such legal proceedings, intends to defend itself vigorously, litigating or settling cases according to management's judgment as to what is in the best interest of the Bank and its shareholders.

On at least a quarterly basis, the Bank assesses its liabilities and contingencies in connection with outstanding legal proceedings utilizing the latest information available. For those matters where it is probable that the Bank would incur a loss and the amount of the loss could be reasonably estimated, the Bank would record a liability in its financial statements. These liabilities would be increased or decreased to reflect any relevant developments on a quarterly basis. For other matters, where a loss is not probable or the amount of the loss is not estimable, the Bank does not record a liability.

Currently, other actions are pending against the Bank in which claims for monetary damages are asserted. Upon the basis of current information, management and legal counsel are of the opinion that any resulting losses are not probable, and that the ultimate liability, if any, resulting from a lawsuit and other pending actions will not be material in relation to the financial position, results of operations or cash flows of the Bank.

Note 15 — Financial Instruments With Off-Balance Sheet Risk

The Bank may participate in financial instruments with off-balance sheet risk to satisfy the financing needs of its borrowers and to manage its exposure to interest rate risk. These financial instruments include commitments to extend credit and commercial letters of credit. The instruments involve, to varying degrees, elements of credit risk in excess of the amount recognized in the financial statements. Commitments to extend credit are agreements to lend to a borrower as long as there is not a violation of any condition established in the contract. Commercial letters of credit are agreements to pay a beneficiary under conditions specified in the letter of credit. Commitments and letters of credit generally have fixed expiration dates or other termination clauses and may require payment of a fee. At December 31, 2022, the Bank had $4.40 billion of commitments to extend credit and $133.7 million of letters of credit outstanding.

Since many of these commitments are expected to expire without being drawn upon, the total commitments do not necessarily represent future cash requirements. However, these credit-related financial instruments have off-balance sheet credit risk because their amounts are not reflected on the balance sheet until funded or drawn upon.

The Bank provides letters of credit, which are irrevocable agreements to guarantee payments of specified financial obligations. As a guarantor, the Bank recognizes a liability for the fair value of the obligation undertaken in issuing the guarantee. The Bank's liability for the fair value of these obligations is determined by applying a risk-adjusted spread percentage to these obligations. As of December 31, 2022, the maximum potential amount of future payments that the Bank may be required to make under the Bank's outstanding letters of credit was $133.7 million, with a fair value of $2.2 million, which is included in other liabilities on the balance sheet. These outstanding letters of credit have expiration dates ranging from 2023 to 2030.

The credit risk involved in issuing commitments and letters of credit is essentially the same as that involved in extending loans to customers, and the same credit policies are applied by management. In the event of funding, the credit risk amounts are equal to the contract amounts, assuming that counterparties fail completely to meet their obligations and the collateral or other security is of no value. The amount of collateral obtained, if deemed necessary upon extension of credit, is based on management's credit evaluation of the counterparty. At December 31, 2022, 2021 and 2020, the Bank had a reserve for losses on letters of credit and unfunded commitments of $2.1 million, $1.4 million and $1.9 million, respectively, representing management's estimate of probable credit losses related to letters of credit and unfunded commitments.

Note 16 — Fair Value Measurements

Authoritative accounting guidance defines fair value as the exchange price that would be received for an asset or paid to transfer a liability in an orderly transaction between market participants in the principal or most advantageous market for the asset or liability. See Note 2, "Summary of Significant Accounting Policies," for additional information and "Valuation Techniques" at the end of this note.

Assets and liabilities measured at fair value on a recurring basis at December 31, 2022 for each of the fair value hierarchy values are summarized below:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Federal funds and other overnight funds	$ 301,678	$ —	$ 301,678	$ —
Available-for-sale investments				
Certificates of deposit	199,009	—	199,009	—
Corporate debt	234,778	—	234,778	—
U.S. Treasury securities	818,844	—	818,844	—
Agency-guaranteed debt	53,301	—	53,301	—
Mortgage-backed securities	5,152,229	—	5,152,229	—
Asset-backed securities	186,521	—	186,521	—
Other available-for-sale investments	10,270	—	—	10,270
Derivative assets	2,212	—	2,212	—
Assets held in nonqualified benefit trusts	1,183	1,183	—	—
Total assets	$ 6,960,025	$ 1,183	$ 6,948,572	$ 10,270
Liabilities:				
Derivative liabilities	$ (42,749)	$ —	$ (42,749)	$ —
Letters of credit	2,223	—	—	2,223
Total liabilities	$ (40,526)	$ —	$ (42,749)	$ 2,223

At December 31, 2022, there was no posted variation margin on derivatives. At December 31, 2022, the Bank had a derivative asset position of $64.7 million and received $62.5 million in cash collateral against this position which resulted in a net derivative asset of $2.2 million. At December 31, 2022, the Bank posted $42.7 million of initial margin in cash collateral with no related liability exposure.

The table below represents a reconciliation of all Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2022:

	Assets		Liabilities	
	Mortgage-Backed Securities	Agricultural Mortgage-Backed Securities	Letters of Credit	Total
Balance at January 1, 2022	$ 58,959	$ 14,209	$ 3,306	$ 69,862
Net losses included in other comprehensive income	(1,910)	(918)	—	(2,828)
Purchases, issuances and settlements	133,821	(3,021)	(1,083)	131,883
Transfers out of Level 3	(190,870)	—	—	(190,870)
Balance at December 31, 2022	$ —	$ 10,270	$ 2,223	$ 8,047
The amount of gains/losses for the period included in earnings attributable to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2022	—	—	—	$ —
The amount of gains/losses for the period included in other comprehensive income attributing to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2022	$ (1,910)	$ (918)	$ —	$ (2,828)

There were transfers of assets or liabilities into or out of Level 3 from other levels during the year ended December 31, 2022. Transfers of mortgage-backed securities from Level 3 into Level 2 were the result of market pricing becoming subsequently available. Agricultural mortgage-backed securities (AMBS) were included in Level 3 due to limited activity or less transparency around inputs to their valuation. Mortgage-backed securities (MBS) were included in Level 3 since their valuation was based on Level 3 criteria (broker quotes). The liability for letters of credit was included in Level 3 because the valuation, based on fees charged for similar agreements, may not closely correlate to a fair value for instruments not regularly traded in the secondary market.

Assets and liabilities measured at fair value on a nonrecurring basis at December 31, 2022 for each of the fair value hierarchy values are summarized below:

	Total	Quoted Price in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Loans	**$ 24,981**	**$ —**	**$ —**	**$ 24,981**
Total assets	**$ 24,981**	**$ —**	**$ —**	**$ 24,981**

Assets and liabilities measured at fair value on a recurring basis at December 31, 2021, for each of the fair value hierarchy values are summarized below:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Federal funds and other overnight funds	$ 194,223	$ —	$ 194,223	$ —
Available-for-sale investments				
Corporate debt	234,580	—	234,580	—
U.S. Treasury securities	647,564	—	647,564	—
Agency-guaranteed debt	85,293	—	85,293	—
Mortgage-backed securities	5,394,337	—	5,335,378	58,959
Asset-backed securities	184,256	—	184,256	—
Other available-for-sale investments	14,209	—	—	14,209
Derivative assets	338	—	338	—
Assets held in nonqualified benefit trusts	1,300	1,300	—	—
Total assets	$ 6,756,100	$ 1,300	$ 6,681,632	$ 73,168
Liabilities:				
Derivative liabilities	$ (7,614)	$ —	$ (7,614)	$ —
Letters of credit	3,306	—	—	3,306
Total liabilities	$ (4,308)	$ —	$ (7,614)	$ 3,306

The derivatives within the liabilities section relate to cash flow swaps which are cleared through a futures clearing merchant (FCM) or a central counterparty (CCP), with a fair value of $65.5 million, offset by variation margin of $73.1 million.

The table below represents a reconciliation of all Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2021:

	Assets			Liabilities	
	Asset-Backed Securities	Mortgage-Backed Securities	Agricultural Mortgage-Backed Securities	Letters of Credit	Total
Balance at January 1, 2021	$ —	$ 75,914	$ 23,464	$ 2,513	$ 96,865
Net losses included in other comprehensive losses	(15)	(1,849)	(167)	—	(2,031)
Purchases, issuances and settlements	11,975	496,805	(9,088)	793	498,899
Transfers out of Level 3 into Level 2	(11,960)	(511,911)	—	—	(523,871)
Balance at December 31, 2021	$ —	$ 58,959	$ 14,209	$ 3,306	$ 69,862
The amount of gains/losses for the period included in earnings attributable to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2021	—	—	—	—	—
The amount of gains/losses for the period included in other comprehensive income attributing to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2021	$ (15)	$ (1,849)	$ (167)	$ —	$ (2,031)

There were transfers of assets or liabilities into or out of Level 3 from other levels during the year ended December 31, 2021. Transfers of asset-backed and mortgage-backed securities from Level 3 into Level 2 were the result of market pricing becoming subsequently available. Agricultural mortgage-backed securities are included in Level 3 due to limited activity or less transparency around inputs to their valuation. Mortgage-backed securities (MBS) were included in Level 3 since their valuation was based on Level 3 criteria (broker quotes). The liability for letters of credit is included in Level 3 because their valuation, based on fees currently charged for similar agreements, may not closely correlate to a fair value for instruments that are not regularly traded in the secondary market.

Assets and liabilities measured at fair value on a nonrecurring basis at December 31, 2021 for each of the fair value hierarchy values are summarized below:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Loans	$ 4,437	$ —	$ —	$ 4,437
Total assets	$ 4,437	$ —	$ —	$ 4,437

Assets and liabilities measured at fair value on a recurring basis at December 31, 2020, for each of the fair value hierarchy values are summarized below:

	Total	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Federal funds and other overnight funds	$ 208,229	$ —	$ 208,229	$ —
Available-for-sale investments				
Commercial paper	49,991	—	49,991	—
Corporate debt	284,832	—	284,832	—
U.S. Treasury securities	426,453	—	426,453	—
Agency-guaranteed debt	114,379	—	114,379	—
Mortgage-backed securities	4,452,654	—	4,376,740	75,914
Asset-backed securities	196,394	—	196,394	—
Other available-for-sale investments	23,464	—	—	23,464
Derivative assets	398	—	398	—
Assets held in nonqualified benefit trusts	1,186	1,186	—	—
Collateral assets	50,380	50,380		
Total assets	$ 5,808,360	$ 51,566	$ 5,657,416	$ 99,378
Liabilities:				
Letters of credit	$ 2,513	$ —	$ —	$ 2,513
Derivative liabilities	73,347	—	73,347	—
Total liabilities	$ 75,860	$ —	$ 73,347	$ 2,513

The table below represents a reconciliation of all Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2020:

	Assets		Liabilities	
	Mortgage Backed Securities	Agricultural Mortgage-Backed Securities	Letters of Credit	Total
Balance at January 1, 2020	$ —	$ 29,051	$ 830	$ 28,221
Net gains included in other comprehensive income	165	577	—	742
Purchases, issuances and settlements	300,129	(6,164)	1,683	292,282
Transfers out of Level 3 into Level 2	(224,380)	—	—	(224,380)
Balance at December 31, 2020	$ 75,914	$ 23,464	$ 2,513	$ 96,865
The amount of gains/losses for the period included in earnings attributable to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2020	—	—	—	—
The amount of gains/losses for the period included in other comprehensive income attributing to the change in unrealized gains or losses relating to assets or liabilities still held at December 31, 2020	$ 165	$ 577	$ —	$ 742

There were transfers of assets or liabilities into or out of Level 3 from other levels during the year ended December 31, 2020. Agricultural mortgage-backed securities are included in Level 3 due to limited activity or less transparency around inputs to their valuation. Mortgage-backed securities (MBS) were included in Level 3 since their valuation was based on Level 3 criteria (broker quotes). The liability for letters of credit is included in Level 3 because their valuation, based on fees currently charged for similar agreements, may not closely correlate to a fair value for instruments that are not regularly traded in the secondary market.

Assets and liabilities measured at fair value on a nonrecurring basis at December 31, 2020, for each of the fair value hierarchy values are summarized below:

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Loans	$ 107	$ —	$ —	$ 107
Total assets	$ 107	$ —	$ —	$ 107

Financial assets and financial liabilities measured at carrying amounts and not measured at fair value on the balance sheet for each of the fair value hierarchy values are summarized as follows:

	December 31, 2022				
	Total Carrying Amount	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**	**Total Fair Value**
Assets:					
Cash	**$ 141,487**	**$ 141,487**	**$ —**	**$ —**	**$ 141,487**
Net loans	**28,248,516**	**—**	**—**	**26,378,160**	**26,378,160**
Total assets	**$ 28,390,003**	**$ 141,487**	**$ —**	**$ 26,378,160**	**$ 26,519,647**
Liabilities:					
Systemwide debt securities	**$ 33,971,742**	**$ —**	**$ —**	**$ 31,873,887**	**$ 31,873,887**
Total liabilities	**$ 33,971,742**	**$ —**	**$ —**	**$ 31,873,887**	**$ 31,873,887**

	December 31, 2021				
	Total Carrying Amount	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
Assets:					
Cash	$ 156,986	$ 156,986	$ —	$ —	$ 156,986
Net loans	25,662,689	—	—	25,637,608	25,637,608
Total assets	$ 25,819,675	$ 156,986	$ —	$ 25,637,608	$ 25,794,594
Liabilities:					
Systemwide debt securities	$ 30,790,428	$ —	$ —	$ 30,780,330	$ 30,780,330
Total liabilities	$ 30,790,428	$ —	$ —	$ 30,780,330	$ 30,780,330

	December 31, 2020				
	Total Carrying Amount	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Fair Value
Assets:					
Cash	$ 128,302	$ 128,302	$ —	$ —	$ 128,302
Net loans	21,814,593	—	—	22,231,536	22,231,536
Total assets	$ 21,942,895	$ 128,302	$ —	$ 22,231,536	$ 22,359,838
Liabilities:					
Systemwide debt securities	$ 25,873,429	$ —	$ —	$ 26,245,712	$ 26,245,712
Total liabilities	$ 25,873,429	$ —	$ —	$ 26,245,712	$ 26,245,712

VALUATION TECHNIQUES

As more fully discussed in Note 2, "Summary of Significant Accounting Policies," authoritative accounting guidance establishes a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Fair values of financial instruments represent the estimated amount to be received to sell an asset or paid to transfer or extinguish a liability in active markets among willing participants at the reporting date. 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 of the 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. The following represent a brief summary of the valuation techniques used by the Bank for assets and liabilities:

Investment Securities

Where quoted prices are available in an active market, available-for-sale securities would be classified as Level 1. If quoted prices are not available in an active market, the fair value of securities is estimated using quoted prices for similar securities received from pricing services or discounted cash flows. Generally, these securities would be classified as Level 2. Among other securities, this would include certain mortgage-backed securities. Where there is limited activity or less transparency around inputs to the valuation, the securities are classified as Level 3. Level 3 assets at December 31, 2022, included the Bank's Farmer Mac AMBS portfolio.

