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16 December 2021

Update

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RATINGS

National Rural Utilities Coop. Finance Corp.

Domicile	Dulles, Virginia, United States
Long Term Rating	A2
Type	Senior Unsecured - Dom Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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National Rural Utilities Coop. Finance Corp.

Credit Update of Key Rating Factors

Summary

National Rural Utilities Cooperative Finance Corporation's (CFC; A2 stable) credit profile reflects the strength of its unique franchise position as a dominant low-cost, tax-exempt lender, primarily to the financially stable rural electric cooperative sector. CFC continues to benefit from a high quality loan portfolio owing to the strength of the electric cooperative sector, the focus on distribution cooperatives, and the strong collateral position for the majority of the loan portfolio. While CFC recorded some additional provisions for loan losses relating to two of its Texas-based cooperative borrowers following the winter storm Uri in February 2021, these amounts are small relative to its substantial loan portfolio. Also, through passage of Senate Bill 1580, Texas-based electric cooperatives have the option to arrange financing to meet their obligations related to the storm costs, including, where applicable, repayment of money borrowed from CFC, thereby minimizing CFC's exposure to further loan loss provisions relating to the storm, should that option be pursued. CFC continues to benefit from loan pricing flexibility, which helps it meet and often exceed targets for coverage ratios and by maintaining good liquidity and diverse debt funding sources to supplement its well-established ability to access the wholesale short-term and long-term debt capital markets. CFC's credit positive characteristics balance its high leverage, which is a persistent credit challenge as loan growth continues and despite strategies to improve net margins to enhance its retained equity capital. Additional negative credit overhangs for CFC include its single industry concentration risk and the fact that even as some of the larger generation and transmission cooperatives in its loan portfolio are retiring some coal-fired plants, many in the sector still rely extensively on coal fired generation to meet members' energy demands, which poses elevated carbon transition risk for those entities and is a negative credit overhang for CFC.

Credit Strengths

» Rural electric cooperatives (RECs) comprise the substantial majority of counterparties for CFC's loan and guarantee portfolio

» CFC meets and often exceeds its targeted coverage ratios, in part through benefits from loan pricing flexibility

» A history of above-average credit quality loan portfolio and limited credit losses

» Unique franchise provides strong competitive position

» Continued access to multiple funding sources fosters less reliance on capital markets

Credit Challenges

- Single industry concentration in the loan portfolio
- Persisting high leverage, which is particularly challenging to reduce during periods of strong loan growth

Rating Outlook

CFC's stable rating outlook reflects its longstanding strategic commitment to focus on loans primarily to RECs, which supports strong asset quality within its loan portfolio, especially as the telecom loan portfolio remains a de-minimus portion of the total loan portfolio. The stable outlook also considers CFC's objectives to gradually reduce leverage, while also maintaining a good liquidity profile and increased access to private sources of funding to offset the firm's reliance on wholesale funding. CFC's high leverage, single industry concentration and single obligor concentration are persisting rating constraints.

Factors that Could Lead to an Upgrade

- While relatively high leverage is persisting and single industry and single-obligor concentration prevails, the likelihood of a rating upgrade for CFC is limited.
- Prospects for a positive rating action exist beyond the next 12 months if the Moody's adjusted debt to adjusted capital funds metric improves to be well under 7.0x on a sustained basis, liquidity remains strong, and alternatives to wholesale capital market funding increase in number and depth, while CFC continues to maintain a relatively clean portfolio with no new material non-performing assets.
- Additionally, upward rating pressure would also develop if the CFC loan portfolio can continue to demonstrate an ability to produce stable financial results which exceed the 1.1x adjusted times interest earned ratio (TIER) target on a consistent basis, while also increasing its tangible common equity to tangible managed assets above 12% and its funds from operations (FFO) to total debt above 15% for a sustained period.

Factors that Could Lead to a Downgrade

- If one or more new material problem loans surfaced within CFC's portfolio;
- If CFC's strategy strays toward increasing its loans to non-core electric cooperative markets;
- If leverage materially increases because of less conservative shifts in debt capital raising efforts and capital rotation policies; this would be particularly so if tangible common equity to tangible managed assets declines to less than 4% and FFO to debt turns negative for a sustained period
- If CFC's access to private sources of long-term capital become constrained;
- If CFC fails to maintain an adequate liquidity profile, including ample access to multi-year bank credit facilities.

Key Indicators

Exhibit 1

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Loans ($billions) [1]	28.43	26.70	25.92	25.18	24.37	23.15	21.46	20.47	20.3	18.91
Adjusted Capital Funds ($billions) [1][2]	3.12	3.07	3.01	2.91	2.80	2.77	2.70	2.66	2.74	2.55
Adjusted TIER (x) [1][3]	1.23	1.17	1.19	1.17	1.16	1.22	1.13	1.21	1.29	1.1
Adjusted Debt / Adj. Capital Funds (NIC) x [1][2][4]	8.03	7.66	7.53	7.76	7.53	7.40	7.37	7.19	7.15	7.1
Loan Loss Reserve ($millions) [1][5]	86	53	18	19	37	33	34	56	54	143
Loan Loss Reserve / Loans (%) [1][5]	0.30	0.20	0.07	0.07	0.15	0.14	0.16	0.27	0.27	0.76