To estimate the fair value of the majority of the investments held, including certain non-agency securities, the Bank obtains prices from third-party pricing services.

Assets Held in Nonqualified Benefits Trusts

Assets held in trust funds related to supplemental retirement plans are classified within Level 1. The trust funds include investments that are actively traded and have quoted net asset values that are observable in the marketplace.

Derivatives

Derivative positions are valued using internally developed models that use as their basis quoted prices and would be classified within Level 1 of the valuation hierarchy. However, few classes of derivative contracts are listed on an exchange; thus, the majority of the derivative positions are valued using internally developed models that use as their basis readily observable market parameters and are classified within Level 2 of the valuation hierarchy. Such derivatives include interest rate caps and interest rate swaps.

The models used to determine the fair value of derivative assets and liabilities use an income approach based on observable market inputs, including SOFR and Overnight Index Swap curves and volatility assumptions about future interest rate movements.

Collateral Assets (Cash Collateral Posted with a Counterparty)

Prior to 2021, derivative contracts were supported by bilateral collateral agreements with counterparties which required the Bank to post collateral in the event certain dollar thresholds of credit exposure were reached. The market value of cash collateral posted with a counterparty was its face value plus accrued interest, as that approximated fair value.

Letters of Credit

The fair value of letters of credit approximates the fees currently charged for similar agreements or the estimated cost to terminate or otherwise settle similar obligations.

Loans

Fair value is estimated by discounting the expected future cash flows using the Bank's and/or the Associations' current interest rates at which similar loans would be made to borrowers with similar credit risk. The discount rates are based on the Bank's and/or the Associations' current loan origination rates as well as management's estimates of credit risk. Management has no basis to determine whether the fair values presented would be indicative of the value negotiated in an actual sale and could be less.

For purposes of estimating fair value of accruing loans, the loan portfolio is segregated into pools of loans with homogeneous characteristics. Expected future cash flows, primarily based on contractual terms, and interest rates reflecting appropriate credit risk are separately determined for each individual pool.

The fair value of loans in nonaccrual status that are current as to principal and interest is estimated as described above, with appropriately higher interest rates which reflect the uncertainty of continued cash flows. For collateral-dependent impaired loans, it is assumed that collection will result only from the disposition of the underlying collateral.

Loans Evaluated for Impairment

For certain loans individually evaluated for impairment under accounting impairment guidance, the fair value is based upon the underlying collateral since the loans are collateral-dependent loans for which real estate is the collateral. The fair value measurement process uses independent appraisals and other market-based information, but in many cases it also requires significant input based on management's knowledge of and judgment about current market conditions, specific issues relating to the collateral and other matters. As a result, a majority of these loans have fair value measurements that fall within Level 3 of the fair value hierarchy. When the value of the real estate, less estimated costs to sell, is less than the principal balance of the loan, a specific reserve is established.

Bonds and Notes

Systemwide debt securities are not all traded in the secondary market and those that are traded may not have readily available quoted market prices. Therefore, the fair value of the instruments is estimated by calculating the discounted value of the expected future cash flows. The discount rates used are based on the sum of quoted market yields for the Treasury yield curve and an estimated yield-spread relationship between System debt instruments and Treasury securities. We estimate an appropriate yield-spread taking into consideration selling group member (banks and securities dealers) yield indications, observed new government-sponsored enterprise debt security pricing and pricing levels in the related U.S. dollar interest rate swap market.

Uncertainty of Fair Value Measurements

For recurring fair value measurements categorized within Level 3 of the fair value hierarchy, the significant unobservable inputs used in the fair value measurement of the mortgage-backed securities are prepayment rates, probability of default and loss severity in the event of default inclusive of some uncertainty at the reporting date.

Quoted market prices may not be available for the instruments presented below. Accordingly, fair values are based on internal models that consider judgments regarding anticipated cash flows, future expected loss experience, current economic conditions, risk characteristics of various financial instruments and other factors. Significant increases (decreases) in any of those inputs in isolation would have resulted in a significantly lower (higher) fair value measurement. Generally, a change in the assumption used for the probability of default would have been accompanied by a directionally similar change in the assumption used for the loss severity and a directionally opposite change in the assumption used for prepayment rates. These estimates involve uncertainties and matters of judgment, and therefore cannot be determined with precision. Changes in assumptions could significantly affect the estimates.

Information About Recurring and Nonrecurring Level 3 Fair Value Measurements

	Fair Value at December 31,		
	2022	2021	2020
Other investments	**$ 10,270**	$ 14,209	$ 23,464
Mortgage-backed securities	**—**	58,959	75,914

	Valuation Technique(s)	Unobservable Input	Range of Inputs / Weighted Average at December 31, **2022**	2021	2020
Other investments	Discounted cash flow	Prepayment rates	**3.0%-32.13%/ 9.56%**	1.4%-44.5% / 10.35%	1.4%-44.5% / 8.86%
Mortgage-backed securities	Vendor priced	—	—	—	—

In regard to impaired loans and other property owned (OPO), it is not practicable to provide specific information on inputs as each collateral property is unique. System institutions utilize appraisals to value these loans and OPO and consider unobservable inputs such as income and expense, comparable sales, replacement cost and comparability adjustments.

Information About Recurring and Nonrecurring Level 2 Fair Value Measurements

	Valuation Technique(s)	Input
Federal funds sold	Carrying value	Par/principal
Available-for-sale investment securities	Quoted prices Discounted cash flow	Price for similar security Constant prepayment rate Appropriate interest rate yield curve
Interest rate caps	Discounted cash flow	Appropriate interest rate yield curve Annualized volatility
Interest rate swaps	Discounted cash flow	Benchmark yield curve Counterparty credit risk Volatility

Information About Other Financial Instrument Fair Value Measurements

	Valuation Technique(s)	Input
Cash	Carrying value	Actual balance
Loans	Discounted cash flow	Prepayment forecasts Appropriate interest rate yield curve Probability of default Loss severity
Systemwide debt securities	Discounted cash flow	Benchmark yield curve Derived yield spread Own credit risk

Note 17 — Derivative Instruments and Hedging Activity

The Bank maintains an overall interest rate risk management strategy that incorporates the use of derivative products to minimize significant unplanned fluctuations in earnings that are caused by interest rate volatility. The Bank's goal is to manage interest rate sensitivity by modifying the repricing or maturity characteristics of certain balance sheet liabilities so that movements in interest rates do not adversely affect the net interest margin. The Bank considers the strategic use of derivatives to be a prudent method of managing interest rate sensitivity, as it prevents earnings from being exposed to undue risk posed by changes in interest rates.

The Bank may enter into derivative transactions to lower funding costs, diversify sources of funding, alter interest rate exposures arising from mismatches between assets and liabilities, or better manage liquidity. Interest rate swaps allow the Bank to raise borrowings in the government-sponsored entities market and modify the repricing characteristics of that debt to better match those of the earning assets. Under interest rate swap arrangements, the Bank agrees with other parties to exchange, at specified intervals, payment streams calculated on a specified notional principal amount, with at least one stream based on a specified floating-rate index. The Bank may purchase interest rate options, such as caps, in order to reduce the impact of rising interest rates on its floating-rate debt.

At December 31, 2022, the Bank held interest rate caps with a notional amount of $115.0 million and a net fair value asset of $878 thousand, and pay-fixed interest rate swaps with a notional amount of $1.43 billion and net fair value asset of $65.4 million. At December 31, 2022, there was no excess variation margin on the pay-fixed interest rate swaps. The primary types of derivative instruments used and the amount of activity (notional amount of derivatives) during the year ended December 31, 2022, is summarized in the following table:

	Pay-Fixed Swaps	Interest Rate Caps	Total
Balance at January 1, 2022	$ 825,000	$ 145,000	$ 970,000
Additions	600,000	—	600,000
Maturities/Amortizations	—	(30,000)	(30,000)
Balance at December 31, 2022	**$1,425,000**	**$ 115,000**	**$1,540,000**

By using derivative instruments, the Bank exposes itself to credit and market risk. If a counterparty fails to fulfill its performance obligations under a derivative contract, the Bank's credit risk will equal the fair value gain of the derivative. Generally, when the fair value of a derivative contract is positive, this indicates that the counterparty owes the Bank, thus creating a repayment risk for the Bank. When the fair value of the derivative contract is negative, the Bank owes the counterparty and, therefore, assumes no repayment risk.

To minimize the risk of credit losses from derivatives, all interest rate swap derivative contracts have been moved to clearing and are cleared through a Futures Commission Merchant. Cleared derivative contracts are required to be 100% collateralized and the Derivatives Clearing Organization (DCO) takes on the obligation of both sides of the transaction. Interest rate cap derivatives are supported by bilateral collateral agreements with counterparties requiring the posting of collateral in the event certain dollar thresholds of exposure of one party to the other are reached; thresholds may vary depending on the counterparty's credit rating from a major rating agency. The Bank also monitors the credit standing of, and levels of exposure to, individual counterparties. Interest rate caps are under master agreements that contain netting provisions. These provisions allow the Bank to require the net settlement of covered contracts with the same counterparty in the event of default by the counterparty on one or more contracts.

At December 31, 2022, the Bank had posted $42.7 million of cash as collateral. At December 31, 2022, the Bank had a derivative asset value of $64.7 million and received $62.5 million in cash collateral against that position from a counterparty. At December 31, 2021, and December 31, 2020, the Bank had cash collateral posted of $90.9 million, and $91.3 million, respectively. No counterparty had been required to post collateral in 2021 or 2020.

The credit exposure represents the exposure to credit loss on derivative instruments, which is estimated by calculating the cost, on a present value basis, to replace all outstanding derivative contracts in a gain position.

Derivative – Counterparty Exposure

The table below presents the credit ratings of counterparties to whom the Bank had credit exposure at December 31, 2022:

	Remaining Years to Maturity					
	Less than One to Five Years	More than Five Years	Total Gains (Losses)*	Exposure	Collateral (Posted) Received **	Exposure Net of Collateral
Moody's Credit Rating						
Aa2	$ 847	$ —	$ 847	$ 847	$ —	$ 847
Aa3	10,451	54,987	65,438	65,438	19,732	45,706
Total	**$ 11,298**	**$ 54,987**	**$ 66,285**	**$ 66,285**	**$ 19,732**	**$ 46,553**

*Represents gain or loss positions on derivative instruments with individual counterparties. Net gains or losses represent the exposure to credit losses estimated by calculating the cost, on a present value basis, to replace all outstanding derivative contracts within a maturity category. Within each maturity category, contracts in a loss position are netted against contracts in a gain position with the same counterparty.

**Represents the netting of cash collateral posted of and received by counterparties under enforceable agreements. At December 31, 2022, the Bank had posted $42.7 million of initial margin in cash as collateral and received variation margin in cash collateral of $62.5 million.

The Bank's derivative activities are monitored by its Asset-Liability Management Committee (ALCO) as part of the ALCO's Bank asset/liability and treasury functions. The ALCO is responsible for approving hedging strategies that are developed through its analysis of data derived from financial simulation models and other internal and industry sources. The resulting hedging strategies are then incorporated into the Bank's overall interest rate risk management strategies.

Fair Value Hedges

For derivative instruments that are designated and qualify as a fair value hedge, the gain or loss on the derivative as well as the offsetting loss or gain on the hedged item (principally, debt securities) attributable to the hedge risk are recognized in current earnings. The Bank includes the gain or loss on the hedged items in the same line item (interest expense) as the offsetting loss or gain on the related receive-fixed interest rate swaps. Recorded in the Bank's balance sheet are cumulative basis adjustments for fair value hedges for Systemwide debt securities (bonds and notes). At December 31, 2022 and December 31, 2021, the Bank had no fair value hedged items. At December 31, 2020, the Bank had a carrying amount of $50.2 million for the hedged items, which included $162 thousand for the cumulative amount of fair value hedging adjustments.

Cash Flow Hedges

For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings.

Fair Values of Cash Flow Derivative Instruments

All cash flow swaps hedges clear through a futures commission merchant (FCM), with a clearinghouse or central counterparty (CCP). At December 31, 2022, the notional amount of cleared cash flow hedges was $1.43 billion, with an outstanding exposure of $64.7 million and collateral received of $62.5 million. The Bank also posted $42.7 million in initial variation margin, with no related exposure. At December 31, 2021, the notional amount of cleared cash flow hedges was $825.0 million, with an exposure of $65.5 million and collateral posted of $17.7 million and $73.1 million in initial and variation margin, respectively. At December 31, 2020, the notional amount of cleared cash flow hedges was $250.0 million, with outstanding exposure of $31.5 million and collateral posted of $7.3 million and $33.6 million in initial and variation margins, respectively. The Bank's derivative instruments at December 31, 2022, 2021 and 2020, which are designated and qualify as cash flow hedges, all met the standards for accounting treatment that presume full effectiveness. Thus, the effective portion of the gain or loss on the derivative was reported as a component of other comprehensive income (OCI). In the next 12 months, we expect to reclassify to earnings losses of $201 thousand recorded in accumulated other comprehensive loss (AOCL) as of December 31, 2022. These amounts will offset the cash flows associated with the hedged forecasted transactions.

The following table represents the fair values of cash flow derivative instruments with excess variation margin for cleared activity as of December 31, 2022, and inclusive of posted variation margin for cleared activity as of December 31, 2021 and 2020:

	Balance Sheet Location	**Fair Value 2022**	Fair Value 2021	Fair Value 2020	**Balance Sheet Location**	**Fair Value 2022**	Fair Value 2021	Fair Value 2020
Interest rate caps	Other assets	**$ 878**	$ 338	$ 236	Other liabilities	**$ —**	$ —	$ —
Pay-fixed swaps	Other assets	**1,334**	—	—	Other liabilities	**—**	7,614	(73,347)

The following table sets forth the effect of derivative (loss) gain recognized in accumulated other comprehensive loss for the years ended December 31, 2022, 2021 and 2020:

	Gain (Loss) Recognized in AOCI on Derivatives at December 31,				**Amount of Loss Reclassified From AOCI Into Income at December 31,**		
	2022	2021	2020		**2022**	2021	2020
Interest rate caps	**$ 540**	$ 102	$ 139	Interest (expense) income	**$ (206)**	$ (247)	$ (318)
Pay-fixed swaps	**129,352**	41,396	(55,998)	Interest (expense) income	**—**	—	(1,640)

The table below provides information about derivative financial instruments and other financial instruments that are sensitive to changes in interest rates, including debt obligations and interest rate swaps. The debt information below presents the principal cash flows and related weighted average interest rates by expected maturity dates. The derivative information below represents the notional amounts and weighted average interest rates by expected maturity dates.

December 31, 2022 *(dollars in thousands)*	**Maturities of 2022 Derivative Products and Other Financial Instruments** **2023**	**2024**	**2025**	**2026**	**2027**	**Subsequent Years**	**Total**	**Fair Value**
Total Systemwide debt obligations:								
Fixed rate	$ 7,062,269	$ 3,500,920	$ 2,972,633	$ 2,406,564	$ 2,285,040	$ 7,904,880	$26,132,306	$ 24,989,931
Weighted average interest rate	2.28%	1.52%	1.60%	1.73%	2.08%	2.67%	2.15%	
Variable rate	$ 4,574,839	$ 3,264,598	$ —	$ —	$ —	$ —	$ 7,839,437	$ 6,883,956
Weighted average interest rate	4.34%	4.38%	—%	—%	—%	—%	4.35%	
Total Systemwide debt obligations:	$11,637,108	$ 6,765,518	$ 2,972,633	$2,406,564	$ 2,285,040	$ 7,904,880	$33,971,743	$ 31,873,887
Weighted average interest rate	3.08%	2.90%	1.60%	1.73%	2.08%	2.67%	2.66%	
Derivative instruments:								
Interest rate caps								
Notional value	$ —	$ 20,000	$ 20,000	$ —	$ 75,000	$ —	$ 115,000	$ 878
Weighted average receive rate	—%	—%	—%	—%	—%	—%	—%	
Weighted average pay rate	—%	—%	—%	—%	—%	—%	—%	
Pay-fixed swaps								
Notional value	$ 200,000	$ —	$ —	$ 25,000	$ 150,000	$ 1,050,000	$ 1,425,000	$ 1,334
Weighted average receive rate	3.83%	—%	—%	4.65%	3.69%	3.69%	3.73%	
Weighted average pay rate	1.33%	—%	—%	3.24%	2.79%	2.81%	2.61%	

Note 18 — Selected Quarterly Financial Information (unaudited)

Quarterly results of operations are shown below for the years ended December 31:

	2022				
	First	**Second**	**Third**	**Fourth**	**Total**
Net interest income	**$ 97,036**	**$ 96,299**	**$ 97,672**	**$ 95,155**	**$ 386,162**
Provision for credit losses (loan loss reversal)	**(865)**	**905**	**1,270**	**3,270**	**4,580**
Noninterest expense (income), net	**30,317**	**32,159**	**30,074**	**19,146**	**111,696**
Net income	**$ 67,584**	**$ 63,235**	**$ 66,328**	**$ 72,739**	**$ 269,886**

	2021				
	First	Second	Third	Fourth	Total
Net interest income	$ 94,065	$ 90,176	$ 87,426	$ 96,144	$ 367,811
Provision for credit losses (loan loss reversal)	1,247	1,394	419	(1,335)	1,725
Noninterest expense (income), net	26,842	26,359	28,615	29,679	111,495
Net income	$ 65,976	$ 62,423	$ 58,392	$ 67,800	$ 254,591

	2020				
	First	Second	Third	Fourth	Total
Net interest income	$ 71,453	$ 82,650	$ 90,143	$ 93,732	$ 337,978
Provision for credit losses (loan loss reversal)	(295)	881	335	160	1,081
Noninterest expense (income), net	21,285	23,594	21,992	18,889	85,760
Net income	$ 50,463	$ 58,175	$ 67,816	$ 74,683	$ 251,137

Note 19 — Combined Districtwide Financial Statements

The accompanying financial statements exclude financial information of the Bank's affiliated Associations. The Bank and its Associations are collectively referred to as the "Texas District." The Bank separately publishes certain unaudited combined financial information of the Texas District, including a condensed statement of condition and statement of income, which can be found on the Bank's website at *www.farmcreditbank.com.*

Note 20 — Subsequent Events

The Bank has evaluated subsequent events through March 1, 2023, which is the date the financial statements were issued. There are no significant subsequent events requiring disclosure as of March 1, 2023.

Disclosure Information and Index (unaudited)

DISCLOSURES REQUIRED BY FARM CREDIT ADMINISTRATION REGULATIONS

DESCRIPTION OF BUSINESS

A description of territory served, persons eligible to borrow, types of lending activities engaged in, financial services offered and related Farm Credit organizations required to be disclosed in this section are incorporated herein by reference to Note 1, "Organization and Operations," to the accompanying financial statements.

The description of significant developments that had or could have a material impact on results of operations or interest rates to borrowers, acquisitions or dispositions of material assets, material changes in the manner of conducting business, seasonal characteristics and concentrations of assets, if any, required to be disclosed in this section are incorporated herein by reference to "Management's Discussion and Analysis" of the Bank included in this annual report to shareholders.

Board of Directors and Bank Senior Officers

The Bank is governed by a seven-member board of directors. Five directors are farmers or ranchers, who are elected by the customers of the 14 associations that own the Bank. Two directors, who are not stockholders of any of the Associations, are appointed by the elected board members. The board of directors is responsible for directing the operations of the Bank. The Bank's senior officers report to the Bank's chief executive officer, and are collectively accountable to the board of directors and work with the board of directors to set the Bank's direction, goals and strategies.

The following represents certain information regarding the board of directors and senior officers of the Bank as of December 31, 2022, including business experience during the past five years:

DIRECTORS

James F. "Jimmy" Dodson, 69, chair of the board of directors, is from Robstown, Texas. He grows cotton, corn, wheat and milo on three family farm operations. Mr. Dodson serves on the Bank's audit and compensation committees and is chair of the Tenth District Farm Credit Council. He is one of the board's designated financial experts on the Bank's audit committee. He is president of Dodson Farms, Inc. and Dodson Ag, Inc., and is a partner in Dodson Family Farms. He is manager of Weber Station LLC, which is the managing partner of Weber Greene, Ltd., both of which are family farm real estate management firms. He is a member of the national Farm Credit Council, of which he is a past chair, and is a former director of FCC Services. Mr. Dodson is a founding member of Cotton Leads, a responsible cotton production initiative of U.S. and Australian Cotton Producer organizations. He also serves on the boards of Gulf Coast Cooperative, an agricultural retail cooperative, and the Texas Agricultural Cooperative Council, an industry trade association. He is past chair of the National Cotton Council of America, the American Cotton Producers and the Cotton Foundation, and formerly served as a director of Cotton Incorporated. He is past chair of the Texas AgFinance, FCS board of directors and a former member of the Texas District's Stockholders Advisory Committee. Mr. Dodson became a director of the Bank in 2003 and his term expires at the end of 2023.

Linda C. Floerke, 61, vice chair of the board of directors, is from near Lampasas, Texas. She serves on the Bank's audit and compensation committees and is also vice chair of the Tenth District Farm Credit Council. Ms. Floerke is the managing partner of Buena Vista Ranch, FLP, which is a hay and cattle operation. She is also co-owner and manager of Agro-Tech Services, Inc., an agricultural consultation business. She co-owns and manages rental property in Uvalde and Real counties and is a co-owner of Casa Floerke LLC, a rental property business. Ms. Floerke is also a lay leader for the Lampasas First United Methodist Church and serves on the Texas A&M AgriLife Extension Leadership Advisory Board, which provides oversight of agricultural extension services. She is a member of the Texas Agricultural Cooperative Council board of directors, an industry trade association. She previously served as a trustee of the Lampasas Independent School District. Ms. Floerke was a director of Lone Star Ag Credit, formerly Texas Land Bank, from 2012 through the end of 2016. She became a director in 2017 and her term expires at the end of 2025.

Dr. Larry L. Boleman, 77, is from College Station, Texas. He is owner and manager of Boleman Cattle Company consisting of raising registered and composite breeding cow/calf herds and the daily management of pasture and hay fields in Brazos and Burnet counties. Dr. Boleman is vice chair of the Bank's audit committee and is a member of the Bank's compensation committee. He also is a member of the Tenth District Farm Credit Council. Dr. Boleman is a retired Texas A&M University executive, animal science professor and Extension beef cattle specialist. He currently is superintendent of the Houston Livestock Show and Rodeo 4-H and FFA Livestock Judging Contest. Dr. Boleman previously served on the Capital Farm Credit board of directors. He became a director in 2021 and his term expires at the end of 2023.

Ralph W. "Buddy" Cortese, 76, is from Fort Sumner, New Mexico. He is president of Cortese Farm and Ranch, Inc., a farming and ranching operation. He served on the Bank's audit and compensation committees. Mr. Cortese is also a member of the Tenth District Farm Credit Council. He currently serves on the board of the Federal Farm Credit Banks Funding Corporation and is chair of the governance committee. Mr. Cortese served as chair of the board of directors of the Bank from 2000 through 2011. He is a member of the Texas Agricultural Cooperative Council board of directors, an industry trade association. From 2003 to 2008, he served on the board of the Federal Agricultural Mortgage Corporation (Farmer Mac), a government agency chartered to create a secondary market for agricultural loans, and is a former board member of the American Land Foundation, a property rights organization. Prior to joining the board, he was chair of the PCA of Eastern New Mexico board of directors. Mr. Cortese became a director in 1995 and his term expired at the end of 2022.

John L. “Jack” Dailey, 67, is from Extension, Louisiana. He is an owner and operator of Boeuf Prairie Farm, which produces cotton, corn, soybeans and beef cattle and is a manager and serves as vice-president of Franklin Farmers Alliance LLC, a farmer-owned agricultural retail store. Mr. Dailey is chair of the Bank’s compensation committee and serves on the Bank's audit committee. He also is a member of the Tenth District Farm Credit Council. He chairs the Louisiana Boll Weevil Eradication Commission and Franklin Parish Fire Protection District 2 and is treasurer of the Franklin Parish Farm Bureau, an agricultural trade organization. He also serves on the executive committee of the Louisiana Cotton and Grain Association, a trade organization, and the water management task force of the Louisiana Department of Natural Resources. Prior to joining the Bank board, he was vice chair of the Louisiana Land Bank board of directors. Mr. Dailey became a director in 2019 and his term expires at the end of 2024.

M. Philip Guthrie, 77, is one of two appointed members on the board. He is chair of the Bank’s audit committee and serves on the Bank’s compensation committee. He is also a member of the Tenth District Farm Credit Council. He is one of the board’s designated financial experts on the Bank’s audit committee. Mr. Guthrie is the chief executive officer of Denham Partners LLC, a Dallas-based private investment firm. He was formerly the chief executive officer of Neuro Holdings International LLC, a medical devices firm, and InTech Aerospace. Early in his career, he was chief financial officer of Southwest Airlines, and later served as chief financial officer of Braniff International during that airline’s reorganization. Mr. Guthrie also was the managing director of Mason Best Co., a Dallas-based investment firm that managed operations in over $2 billion in equity investments in a broad spectrum of industries, for 10 years, and has served as chair, director or chief executive officer of numerous private and public financial service companies, both in banking and insurance. He is also currently the board chair of Africa Specialty Risks, a reinsurance firm based in London, Bermuda and Mauritius and an advisor to several large private equity firms, focusing on the financial services industry worldwide. He serves as general partner of Ke’e Associates, a private investment company. A Certified Public Accountant and a Chartered Global Management Accountant, Mr. Guthrie is audit committee-qualified under the guidelines of the Securities and Exchange Commission, the New York Stock Exchange and Nasdaq. He is a stockholder of his family-managed 125-year-old livestock and crop operation in northern Louisiana. Mr. Guthrie became a director in 2015 and his term expires at the end of 2023.

Dorothy Nichols, 71, is one of two appointed members on the board. She is vice chair of the Bank’s compensation committee and serves on the Bank’s audit committee. Ms. Nichols is one of the board’s designated financial experts on the Bank’s audit committee. She is also a member of the Tenth District Farm Credit Council. Ms. Nichols had a 23-year career with the Farm Credit System Insurance Corporation (FCSIC), the government insurer for Farm Credit System debt obligations. She joined the FCSIC in 1995 as its first in-house general counsel, and from 2006 to 2018 served as its chief operating officer. Previously, she was the first chief operating officer of the Farm Credit Administration (FCA), the independent Federal agency that regulates and examines Farm Credit institutions and related entities. Prior to that position, Ms. Nichols was associate general counsel at the Federal Deposit Insurance Corporation. She began her government career in 1982 as a trial attorney with the Federal Home Loan Bank Board and the Federal Savings and Loan Insurance Corporation. She holds a bachelor’s degree in history from the University of Maryland and a doctorate in law from George Washington University. Ms. Nichols became a director in 2019 and her term expires at the end of 2024.

Committees

The board of directors has established an audit committee and a compensation committee. All members of the board serve on both the audit committee and the compensation committee. As the need arises, a member of the board of directors will also participate in the functions of the Bank’s credit review committee. The responsibilities of each board committee are set forth in its respective approved charter.

The disclosure of director and senior officer information included in this disclosure information and index was reviewed by the compensation committee prior to the annual report’s issuance (including the disclosure information and index).

Compensation of Directors

Directors of the Bank are compensated in cash for service on the Bank’s board. Effective December 20, 2018, the Agriculture Improvement Act of 2018 repealed the limitations on bank director compensation contained in section 4.21 of the Farm Credit Act. The board of directors has adopted a compensation philosophy under which it will evaluate Bank director compensation based on competitive market factors, aligning with the methodology utilized for the Bank’s employee compensation program. An annual compensation amount is considered as a retainer for all services performed by the director in an official capacity during the year and is approved by the board annually. In addition, directors may receive additional compensation in the amount approved by the board for certain leadership positions to which the director has been elected or assigned. The annual retainer fee is to be paid in equal monthly installments, including any additional compensation. Compensation for 2022 was paid at the rate of $115,000 per year, payable at $9,583 per month. Additional compensation was paid for leadership positions on the board and committees as follows: the chair of the board of directors in the amount of $60,000 and vice chair of the board of directors in the amount of $15,000, audit committee chair in the amount of $15,000 and compensation committee chair in the amount of $15,000. No director received non-cash compensation exceeding $5,000 in 2022. Total cash compensation paid to all directors as a group during 2022 was $910 thousand.

Information for each director for the year ended December 31, 2022, is provided below:

Board Member	Days Served at Board Meetings*	Days Served on Other Official Assignments**	Total Compensation Paid***
James F. Dodson	19.25	31.75	$ 175,000
Linda C. Floerke	19.25	35.75	130,000
Dr. Larry L. Boleman	19.25	19.00	115,000
Ralph W. Cortese	13.75	11.75	115,000
John L. Dailey	15.25	32.00	130,000
M. Philip Guthrie	19.25	27.50	130,000
Dorothy Nichols	19.25	30.00	115,000
			$ 910,000

*Includes travel time, but does not include time required to prepare for board meetings. Also includes attendance via teleconference.

**Includes audit committee meetings, compensation committee meetings, credit review committee meetings, special assignments, training and travel time.

***Reflects regular compensation and additional compensation for year presented.

Directors incur costs for reasonable travel, subsistence and other related expenses while conducting Bank business, including being reimbursed for such expenses. The aggregate amount of expenses incurred and reimbursed to directors in 2022, 2021 and 2020 totaled $147,480, $91,594 and $119,677, respectively. A copy of the Bank's travel policy is available to shareholders upon request.

BANK SENIOR OFFICERS

Name and Title	Time in Position	Experience – Past Five Years	Other Business Interests – Past Five Years
Amie Pala, Chief Executive Officer	2 years	Senior Vice President, Chief Financial Officer, FCBT	She serves as a member of the Bank's executive committee and serves on the Federal Farm Credit Banks Funding Corporation board of directors and audit committee. She is vice chair of the Farm Credit Presidents Planning committee and serves on the Business Practices Committee and Finance Committee. She is also a member of the board of governors for the Farm Credit System Captive Insurance Corporation. She is president of the Tenth District Farm Credit Council. She serves on the AgFirst/FCBT Plan Fiduciary committee and as the chair of the Defined Benefits Administration committee.
Isaac Bennett, Executive Vice President, Chief Credit Officer	1.5 years	Vice President and Unit Manager Capital Markets, FCBT	He serves as a member of the Bank's executive committee and serves as a Farm Credit System representative on the MANRRS (Minorities in Agriculture Natural Resources and Other Related Services) Advisory Board. He also serves as a member of the University of Tennessee Institute of Agriculture Advisory Board and as a board member of the University of Tennessee Foundation.
Brandon Blaut, Executive Vice President, Chief Financial Officer	2 years	Vice President of Finance and Loan Operations, May 2019 through December 2020; prior to May 2019, Vice President of Loan Operations, FCBT	He serves as a member of the Bank's executive committee and as a member of the Farm Credit System Disclosure Committee.
Scott Erlichman, Executive Vice President, Chief Information Officer	1.5 years	Chief Technology Officer, Hancock Whitney Bank	He serves as a member of the Bank's executive committee.
Nisha Rocap, Executive Vice President, Chief Audit Executive	5 years	Risk Assurance Director, PricewaterhouseCoopers	Her certifications include a Certified Public Accountant, a Certified Information Systems Auditor and a Certified Internal Auditor. She serves as a member of the Bank's executive committee and also serves as a member of the Audit and Risk Advisory Group for the Farm Credit Council Services Director Leadership Conference.
Nanci Tucker, Executive Vice President, Chief Administrative Officer and General Counsel	2 years	Senior Vice President, General Counsel, FCBT	She serves as a member of the Bank's executive committee and as a member of the Farm Credit System Reputation Risk and Analysis Planning Workgroup (RRAP). She is secretary of the Tenth District Farm Credit Council.

Compensation Discussion and Analysis – Senior Officers

Overview

The board of directors of the Farm Credit Bank of Texas, through its compensation committee, has pursued a compensation philosophy for the Bank that promotes leadership in the adoption and administration of a comprehensive compensation program.

A description of the Bank's compensation plans is as follows.

Base Pay

Market-based salaries along with the other incentive and benefits described below are critical to attracting and retaining needed talent in a highly competitive job market.

Defined Benefit Pension Plan

The Defined Benefit Pension Plan (Pension Plan) is a final average pay plan which was closed to new participants in 1996, and later fully closed to all participants, including rehires who had formerly participated in the plan. The Pension Plan benefits are based on the average monthly eligible compensation over the 60 consecutive months that produce the highest average after 1996 (FAC60). The Pension Plan's benefit formula for a Normal Retirement Pension is the sum of (a) 1.65% of FAC60 times "Years of Benefit Service" and (b) 0.50% of (i) FAC60 in excess of Social Security covered compensation times (ii) "Years of Benefit Service" (not to exceed 35).

The Pension Plan's benefit formula for the Normal Retirement Pension assumes that the employee's retirement age is 65, that the employee is married on the date the annuity begins, that the spouse is exactly two years younger than the employee and that the benefit is payable in the form of a 50% joint and survivor annuity. If any of those assumptions are incorrect, the benefit is recalculated to be the actuarial equivalent benefit. The Pension Plan benefit is offset by the pension benefits any employee may have from another Farm Credit System institution.

The Pension Plan was amended in 2013 to allow those retiring after September 1, 2013, to elect a lump-sum distribution option. The Pension Plan was also amended to allow participating employers to exclude from pension compensation new long-term incentive plans which began after January 1, 2014.

In 2014, the Pension Plan was amended to allow terminated employees with a vested benefit to also elect a lump-sum distribution beginning January 1, 2015.

In 2020, the Pension Plan was amended to allow in-service distributions. The earliest age at which the distribution can be taken (age 59½) was made available to defined benefit plans with legislative changes made in late December 2019.

401(k) Plan – Elective

Farm Credit Benefits Alliance (FCBA) 401(k) Plan is open to all Bank employees and includes up to a 4% employer match on employee deferrals up to Internal Revenue Service (IRS) directed limits. Employees become fully vested in the plan upon participation. The plan allows for self-directed investment choices by participants.

401(k) Plan – Non-Elective Defined Contribution Plan

FCBA 401(k) Plan's Defined Contribution component is open to employees not participating in the Defined Benefit Pension Plan. Employees become fully vested in the plan upon participation and receive a 5% employer contribution each pay period up to IRS-directed limits to the participant's account which is invested in the self-directed investment choices available.

Nonqualified Supplemental 401(k) Plan

This plan is open to all employees who meet the minimum salary requirements set by the IRS. It has three features: elective deferral of employee compensation; discretionary employer contributions; and restored employer contributions that make an employee "whole" when 401(k) IRS limitations are met. Deferred money is invested with similar investment fund choices as the qualified 401(k) Plan at the participant's direction.

Success Sharing Plan

The purpose of the Farm Credit Bank of Texas Success Sharing Plan (SSP) is to advance the mission of the Bank by recognizing employees with variable pay through a discretionary bonus. The SSP (also categorized as a bonus or profit-sharing plan), rewards employees as the overall organization experiences success and performs within the realities of the current market environment and in accordance with business planning goals and objectives. Additionally, it is expected to help to attract, motivate and retain Bank staff.

The SSP provides an annual award that is paid after the Bank's operational results and strategic objectives are reported and assessed by the compensation committee of the board. The compensation committee has the final authority to determine if a success sharing award is to be paid and what percentage of the award target will be funded. The CEO does not participate in this plan; otherwise, all employees are eligible to participate in the SSP for that year. This program applies the concept of differential factors for all eligible Bank participants, and is tiered into five groups according to employee job grades and their accountability level inside the entire organization. Each employee group has its own Success Sharing Award Factor for this plan. This factor is multiplied by the employee's base salary paid for the calendar year as of December 31st to arrive at the Success Sharing Plan award target for the year.

When a promotion or salary adjustment occurs during the year that elevates an employee's job grade into a higher employee group in the plan, the plan's award calculation may be prorated and paid at the separate employee group percentages for the periods the employee was in each of the employee groups. Additionally, when a salary adjustment occurs, the plan's award calculation will be prorated and paid at the separate employee salaries for the periods the employee was at each salary.

FCBT Retention Plan

This is a nonqualified plan for certain Bank employees that provides dollar incentives to remain employed for specific time periods to accomplish important Bank initiatives or to aid in leadership succession. It is paid according to the agreement arranged for each participant. The CEO approves participants, plan provisions and participant agreements. Four employees were offered and accepted two-year retention plans in November 2019. These employees have expertise with current software and systems from which the Bank is transitioning to new software/system solutions. In order to retain these employees with critical knowledge, the Bank offered retention plans that were accepted by the employees. The two-year retention plans paid 25% of the bonus amount at the end of the second quarter 2020 and 25% at the end of the fourth quarter 2020, with the remaining 50% paid at the end of the fourth quarter 2021. Four employees received two-year retention agreements ending on December 31, 2022. These four employees are valued employees of the Bank deemed to be critical to the success of the Bank and to the successful transition of management. In order to retain these employees, the Bank offered them retention plans. The plans pay out a specific amount to each employee at 6 months, at 1 year and on December 31, 2022. Two employees received 18-month retention agreements ending on June 30, 2023; and two employees received 12-month retention agreements ending on June 30, 2023. These employees are valued employees of the Bank also deemed to be critical to the continued success of the Bank.

Long-Term Incentive Program

This plan provides for annual cash bonus and deferred incentive bonus payments with eligibility for the chief executive officer and executive committee members. The annual long-term incentives amount reflects long-term incentives earned in the applicable year with payment to occur in the future based on an estimate of the total incentive over the three-year period.

Spot Awards Program

This Bank program allows for discretionary awards to be paid to employees throughout the year in recognition of outstanding performance events or service provided to the Bank's customers. Senior officers do not participate in this program.

Bank-Owned Vehicle and Vehicle Allowance Programs

Use of Bank-owned vehicles is provided to three groups within the Bank: the executive group, which is comprised of voting members of the Bank's executive committee; the senior management group, which includes members defined by the CEO exclusive of the voting members of the executive committee; and the other group consisting of employees who have been identified by executive committee members as requiring a vehicle for job performance. Any current employee who was in possession of a Bank-provided vehicle when vehicle eligibility guidelines were set was grandfathered for their remaining uninterrupted employment term at the Bank. Employees assigned use of a Bank-owned vehicle are required to maintain written records of their business and personal use. This data is used to annually impute to the employee's taxable wages the personal use value of the vehicle following the IRS lease value rule.

A vehicle allowance program is provided as an alternative to the bank-owned vehicle program. For employees eligible and receiving this allowance, the employee would receive a monthly determined amount of which the annual amount is included in the employee's taxable wages.

Educational and Training Program

This program was established in recognition that ongoing enrichment of employees' skills, knowledge and expertise is essential not only for the success of the Bank and the retention of key employees, but for the realization of employees' personal growth and achievement.

This program is directed to employees at all levels and includes formal orientation of new hires, a continuing education and degree program, and a licensing and certification program. The degree program reimbursement is open to full-time employees who have been with the Bank at least six months. This program covers tuition, lab fees, books and registration fees if the employee receives a grade of C or better in undergraduate courses and B or better in graduate-level courses and expenses are in excess of those reimbursable by a scholarship or other sources.

Tuition reimbursement, capped at $5,250, will not normally exceed the cost per semester hour charged at state-supported universities. Expenses incurred above the state-supported university baseline are the responsibility of the employee. Certain positions in the Bank must be staffed by employees who hold professional licenses and/or certifications. In these instances, the membership and license fees, training and educational expenses for obtaining and maintaining professional status, licenses and certifications are reimbursable.

Compensation, Risk and Performance

One of the critical strategic goals of the Bank is to provide market-driven financial products and support services to add value to our Association customers. The Bank succeeds at this through robust customer communications and relationships to stay aware of their business needs. Our staff provides technical, credit, operational and marketing support, and offers leadership in talent acquisition, retention and development. Our ability to succeed in these areas is dependent upon having a knowledgeable and experienced customer-service-focused workforce that is responsive but also proactive in meeting our district's business challenges and recognizing and taking advantage of opportunities, including promoting the Bank's mission as a government-sponsored enterprise.

While external factors impact compensation programs, internal measures are in place to make certain there is alignment with the Bank's performance. Market-driven base salaries are combined with a bonus program that is at risk each year. The compensation committee of the Texas District board annually determines the structure and the award for the Success Sharing Plan, a short-term bonus plan. This gives them the agility to modify or discontinue the plan in response to changing circumstances. The Bank is not locked into an incentive program for any extended period of time.

The SSP in regard to the total compensation mix is not overly significant or significantly larger than the market practice. Multiple performance measures are considered, which include financial and operational metrics. Although awards are based on a single year's performance, because the Bank's customers are its cooperative associations, performance in the time period measured is less uncertain than in businesses with larger and lesser-known customer bases. The board and compensation committee review the Bank's financial and operational performance at each meeting, so SSP decisions are reviewed by the same centralized group who hear those reports all year. Additionally, the compensation committee has external resources to support its oversight and uses that independent compensation consultant to review SSP awards with its annual executive compensation update.

In making its decision on the SSP award at year end, the compensation committee analyzes the Bank's performance against the business plan for the year. The business plan is approved by the full composition of the board at the beginning of the year and is monitored all year as the CEO and senior team members deliver management and other reporting on Bank performance and respond to director questions. Financial metrics include net income, the Associations' direct note volume, allowance for loan losses, nonaccrual loans, capital market and investment income, total asset growth, credit quality, permanent capital ratio, and at year end, the Association patronage. Operational accomplishments considered vary but typically include staff outreach to associations, participation and leadership in System workgroups and initiatives, debt issuances, credit and technology products and services delivered, marketing support, talent acquisition and talent management support, and continued progress in diversity and inclusion efforts.

Chief Executive Officer (CEO) Compensation Table and Policy for Bank

An employment agreement with an effective date of January 1, 2021 was executed in late 2020 between the Bank and the CEO. The term of the agreement covers a three-year period with a base salary for the CEO of $943,000. The compensation committee approved a salary of $1,000,000 effective January 1, 2022. Bonus payments, if any, were at the sole discretion of the compensation committee. The employment relationship between the Bank and CEO remains at-will, meaning the Bank could terminate the CEO's employment at any time, and the CEO could choose to leave at any time.

As previously mentioned, the CEO bonus is discretionary and subject to the approval of the Bank's compensation committee. The compensation committee reviews the same Bank financial performance and operational metrics that the committee evaluates for purposes of the SSP. Additionally, for both the CEO and senior officer group, the compensation committee reviews peer market data with its third-party consultant before making CEO base, bonus pay and long-term incentive decisions. The compensation committee also reviews seven dimensions of CEO performance and has discussions about goals set for the current year and successes in meeting those goals. The seven dimensions of CEO performance are: strategy and vision; leadership; innovation/technology; operating metrics; risk management; people management; and external relationships.

The following table summarizes the compensation paid to the CEO of the Bank during 2022, 2021 and 2020.

		Summary Compensation Table for the Bank's CEO						
Name of Chief Executive Officer	**Year**	**Salary (a)**	**Bonus (b)**	**Long-Term Incentives (c)**	**Change in Pension Value (d)**	**Deferred/Perquisites (e)**	**Other (f)**	**Total**
Amie Pala	2022	$ 1,000,000	$ 1,000,000	$ 258,808	$ —	$ 123,642	$ —	$ 2,382,450
Amie Pala	2021	943,027	1,085,000	125,608	—	48,389	—	2,202,024
Larry R. Doyle	2020	1,375,053	1,700,000	—	257,136	17,585	—	3,349,774

(a) Gross salary for year presented.

(b) Bonus compensation is presented in the year earned. For 2022, bonus compensation was paid in January of the following year based on the performance of the Bank for the previous year. For 2021, bonus compensation was paid in January of the following year based on the performance of the Bank for the previous year. For 2020, bonus compensation was paid in December based on the performance of the Bank for 2020.

(c) Cash payment of long-term incentives.

(d) For 2020, disclosure of the change in pension value represents the change in the actuarial present value of the accumulated benefit under the defined benefit pension plan, the Farm Credit Bank of Texas Pension Plan, from the pension measurement date used for financial statement reporting purposes with respect to the audited financial statements for the prior completed fiscal year to the pension measurement date used for financial statement reporting purposes with respect to the audited financial statements for the covered fiscal year. For 2020, the increase in pension value is primarily due to a decline in the discount rate.

(e) Deferred/Perquisites for 2022, 2021 and 2020 included contributions to a 401(k) plan and defined contribution plans, supplemental 401(k) discretionary contributions and employer match, automobile benefits, premiums paid for life insurance and annual leave payout in excess of 240 hours.

(f) No values to disclose.

Compensation of Senior Officers of the Bank

The following table summarizes the compensation paid to the aggregate number of senior officers, plus three highly compensated individuals that were not senior officers of the bank, during 2022. Amounts reflected in the table are presented in the year the compensation is earned.

		Summary Compensation Table for Other Officers					
Aggregate Number in Group (excludes CEO)	Year	Salary (a)	Bonus (b)	Change in Pension Value (c)	Deferred/Perquisites (d)	Other (e)	Total
8 Officers	2022	$ 2,792,717	$ 1,179,963	$ (735,740)	$ 331,113	$ 500,000	$ 4,068,053
7 Officers	2021	2,080,431	1,109,067	(70,043)	94,922	303,778	3,518,155
9 Officers	2020	2,736,426	1,292,539	469,355	399,907	263,625	5,161,852

(a) Gross salary for year presented.

(b) Bonuses paid within the first 31 days of the subsequent calendar year.

(c) Disclosure of the change in pension value represents the change in the actuarial present value of the accumulated benefit under the defined benefit pension plan, the Farm Credit Bank of Texas Pension Plan, from the pension measurement date used for financial statement reporting purposes with respect to the audited financial statements for the prior completed fiscal year to the pension measurement date used for financial statement reporting purposes with respect to the audited financial statements for the covered fiscal year. For 2022 and 2021, the decrease in pension value was primarily due to an increase in the discount rate. For 2020, the increase in pension value was primarily due to a decline in the discount rate.

(d) Deferred/Perquisites include contributions to 401(k) and defined contribution plans, supplemental 401(k) discretionary contributions and employer match, automobile benefits and premiums paid for life insurance.

(e) Other includes retention and discretionary bonuses paid, physical fitness compensation and annual leave payout in excess of 240 hours.

Disclosure of the compensation paid during 2022 to any senior officer or officer included in the table is available and will be disclosed to shareholders of the Bank upon written request.

Neither the CEO nor any other senior officer received non-cash compensation exceeding $5,000 in 2022.

Senior officers, including the CEO, incur costs for reasonable travel, subsistence and other related expenses while conducting Bank business, including being reimbursed for such expenses. A copy of the Bank's travel policy is available to shareholders upon request.

Pension Benefits Table for Senior Officer of the Bank

The following table presents the total annual benefit provided from the defined benefit pension plan applicable to one senior officer for the year ended December 31, 2022. Neither the CEO nor any other senior officers were eligible for the defined benefit pension plan.

Name	Plan Name	Number of Years Credited Service	Present Value of Accumulated Benefit	Payments During 2022
Senior Officer	Farm Credit Bank of Texas Pension Plan	37.138	$ 2,820,272	$ —

Description of Property

On September 30, 2003, the Bank entered into a lease for approximately 102,500 square feet of office space to house its headquarters facility located at 4801 Plaza on the Lake Drive, Austin, Texas. The lease was effective September 30, 2003, and its term was from September 1, 2003, to August 31, 2013. On November 16, 2010, the Bank entered into a lease amendment which extended the term of the lease to August 31, 2024. In addition, the lease amendment included expansion of the leased space to approximately 111,500 square feet of office space and an "early out" option to terminate the lease in 2020. On August 6, 2019, the Bank entered into a lease amendment which extended the term of the lease to December 31, 2034. The Bank entered into a desk sharing agreement in Washington, D.C., as of January 1, 2023, with the National Council of Farmer Cooperatives for legislative affairs purposes. The lease will expire on December 31, 2023.

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.

Description of Capital Structure

The Bank is authorized to issue and retire certain classes of capital stock and retained earnings in the management of its capital structure. Details of the capital structure are described in Note 11, "Shareholders' Equity," to the accompanying financial statements.

Description of Liabilities

The Bank's debt outstanding is described in Note 10, "Bonds and Notes," to the accompanying financial statements. The Bank's contingent liabilities are described in Note 14, "Commitments and Contingencies," to the accompanying financial statements. See also Note 12, "Employee Benefit Plans," with regard to obligations related to employee retirement plans.

Selected Financial Data

The selected financial data for the five years ended December 31, 2022, required to be disclosed, is incorporated herein by reference to the "Five-Year Summary of Selected Financial Data" included in this annual report to stockholders.

Management's Discussion and Analysis of Financial Condition and Results of Operations

"Management's Discussion and Analysis," which precedes the financial statements in this annual report, is incorporated herein by reference.

Transactions With Senior Officers and Directors

The policies on loans to and transactions with the Bank's officers and directors, required to be disclosed in this section, are incorporated herein by reference to Note 13, "Related Party Transactions," to the accompanying financial statements.

Related Party Transactions

As discussed in Note 1, "Organization and Operations," the Bank lends funds to the Associations to fund their loan portfolios. Interest income recognized on direct notes receivable from Associations was $455.2 million, $361.4 million and $375.6 million for 2022, 2021 and 2020, respectively. Further disclosure regarding these related party transactions is found in Note 4, "Loans and Reserves for Credit Losses," and Note 11, "Shareholders' Equity."

In addition to providing loan funds to Associations, the Bank also provides banking and support services to them, such as accounting, information systems, marketing and other services. Income derived by the Bank from these activities was $4.5 million, $3.5 million and $3.2 million for 2022, 2021 and 2020, respectively, and was included in the bank's noninterest income.

The Bank had no transactions with nor loans to directors or senior officers, their immediate family members, or any organizations with which such senior officers or directors are affiliated, during 2022, 2021 and 2020.

Relationship With Public Accountants

There were no changes in independent qualified public accountants since the prior annual report to shareholders, and there were no material disagreements with our independent qualified public accountants on any matter of accounting principles or financial statement disclosure during the period.

Fees for professional services paid by the Bank during 2022 to PricewaterhouseCoopers LLP, the Bank's independent qualified public accountants, were as follows.

- Audit services of $797,895 and of $325,308 related to the integrated audit for the Bank for 2022 and 2021 respectively. Engagement letter for audit services for 2022 for the integrated audit for the Bank reflects an estimated fee of $1,108,125, plus reasonable out-of-pocket expenses.

- No audit-related services were provided during 2022.
- Non-audit services of $900 associated with a disclosure tool.
- No tax services were provided during 2022.

The non-audit service for the Bank listed above required pre-approval of the Bank's audit committee, which was obtained.

Information regarding the fees for services rendered by the qualified public accountants for the Associations is disclosed in the individual Associations' annual reports.

Relationships With Unincorporated Business Entities (UBEs)

The Bank and one of our associations are among the forming limited partners for a $154.5 million Rural Business Investment Company (RBIC), Advantage Capital Agribusiness Partners, LP (ACAP), established on October 3, 2014. Additionally, the Bank is among the forming limited partners for a $31.3 million RBIC, Innova Ag Innovation Fund IV, LP (Innova), established on December 12, 2016. The Bank and Farm Credit System partners are among the forming limited partners for a $113.5 million third RBIC investment, Midwest Growth Partners II Fund (Midwest), established on November 14, 2018. The Bank and one of its Associations entered into an RBIC fourth investment on September 30, 2019. The Bank committed to invest $10.0 million alongside Farm Credit System partners in Pharos Capital Partners IV Fund. The RBICs will facilitate private equity investments in agriculture-related businesses that will create growth and job opportunities in rural America. Each limited partner has a commitment to contribute up to $20.0 million, $5.0 million, $5.0 million and $10.0 million to ACAP, Innova, Midwest and Pharos, respectively, over a 10-year period and, as of December 31, 2022, FCBT has invested $24.9 million in the RBICs, included in other assets on the balance sheet.

Information regarding UBEs for the Associations is disclosed in the individual Association annual reports.

Financial Statements

The financial statements, together with the report thereon of PricewaterhouseCoopers LLP dated March 1, 2023, and the report of management in this annual report to shareholders, are incorporated herein by reference.

The Farm Credit Bank of Texas' and its affiliated Associations' annual and quarterly reports are available free of charge, upon request. These reports can be obtained by writing to Farm Credit Bank of Texas, Corporate Communications, P.O. Box 202590, Austin, Texas 78720 or by calling (512) 483-9260. Copies of the Bank's quarterly and annual stockholder reports can be requested by sending an email to *fcb@farmcreditbank.com*. The Bank's quarterly report is available approximately 40 days after the end of each fiscal quarter. The Bank's annual report will be posted on the Bank's website (*www.farmcreditbank.com*) within 75 calendar days of the end of the Bank's fiscal year. This posting coincides with an electronic version of the report being provided to its regulator, the Farm Credit Administration. Within 90 calendar days of the end of the Bank's fiscal year, a copy of the Bank's annual report will be provided to its stockholders.

Borrower Information Regulations

Farm Credit Administration (FCA) regulations require that borrower information be held in strict confidence by Farm Credit institutions, their directors, officers and employees. These regulations provide Farm Credit institutions clear guidelines for protecting their borrowers' nonpublic personal information.

On November 10, 1999, the FCA board adopted a policy that requires Farm Credit institutions to formally inform new borrowers at loan closing of the FCA regulations on releasing borrower information and to address this information in the annual report to shareholders. The implementation of these measures ensures that new and existing borrowers are aware of the privacy protections afforded them through FCA regulations and Farm Credit System institution efforts.

Credit and Services to Young, Beginning and Small (YBS) Farmers and Ranchers, and Producers or Harvesters of Aquatic Products

In line with its mission, the Associations have policies and programs for making credit available to young, beginning and small farmers and ranchers.

The definitions for YBS, as prescribed by FCA regulations, are provided below.

Young Farmer or Rancher – A farmer, rancher or producer or harvester of aquatic products who was 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.

For the purposes of YBS, the term "loan" means an extension of, or a commitment to extend, credit authorized under the Farm Credit Act, whether it results from direct negotiations between a lender and a borrower or is purchased from, or discounted for, another lender, including participation interests. A farmer/rancher may be included in multiple categories as they are included in each category in which the definition is met.

The Bank and Associations' efforts to respond to the credit and related needs of YBS borrowers are evidenced by the following table:

	At December 31, 2022	
	Number of Loans	Volume
(dollars in thousands)		
Total loans and commitments	84,550	$ 44,689,466
Loans and commitments to young farmers and ranchers	15,828	$ 3,878,388
Percent of loans and commitments to young farmers and ranchers	18.72 %	8.68 %
Loans and commitments to beginning farmers and ranchers	48,130	$ 14,134,639
Percent of loans and commitments to beginning farmers and ranchers	56.92 %	31.63 %

The following table summarizes information regarding new loans to young and beginning farmers and ranchers:

	For the year ended December 31, 2022	
	Number of Loans	Volume
(dollars in thousands)		
Total new loans and commitments	14,899	$ 13,713,094
New loans and commitments to young farmers and ranchers	2,762	$ 903,365
Percent of new loans and commitments to young farmers and ranchers	18.54 %	6.59 %
New loans and commitments to beginning farmers and ranchers	7,899	$ 3,201,176
Percent of new loans and commitments to beginning farmers and ranchers	53.02 %	23.34 %

The following table summarizes information regarding loans to small farmers and ranchers:

	At December 31, 2022				
	Loan Size				
	$50 Thousand or Less	$50 to $100 Thousand	$100 to $250 Thousand	More Than $250 Thousand	Total
(dollars in thousands)					
Total number of loans and commitments	10,130	15,550	27,328	31,542	84,550
Number of loans and commitments to small farmers and ranchers	7,834	12,672	22,453	19,347	62,306
Percent of loans and commitments to small farmers and ranchers	77.33%	81.49%	82.16%	61.34%	73.69%
Total loans and commitments volume	$ 256,505	$ 879,711	$ 3,552,052	$ 40,001,198	$ 44,689,466
Total loans and commitments to small farmers and ranchers volume	$ 179,678	$ 714,568	$ 2,909,342	$ 12,368,629	$ 16,172,217
Percent of loans and commitments volume to small farmers and ranchers	70.05%	81.23%	81.91%	30.92%	36.19%

The following table summarizes information regarding new loans made to small farmers and ranchers:

	For the year ended December 31, 2022				
	Loan Size				
	$50 Thousand or Less	$50 to $100 Thousand	$100 to $250 Thousand	More Than $250 Thousand	Total
(dollars in thousands)					
Total new number of loans and commitments	2,005	2,217	4,129	6,548	14,899
Number of new loans and commitments to small farmers and ranchers	1,575	1,720	3,263	3,379	9,937
Percent of new loans and commitments to small farmers and ranchers	78.55%	77.58%	79.03%	51.60%	66.70%
Total new loans and commitments volume	$ 65,779	$ 172,517	$ 693,189	$ 12,781,609	$ 13,713,094
Total new loans and commitments to small farmers and ranchers volume	$ 48,350	$ 134,041	$ 544,040	$ 2,917,488	$ 3,643,919
Percent of new loans and commitments volume to small farmers and ranchers	73.50%	77.70%	78.48%	22.83%	26.57%

Additional Regulatory Information — Farm Credit Bank of Texas

(unaudited)

Overview

The following disclosures contain regulatory disclosures as required under Farm Credit Administration (FCA) Regulation 628.63 for risk-adjusted ratios: common equity tier 1, tier 1 capital and total capital. Refer to Note 11 of the accompanying financial statements for information regarding the statutorily required permanent capital ratio. As required, these disclosures are made available for at least three years and can be accessed at Farm Credit Bank of Texas' website at *www.farmcreditbank.com*.

Disclosure Map

The following table summarizes the annual disclosure requirements and indicates where each matter is disclosed in this annual report.

Disclosure Requirement	Description	2022 Annual Report Reference
Scope of Application	Corporate entity and structure	Page 15, Page 45, Page 93
	Restrictions on transfers of funds or capital	Page 93
Capital Structure	Terms and conditions of capital instruments	Note 11 – Pages 66 to 71; Pages 9 to 95
	Regulatory capital components	Pages 67, 96
Capital Adequacy	Capital adequacy assessment	Pages 27 to 29, Page 9
	Risk-weighted assets	Page 96
	Regulatory capital ratios	Page 14, Pages 27 to 29; Note 11 – Page 66
Capital Buffers	Quantitative disclosures	Page 101
Credit Risk	Credit risk management and policies	Page 21 to 22, Pages 103 to 104
	Summary of exposures	Page 99
	Geographic distribution	Page 99
	Industry distribution	Page 99
	Contractual maturity	Page 99
	Impaired loans and allowance for credit losses	Note 4 – Pages 54 to 62; Pages 97 to 99
Counterparty Credit Risk-Related Exposures	General description	Page 21, Pages 99 to 100
	Counterparty exposures	Note 15 – Page 74; Note 17 – Page 80 to 82
Credit Risk Mitigation	General description	Pages 97 to 100
	Exposures with reduced capital requirements	Page 106
Securitization	General description	Note 3 – Pages 51 to 55; Page 106
	Securitization exposures	Note 3 – Pages 51 to 55
		Note 16 – Pages 75 to 80; Page 101
Equities	General description	Page 101
Interest Rate Risk for Non-Trading Activities	General description	Pages 23 to 25; Page 101
	Interest rate sensitivity	Page 24

Scope of Application

The Farm Credit Bank of Texas (FCBT or Bank) is one of the banks of the Farm Credit System (System), a nationwide system of cooperatively owned banks and associations established by acts of Congress. The System is subject to the provisions of the Farm Credit Act of 1971, as amended (Farm Credit Act). The accounting and reporting policies of the Bank conform to generally accepted accounting principles in the United States of America (GAAP) and prevailing practices within the banking industry.

The Bank and its related Associations collectively are referred to as the Farm Credit Bank of Texas and affiliated Associations (collectively, the Texas District). The Texas District's one FLCA (Federal Land Credit Association), 13 ACA (Agricultural Credit Associations) parent associations, each containing two wholly-owned subsidiaries (an FLCA and a Production Credit Association [PCA]), certain Other Financing Institutions (OFIs) and preferred stockholders jointly owned the Bank at December 31, 2022. The FLCA and ACAs collectively are referred to as Associations. The Bank is the primary funding source for the Associations. FCBT has no subsidiaries; therefore, the financial statements are only those of the Bank and are not consolidated with any other entity. In conjunction with other System entities, the Bank jointly owns certain service organizations: the Federal Farm Credit Banks Funding Corporation (Funding Corporation), the Farm Credit System Building Association (FCSBA), and the Farm Credit System Association Captive Insurance Company. Certain of the Bank's investments in other System institutions, including the investment in the Funding Corporation and FCSBA, are deducted from capital as only the institution who issued the equities may count the amount as capital. The Bank's unincorporated business entities (UBEs), including its investment in the Rural Business Investment Companies (RBICs), and its investment in the Farm Credit System Association Captive Insurance Company are included in risk-weighted assets and are not deducted from any capital component in accordance with FCA regulations. The Bank has no consolidated subsidiaries: therefore, there are no consolidated entities for which the total capital requirement is deducted; there are no restrictions on transfer of funds or total capital with other consolidated entities; and no subsidiary exists that is below the minimum total capital requirement.

Capital Structure

The par value of the Bank's common stock is $5 and the par value of the Class B Series 2, 3 and 4 Noncumulative Perpetual Preferred Stock is $100, $1,000 and $1,000 per share, respectively. The minimum initial borrower investment is equal to the greater of one thousand dollars or 2% of the associations' and OFIs' average borrowing from the Bank. Our bylaws permit the Bank's board of directors to set the required level of Association and OFI investment in the Bank within a range of 2% to 5% of the average Association and OFI borrowings. In 2022, the required investment level was 2%. There are no capital sharing agreements between the Bank and its Associations.

Description of Bank Equities

Descriptions of the Bank's equities, capitalization requirements and restrictions are provided as follows:

Class B Series 2 Noncumulative Subordinated Perpetual Preferred Stock (Class B-2 preferred stock) – On July 23, 2013, the Bank issued $300.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 2, representing three million shares at $100 per share par value, for net proceeds of $296.0 million. Dividends on the Class B-2 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2013, at an annual fixed rate of 6.75% of par value of $100 per share up to, but excluding September 15, 2023, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 4.01%. The Class B-2 preferred stock is not mandatorily redeemable at any time, but may be redeemed in whole or in part at the option of the Bank on any dividend payment date on or after September 15, 2023. The Class B-2 preferred stock ranks, both as to dividends and upon liquidation, pari passu with respect to the existing Class B-3 and Class B-4 preferred stock, and senior to all other classes of the Bank's outstanding capital stock. Class B-2 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to Associations and OFIs. For regulatory purposes, the Class B-2 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations.

Class B Series 3 Noncumulative Subordinated Perpetual Preferred Stock (Class B-3 preferred stock) – On June 25, 2018, the Bank issued $100.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 3, representing one hundred thousand shares at $1,000 per share par value, with issuance costs on preferred stock of $1.3 million for net proceeds of $98.7 million. Dividends on the Class B-3 preferred stock, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2018, at an annual fixed rate of 6.20% of par value of $1,000 per share up to, but excluding June 15, 2028, from and after which date will be paid at an annual rate of the 3-Month USD LIBOR plus 3.223%. The Class B-3 preferred stock is not mandatorily redeemable at any time, but may be redeemed in whole or in part at the option of the Bank on any dividend payment date on or after June 15, 2028. The Class B-3 preferred stock ranks pari passu with respect to the existing Class B-2 and Class B-4 preferred stock, and senior to all of the Bank's outstanding capital stock. Class B-3 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to Associations and OFIs. For regulatory purposes, the Class B-3 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations.

Class B Series 4 Noncumulative Subordinated Perpetual Preferred Stock (Class B-4 preferred stock) – On July 15, 2020, the Bank issued $350.0 million of Class B noncumulative subordinated perpetual preferred stock, Series 4 (Class B-4 preferred stock), representing three hundred fifty thousand shares at $1,000 per share par value, for net proceeds of $346.1 million. Dividends on the Class B-4, if declared by the board of directors at its sole discretion, are noncumulative and are payable quarterly in arrears on the fifteenth day of March, June, September and December in each year, commencing September 15, 2020, at an annual fixed rate of 5.70% of par value of $1,000 per share up to, but excluding, September 15, 2025, from and after which date will be paid at an annual rate of the five-year Treasury rate as of the most recent five-year reset dividend determination date plus 5.415%. The Class B-4 is not mandatorily redeemable at any time, but may be redeemed in whole or part at the option of the Bank, with prior approval from the FCA, on any dividend payment date on or after September 15, 2025. The Class B-4 ranks pari passu with respect to the existing Class B-2 and Class B-3 preferred stock and senior to all of the Bank's other outstanding capital stock. Class B-4 preferred stock dividends are required by "dividend/patronage stopper" clauses to be declared and accrued before payment of stock investment and direct note patronages to Associations and OFIs. For regulatory purposes, the Class B-4 preferred stock is included in permanent capital, total capital and tier 1 capital within certain limitations.

Class A Voting Common Stock – According to the Bank's bylaws, the minimum and maximum stock investments that the Bank may require of the ACAs and FLCA are 2% (or one thousand dollars, whichever is greater) and 5%. The investments in the Bank are required to be in the form of Class A voting common stock (with a par value of $5 per share) and allocated retained earnings. The current investment required of the associations is 2% of their average borrowings from the Bank. Under the Capitalized Participation Pool (CPP) program, the stock investment that the bank requires is 1.6% of each Farmer Mac AMBS pool and 8% of each loan pool. Under the Capitalized and Non-Capitalized Participation Pool (NCPP) program, the Bank redeems stock in the amount of 2.0% of the par value of the loans purchased. No Class A voting common stock may be retired except at the sole discretion of the Bank's board of directors, and provided that after such retirement, the Bank shall meet minimum capital adequacy standards as may from time to time be promulgated by the FCA or such higher level as the board may from time to time establish in the Bank's Capital Plan. There were 94.0 million shares, 81.9 million shares and 71.8 million shares of Class A voting common stock issued and outstanding at December 31, 2022, 2021 and 2020, respectively.

Class A Nonvoting Common Stock – The Bank requires OFIs to make cash purchases of Class A nonvoting common stock (with a par value of $5 per share) in the Bank based on a minimum stock investment of 2% (or one thousand dollars, whichever is greater) and on a maximum of 5%. The current investment required of the OFIs is 2% of their average borrowings from the Bank. No Class A nonvoting common stock may be retired except at the sole discretion of the Bank's board of directors, and provided that after such retirement, the Bank shall meet minimum capital adequacy standards as may from time to time be promulgated by the FCA or such higher level as the board may from time to time establish in the Bank's Capital Plan. The Bank has a first lien on these equities for the repayment of any indebtedness to the Bank. There were 174 thousand shares, 150 thousand shares and 154 thousand shares of Class A nonvoting common stock issued and outstanding at December 31, 2022, 2021 and 2020, respectively.

Allocated retained earnings of $74.0 million, $66.5 million and $59.8 million at December 31, 2022, 2021 and 2020, respectively, consisted of allocated equity for the payment of patronage on loans participated with another System bank.

The following table provides a summary of the Bank's capital structure at December 31, 2022:

(dollars in thousands)		Three-Month Average Daily Balance
Common equity tier 1 capital (CET1)		
Common cooperative equities:		
Purchased other required stock ≥ 7 years	$	374,887
Allocated stock ≥ 7 years		36,042
Allocated equities:		
Qualified allocated equities subject to retirement		66,961
Nonqualified allocated equities subject to retirement		—
Nonqualified allocated equities not subject to retirement		—
Unallocated retained earnings		1,051,848
Adjustments for patronage or dividend accrued receivables and payables		(5,165)
Paid-in capital		—
Regulatory adjustments and deductions made to CET1		(157,833)
Total CET1	$	1,366,740
Additional tier 1 capital (AT1)		
Noncumulative perpetual preferred stock	$	750,000
Regulatory adjustments and deductions made to AT1 capital		—
Total AT1 capital		750,000
Total tier 1 capital	$	2,116,740
Tier 2 capital (T2)		
Common cooperative equities not included in CET1	$	—
T2 capital elements (allowance for loan losses)		13,110
Regulatory adjustments and deductions made to T2 capital		—
Total T2 Capital		13,110
Total capital	$	2,129,850
		Balances as of December 31, 2022
Reconciliation to statement of condition:		
Total capital	$	2,009,067
Additions:		
Accumulated other comprehensive loss		(540,359)
Regulatory adjustments and deductions		182,706
Subtractions:		
Tier 2 allowance and reserve		(16,451)
Regulatory deductions		(11,600)
Total shareholders' equity	$	1,623,363

Capital Adequacy and Capital Buffers

In conjunction with the annual business and financial planning process, the board of directors reviews and approves a capital adequacy plan. 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. The Bank regularly assesses the adequacy of our capital to support current and future activities. This assessment includes maintaining a formal capital plan that addresses our capital targets in relation to our risks and establishes the required investment levels. The plan assesses the capital level and composition necessary to support financial viability and growth. The plan considers factors such as credit risk and allowance levels, quality and quantity of earnings, sufficiency of liquid funds, operational risk, interest rate risk and growth in determining optimal capital levels. The Bank periodically reviews and modifies these targets to reflect current business and economic conditions. Our capital plan is updated at least annually and is subject to change at the discretion of the Bank's board of directors.

Risk-Weighted Assets at December 31, 2022:

(dollars in thousands)	Three-Month Average Daily Balance
On-Balance Sheet Assets:	
Exposures to sovereign entities	$ —
Exposures to supranational entities and Multilateral Development Banks	—
Exposures to government-sponsored entities (direct notes to associations)	3,927,867
Exposures to depository institutions, foreign banks and credit unions	3,867
Exposures to public sector entities	—
Corporate exposures, including borrower loans and exposures to other financing institutions	8,472,732
Residential mortgage exposures	—
Past due and nonaccrual exposures	46,130
Securitization exposures	112,047
Exposures to other assets	878,232
Total Risk-Weighted Assets, On-Balance Sheet	13,440,875
Off-Balance Sheet:	
Letters of credit	103,852
Commitments	2,211,609
Repo-styled transactions	10
Over-the-counter derivatives	16,683
Unsettled transactions	—
Cleared transactions	—
All other off-balance sheet exposures	5,289
Total Risk-Weighted Assets, Off-Balance Sheet	2,337,443
Total Risk-Weighted Assets Before Adjustments	**15,778,318**
Additions:	
Intra-System equity investments	157,833
Deductions:	
Regulatory capital deductions	(157,833)
Total Standardized Risk-Weighted Assets	**$ 15,778,318**

Capital Conservation and Leverage Buffers

As of December 31, 2022, the Bank was well-capitalized and exceeded all capital requirements. Because the Bank's capital and leverage ratios exceeded the minimum regulatory requirements of 8.00% and 4.00%, respectively, the Bank currently has no limitations on its distributions and discretionary bonus payments.

The aggregate amount of eligible retained income was $26.0 million as of December 31, 2022.

	Regulatory Minimums	Capital Conservation Buffers	Ratios as of December 31, 2022	Calculated Buffer
Common equity tier 1 capital ratio	4.50%	2.50%	8.66%	4.16%
Tier 1 capital ratio	6.00%	2.50%	13.42%	7.42%
Total capital ratio	8.00%	2.50%	13.50%	5.50%
Tier 1 leverage ratio	4.00%	1.00%	5.94%	1.94%

Credit Risk

System entities have specific lending authorities within their chartered territories. The Bank is chartered to serve its Associations in Texas, Alabama, Mississippi, Louisiana and most of New Mexico. Our chartered territory is referred to as the Texas District. FCBT serves its chartered territory by lending to the Texas District's Federal Land Credit Association (FLCA) and Agricultural Credit Associations (ACAs). The allowance for loan losses is determined based on a periodic evaluation of the loan portfolio, which identifies loans that may be impaired based on characteristics such as probability of default (PD) and loss given default (LGD) as is further discussed in the section "Allowance for Loan Losses and Reserve for Losses on Unfunded Commitments." Allowance needs by geographic region are only considered in circumstances that may not otherwise be reflected in the PD and LGD, such as flooding or drought. There was no allowance attributed to a geographic area as of December 31, 2022.

Impaired Loans

Impaired loans are loans for which it is probable that not all principal and interest will be collected according to the contractual terms of the loan and are generally considered substandard or doubtful, which is in accordance with the loan rating model, as described below. Impaired loans include nonaccrual loans, formally restructured loans (TDR), and loans 90 days past due still accruing interest.

A loan is past due when any contractually scheduled loan payments have not been received in full on or before the contractual due date and remains due.

A restructured loan constitutes a troubled debt restructuring if for economic or legal reasons related to the debtor's financial difficulties the Bank grants a concession to the debtor that it would not otherwise consider. A concession is generally granted in order to minimize the Bank's economic loss and avoid foreclosure. Concessions vary by program, are borrower-specific and may include interest rate reductions, term extensions, payment deferrals or the acceptance of additional collateral in lieu of payments. In limited circumstances, principal may be forgiven. A loan restructured in a troubled debt restructuring is an impaired loan.

Impaired loans are generally placed in nonaccrual status when principal or interest is delinquent for 90 days (unless adequately secured and in the process of collection), circumstances indicate that collection of principal and interest is in doubt or legal action, including foreclosure or other forms of collateral conveyance, has been initiated to collect the outstanding principal and interest. When a loan is placed in nonaccrual status, accrued interest that is considered uncollectible is either reversed (if accrued in the current year) or charged against the allowance for loan losses (if accrued in the prior year). Loans are charged off at the time they are determined to be uncollectible.

Payments received on nonaccrual loans are generally applied to the recorded investment in the loan asset. If collection of the recorded investment in the loan is fully expected and the loan does not have a remaining unrecovered prior charge-off associated with it, payments are recognized as interest income. Nonaccrual loans may be returned to accrual status when contractual principal and interest are current, the borrower has demonstrated payment performance, there are no unrecovered prior charge-offs and collection of future payments is no longer in doubt. If previously unrecognized interest income exists at the time the loan is transferred to accrual status, cash received at the time of or subsequent to the transfer is first recorded as interest income until such time as the recorded balance equals the contractual indebtedness of the borrower.

Allowance for Loan Losses and Reserve for Unfunded Commitments

The Bank uses a two-dimensional loan rating model based on an internally generated combined System risk-rating guidance that incorporates a 14-point probability of default rating scale to identify and track the probability of borrower default and a separate scale addressing loss given default over a period of time. Probability of default is the probability that a borrower will experience a default within 12 months from the date of the determination of the risk rating. A default is considered to have occurred if the Bank believes the borrower will not be able to pay its obligation in full or the borrower is past due more than 90 days. The loss given default is management's estimate as to the anticipated principal loss on a specific loan assuming default has occurred or is expected to occur within the next 12 months.

Each of the probability of default categories carries a distinct percentage of default probability. The 14-point probability of default rating scale provides for granularity of the probability of default, especially in the acceptable ratings. There are nine acceptable categories that range from a borrower of the highest quality to a borrower of minimally acceptable quality. The probability of default between 1 and 9 is very narrow and would reflect almost no default to a minimal default percentage. The probability of default grows more rapidly as a loan moves from a 9 to other assets especially mentioned and grows significantly as a loan moves to a substandard (viable) level. A substandard (nonviable) rating indicates that the probability of default is almost certain.

The credit risk rating methodology is a key component of the Bank's allowance for loan losses evaluation, and is generally incorporated into the institution's loan underwriting standards and internal lending limit. The allowance for loan losses is a valuation account used to reasonably estimate loan and lease losses as of the financial statement date. Determining the appropriate allowance for loan losses balance involves significant judgment about when a loss has been incurred and the amount of that loss. The determination of the allowance for loan losses is based on management's current judgments about the credit quality of its loan portfolio. A specific allowance may be established for impaired loans under authoritative accounting guidance. Impairment of these loans is measured based on the present value of expected future cash flows discounted at the loan's effective interest rate or, as practically expedient, at the loan's observable market price or fair value of the collateral if the loan is collateral-dependent. The allowance for loan losses encompasses various judgments, evaluations and appraisals with respect to the loans and their underlying security that, by their nature, contain elements of uncertainty and imprecision. Changes in the agricultural economy and their impact on borrower repayment capacity will cause these various judgments, evaluations and appraisals to change over time. Accordingly, actual circumstances could vary significantly from the institutions' expectations and predictions of those circumstances. The allowance is increased through provisions for loan losses and loan recoveries and is decreased through reversals of provisions for loan losses and loan charge-offs. The level of allowance for loan losses is generally based on recent charge-off experience adjusted for relevant environmental factors. The allowance for loan losses includes components for loans individually evaluated for impairment and loans collectively evaluated for impairment. Generally, for loans individually evaluated, the allowance for loan losses represents the difference between the recorded investment in the loan and the present value of the cash flows expected to be collected discounted at the loan's effective interest rate, or at the fair value of the collateral, if the loan is collateral-dependent. For those loans collectively evaluated for impairment, the allowance for loan losses is determined using the risk-rating model.

The Bank's reserves for credit losses include the allowance for loan losses and a reserve for losses on unfunded commitments. The reserve for losses on unfunded commitments includes letters of credit and unused loan commitments, and is recorded in other liabilities on the balance sheet.

Credit Risk Management

Credit Risk Mitigation Related to Loans

Credit risk arises from the potential inability of an obligor to meet its repayment obligation and exists in our outstanding loans, letters of credit, unfunded loan commitments, investment portfolio and derivative counterparty credit exposures. The Bank manages credit risk associated with our lending activities through an assessment of the credit risk profile of an individual borrower. The Bank sets its own underwriting standards and lending policies, approved by the board of directors that provide direction to loan officers. Underwriting standards include, among other things, an evaluation of:

- *character* — borrower integrity and credit history;
- *capacity* — repayment capacity of the borrower based on cash flows from operations or other sources of income;
- *collateral* — protects the lender in the event of default and represents a potential secondary source of loan repayment;
- *capital* — ability of the operation to survive unanticipated risks; and
- *conditions* — requirements that govern intended use of loan funds.

The retail credit risk management process begins with an analysis of the borrower's credit history, repayment capacity and financial position. Repayment capacity focuses on the borrower's ability to repay the loan based on cash flows from operations or other sources of income, including non-farm income. Real estate loans with terms greater than 10 years must be secured by first liens on the real estate (collateral). As required by Farm Credit Administration regulations, each institution that makes loans on a secured basis must have collateral evaluation policies and procedures. Real estate loans with terms greater than 10 years may be made only in amounts up to 85% of the original appraised value of the property taken as security or up to 97% of the appraised value if guaranteed by a state, Federal or other governmental agency. The actual loan to appraised value when loans are made is generally lower than the statutory maximum percentage. Appraisals are required for loans of more than $250,000. This risk rating process incorporates objective and subjective criteria to identify inherent strengths and weaknesses and risks in a particular relationship.

This credit risk probability of default rating process uses a two dimensional loan rating structure, incorporating a 14-point probability of default rating scale to identify and track the probability of borrower default and a separate 4-point scale addressing loss given default. The 14-point probability of default rating scale provides for nine "acceptable" categories, one "other assets especially mentioned" category, two "substandard" categories, one "doubtful" category and one "loss" category. The loss given default scale establishes ranges of anticipated principal loss if the loan defaults.

By buying and selling loans or interests in loans to or from other institutions within the System or outside the System, the Bank limits our exposure to either a borrower or commodity concentration. This also allows us to manage growth and capital, and to improve geographic diversification. Portfolio credit risk is also evaluated with the goal of managing the concentration of credit risk. Concentration risk is reviewed and measured by industry, commodity, geography and customer limits.

Refer to the Risk-Weighted Asset table on pages 98 for the Bank's total and average loans, investment securities, off-balance sheet commitments and over-the-counter (OTC) derivatives. The following table illustrates the Bank's total exposure (including commitments) by loan type as of December 31, 2022.

	Total Exposure
Direct notes receivable from District Associations	$ 26,125,158
Real estate mortgage	1,235,823
Production and intermediate-term	1,449,999
Agribusiness	
Loans to cooperatives	1,185,901
Processing and marketing	5,014,980
Farm-related business	441,478
Communications	883,676
Energy (rural utilities)	2,350,362
Water and waste disposal	331,454
Mission-related	2,172
Rural home	1,815
International	328,103
Leases	7,970
Loans to other financing institutions	68,365
Total	$ 39,427,256

The following table provides an overview of the remaining contractual maturity of the Bank's credit risk portfolio categorized by exposure at December 31, 2022. The remaining contractual maturity for the Bank's direct notes from the District Associations is included in the loans line item based on the contractual terms of the underlying Association retail loans. Unfunded commitments for direct notes from District Associations reflects the aggregate remaining amount that the District Associations can borrow from the Bank and is included in the unfunded commitments line item within the due in one year or less column.

(dollars in thousands)	Due in one year or less	Due after one year through five years	Due after five years	Total
Loans	$ 11,043,529	$ 10,319,099	$ 6,901,594	$ 28,264,222
Off-balance sheet commitments:				
Financial letters of credit	90,662	20,584	3,860	115,106
Performance letters of credit	14,122	391	—	14,513
Commercial letters of credit	3,399	681	—	4,080
Unfunded commitments	7,393,607	3,329,903	305,823	11,029,333
Investments	634,322	941,269	5,069,091	6,644,682
Derivatives (notional)	200,000	290,000	1,050,000	1,540,000
Total	$ 19,379,641	$ 14,901,927	$ 13,330,368	$ 47,611,936

The following table illustrates the Bank's total exposure (including commitments) by geographic distribution as of December 31, 2022.

State**	Percentage
Texas	56%
Mississippi	6
Alabama	6
Louisiana	4
California	2
All other states	26
	100%

** The geographic distribution is based on the state in which the borrower is headquartered and may not be representative of their operations or business activities.

Refer to Note 4 of the accompanying financial statements for amounts of impaired loans with or with no related allowance, loans in nonaccrual status and greater than 90 days past due, loans past due greater than 90 days and still accruing, the allowance at the end of each reporting period, charge-offs during the period, and changes in components of our allowance for credit losses.

Counterparty Credit Risk and Credit Risk Mitigation

Credit Risk Mitigation Related to Derivatives

By using derivative instruments, the Bank exposes itself to credit and market risk. The Bank's derivative activities are monitored by its Asset-Liability Management Committee (ALCO) as part of the Bank's asset/liability and treasury functions. ALCO is responsible for approving hedging strategies that are developed through its analysis of data derived from financial simulation models and other internal and industry sources. The resulting hedging strategies are then incorporated into the Bank's overall interest rate risk-management strategies.

If a counterparty fails to fulfill its performance obligations under a derivative contract, the Bank's credit risk will equal the fair value gain of the derivative. Generally, when the fair value of a derivative contract is positive, this indicates that the counterparty owes the Bank, thus creating a repayment risk for the Bank. When the fair value of the derivative contract is negative, the Bank owes the counterparty and, therefore, assumes no repayment risk. To minimize the risk of credit losses, the Bank maintains collateral agreements to limit exposure to agreed-upon thresholds. The Bank deals with counterparties that have an investment grade or better credit rating from a major rating agency, and also monitors the credit standing of, and levels of exposure to, individual counterparties. When certain thresholds are met, the Bank's 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.

To minimize the risk of credit losses from derivatives, all interest rate swap derivative contracts are cleared through a Futures Commission Merchant. Cleared derivative contracts are required to be 100% collateralized and the Derivatives Clearing Organization (DCO) takes on the obligation of both sides of the transaction.

The Bank has exposure to interest rate cap derivatives that are supported by bilateral collateral agreements with counterparties requiring the posting of collateral in the event certain dollar thresholds of exposure of one party to the other are reached; thresholds may vary depending on the counterparty's credit rating from a major rating agency. The Bank also monitors the credit standing of, and levels of exposure to, individual counterparties. Interest rate caps derivatives are under master agreements that contain netting provisions. These provisions allow the Bank to require the net settlement of covered contracts with the same counterparty in the event of default by the counterparty on one or more contracts. The amount of collateral the Bank would have to provide if the Bank's own creditworthiness deteriorated would be dependent upon the terms of the contract with the counterparty, including agreed-upon thresholds to limit exposure, and changes in interest rates.

At December 31, 2022, the Bank had posted cash collateral of $42.7 million and received cash collateral of $62.5 million from counterparties for cleared derivative contracts. Refer to Note 17 of the accompanying financial statements for details on the notional, fair value, collateral held and credit ratings of the Bank's derivative contracts. The Bank did not hold any purchased credit derivatives for its own credit portfolio as of December 31, 2022.

The table below shows the notional value of derivatives, segregated by interest rate caps and pay-fixed swaps which are traded in over-the-counter markets as of December 31, 2022 and the fair value of these derivatives with excess variation margin for cleared activities.

	Notional Amount	Gross Positive Fair Value
Interest rate caps	$ 115,000	$ 878
Pay-fixed swaps	1,425,000	1,334
Total Derivatives	**$ 1,540,000**	**$ 2,212**

Credit Risk Mitigation Related to Investments

Credit risk in our investment portfolio is largely mitigated by investing primarily in securities issued or guaranteed by the U.S. government or one of its agencies. At December 31, 2022, 53.42% of our $6.65 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), Export-Import Bank of the United States and U.S. Treasury. The Bank's investment portfolio consisted of 37.26% of securities issued by government agencies that carry the implicit backing of the U.S. government, including MBS issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and Farmer Mac. Another 9.32% of our investment portfolio is made up of asset-backed investments, certificates of deposit and corporate debt which primarily represents the credit risk in the Bank's investment portfolio.

Credit risk in our investment portfolio also arises from the inability of guarantors and third-party providers of other credit enhancements, such as bond insurers or Farmer Mac, to meet their contractual obligations to us.

For each separately disclosed credit risk portfolio, see the following table for the total exposure that is covered by guarantees/credit derivatives, and the risk-weighted asset amount associated with that exposure. The Bank did not hold eligible financial collateral for its loan and investment portfolios at December 31, 2022.

(dollars in thousands) Government-Guaranteed Asset Type	90-Day Average	Risk Weighting	Risk-Weighted Amount
Investments	$ 5,054,736	0%	$ —
Loans	2,066	0%	—
Total	$ 5,056,802		$ —

Securitization

Securitizations are transactions in which:

- The credit risk of the underlying exposure is transferred to third parties, and has been separated into two or more tranches;
- The performance of the securitization depends upon the performance of the underlying exposures or reference assets; and
- All or substantially all of the underlying exposures or reference assets are financial exposures.

Securitizations include on- or off-balance sheet exposures (including credit enhancements) that arise from a securitization or resecuritization transaction, or an exposure that directly or indirectly references a securitization (e.g., credit derivative). A resecuritization is a securitization transaction in which one or more of the underlying exposures that have been securitized is itself a securitization. The Bank does not currently hold any credit-related resecuritization investments.

The Bank currently only participates in credit-related securitizations as investors through the purchase of highly rated asset-backed securities (ABS) as included in its investment portfolio. The Bank also holds securitization exposures through the purchase of U.S. government and agency guaranteed securities. The Bank has not transferred any exposures that it has originated or purchased from a third party in connection with a securitization of assets as of December 31, 2022, nor does it have any outstanding exposures that it intends to be securitized as of December 31, 2022. The Bank did not recognize any gain or loss on securitized assets for the year ended December 31, 2022.

We are subject to liquidity risk with respect to our purchased securitization exposures. In volatile market conditions, it could be difficult to sell such investments, if the need arises, and the discounts from face value could likely be significant. In addition, because of the inherent uncertainty of determining the fair value of such investments that do not have a readily available market value during volatile market conditions, 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. The Bank monitors its purchased ABS holdings on an ongoing basis, reviewing monthly credit performance metrics against outstanding credit enhancements, monitoring issuer and servicer performance, and tracking relevant ABS market conditions and credit spreads.

Below is an overview of our purchased securitization exposures held as of December 31, 2022, by exposure type and categorized by risk weighting band and risk-based capital approach. Refer to Note 3 of the accompanying financial statements:

Description of Securitization	Risk-Based Capital Approach	Exposure Amount (dollars in thousands)	Risk Weighted
Agency MBS:			
GNMA	Standardized Risk Weight	$ 3,070,832	0%
FNMA and FHLMC	Standardized Risk Weight	2,652,701	0%-20%
Total Agency MBS		$ 5,723,533	
Asset-backed securities:			
Small Business Administration	Standardized Risk Weight	$ 83,709	0%
Asset-backed securities	Gross-up	116,949	20%-100%
Total Asset-backed securities		$ 200,658	

Equities

The Bank is a limited partner in certain Rural Business Investment Companies (RBICs) for various relationship and strategic reasons. These RBICs facilitate equity and debt investments in agriculture-related businesses that create growth and job opportunities in rural America. There have been no sales or liquidations of these investments during the period. These investments are accounted for under the equity method as the Bank is considered to have significant influence. These investments are not publicly traded and the book value reflects fair value. The Bank had realized gains or losses recognized either on the balance sheet or through earnings.

(dollars in thousands)	Disclosed in Other Assets	Life-to-Date (Losses) Gains Recognized in Retained Earnings*
RBICs	$24,930	$(3,986)

*Retained earnings is included in common equity tier 1 and total capital ratios.

Interest Rate Risk

Asset/liability management is the Bank's process for directing and controlling the composition, level and flow of funds related to the Bank's and Texas District's interest-rate-sensitive assets and liabilities. The Bank is able to manage the balance sheet composition by using various debt issuance strategies and hedging transactions to match its asset cash flows. Management's objective is to generate adequate and stable net interest income in a changing interest rate environment.

The Bank uses a variety of techniques to manage its financial exposure to changes in market interest rates. These include monitoring the difference in the maturities or repricing cycles of interest-rate-sensitive assets and liabilities; simulating changes in net interest income under various interest rate scenarios; and monitoring the change in the market value of interest-rate-sensitive assets and liabilities under various interest rate scenarios. The Bank measures interest rate risk on a quarterly basis.

The interest rate risk inherent in a Texas District Association's loan portfolio is substantially mitigated through its funding relationship with the bank. The Bank manages the Texas District interest rate risk through its direct loan pricing and funding processes. Under the Farm Credit Act, an Association is obligated to borrow only from the Bank unless the Bank approves borrowing from other funding sources. An Association's indebtedness to the Bank, under a general financing agreement between the Bank and the Association, represents demand borrowings by the Association to fund the majority of its loan advances to Association members and is secured by the total assets of the Association.

The Bank's net interest income is determined by the difference between income earned on loans and investments and the interest expense paid on funding sources, typically Systemwide bonds and discount notes. The Bank's level of net interest income is affected by both changes in market interest rates and timing differences in the maturities or repricing cycles of interest-rate-sensitive assets and liabilities.

Depending upon the direction and magnitude of changes in market interest rates, the Bank's net interest income may be affected either positively or negatively by the mismatch in the maturity or the repricing cycle of interest-rate-sensitive assets and liabilities.

The Bank maintains a loan pricing philosophy that loan rates should be based on competitive market rates of interest. The Associations offer a wide variety of products, including SOFR- and prime-indexed variable-rate loans and loans with fixed-rate terms ranging from under one year to 30 years. The interest rates on these loans are directly related to the Bank's cost to issue debt in the capital markets and a credit spread added for borrower risk.

The Bank offers an array of loan programs to Associations that are designed to meet the needs of the Associations' borrowers. These loan programs have varying repayment terms, including fixed and level principal payments, and a choice of payment frequencies, such as monthly, quarterly, semiannual and annual payments. Additionally, the Bank offers a choice of prepayment options to meet customer needs.

Refer to the net interest income and market value of equity table in the Management's Discussion and Analysis on pages 24-25, which sets forth the Bank's projected sensitivity to interest rate movements as prescribed by policy as of December 31, 2022, based on the Bank's interest-earning assets and interest-bearing liabilities at December 31, 2022.

FARM CREDIT
BANK OF TEXAS

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