[1] Fiscal year ends May 31st
[2] Members' Equity is adjusted for derivative forward value and foreign currency adjustments
[3] Net margin adjusted to exclude derivative forward value and foreign currency adjustments. Cost of funds adjusted to include derivative cash settlements
[4] Members capital securities receive equity credit, as determined by Moody's
[5] Excludes loss reserves for guarantee portfolio of $1M, 1M, $1M, $1M, $1M, $1M, $2M, $2M, $6M, $6M, and $6M for 2021, 2020, 2019, 2018, 2017, 2016. 2015, 2014, 2013, and 2012
Source: Moody's Investors Service, CFC SEC filings

Corporate Profile

Headquartered in Dulles, Virginia, CFC is a member-owned cooperative association, non-bank financial institution exclusively serving rural electric and telecommunication utilities. CFC was organized in April 1969 by RECs to provide an economical alternative to federally subsidized funds from the Rural Utilities Service (RUS) of the U.S. Department of Agriculture.

Loans to telecommunication members are made through Rural Telephone Finance Cooperative (RTFC), a private cooperative association formed to provide financing for its rural telecommunications members and affiliates. Loans are also made through National Cooperative Services Corporation (NCSC), a member-owned cooperative association, which primarily provides specialized financing and services to entities owned, operated and controlled by RECs.

Detailed Credit Considerations

CFC consistently exceeds its 1.10x adjusted TIER target

CFC is a member-owned cooperative lender with a goal to set rates that provide its members with the lowest cost financing while also earning a margin consistent with defined financial targets to maintain sound credit quality. As part of its strategy, CFC prices its members' loans and guarantees to cover its funding costs, general and administrative expenses, the loan loss provision, and a modest margin to maintain an adjusted TIER of at least 1.10x.

CFC's adjusted TIER typically exceeds its minimum target and for the three months ended August 31, 2021 (Q-1 2022) was 1.27x compared to 1.28x at August 31, 2020 (Q-1 2021), in both instances maintaining a comfortable cushion above the target. At fiscal year ended (FYE) May 31, 2021, CFC's adjusted TIER was 1.23x compared to the 1.17x adjusted TIER at FYE 2020 and the average of 1.20x for the past three fiscal years. Some of the factors influencing the TIER in FYE 2021 and Q-1 2022 included increases in adjusted net income owing to increases in adjusted net interest income, the absence of a non-cash impairment charge recorded in FYE 2020 related to an abandoned software project, and changes to the provisions for credit losses.

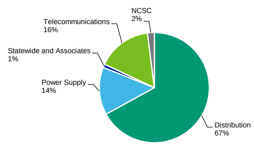
The additional provisions for credit losses were attributable to a significant adverse financial impact on two of CFC's Texas-based electric power supply borrowers, Brazos Electric Power Cooperative, Inc. (Brazos), which filed for bankruptcy in March 2021, and Rayburn Country Electric Cooperative, Inc. (Rayburn), due to their exposure to elevated wholesale electric power costs during the mid-February 2021 winter storm Uri.

CFC's consolidated loan portfolio is dominated by Loans to low-risk RECs

Exhibit 2

Total Loans Portfolio

As of May 31, 2005

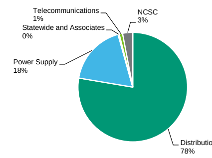


Source: Moody's Investors Service; CFC SEC Filings

Exhibit 3

Total Loans Portfolio

As of August 31, 2021



Source: Moody's Investors Service; CFC SEC Filings

CFC's principal lending market is the REC distribution segment, which we consider to be among the least volatile and most resilient across the electric power sector. The REC distribution segment conducts relatively low risk business activities, sells electricity to mostly residential customers, tends to have generally steady capital requirements and employ conservative capital structures, and the majority benefit from full flexibility in setting their customers' rates. Taken together, Exhibits 2 and 3 above show a comparison of CFC's loan portfolio as of May 31, 2005 and August 31, 2021, respectively. Exhibit 3 reflects that as of August 31, 2021, of the approximate 99% of CFC's loan portfolio with RECs and entities owned, operated and controlled by RECs, about 78% or $22.411 billion of loans were with rural electric distribution cooperatives, a segment that we consider to have strong investment grade credit qualities. The majority of the remaining loans are to generation and transmission (G&T) cooperatives. Of the G&T cooperatives currently rated by Moody's, most of whom are CFC's borrowers, all currently have investment grade credit qualities, with the vast majority having an A or better rating category credit quality.

During FY 2021, CFC experienced year over year loan growth of about $1.725 billion, primarily comprised of an increase of $1.258 billion of loans to the lowest risk distribution cooperatives and an increase of $423 million to power supply cooperatives. The balance of loan growth in FYE 2021 was comprised of RTFC loans and NCSC loans of $35 million and $9 million, respectively. The majority of new loans to distribution and G&T cooperatives were used to make additional capital investments and to refinance loans made by other lenders. The loan volume was also influenced by the addition of 3 more “100% CFC borrowers” in FY 2021, bringing CFC’s total number of such borrowers to 248 at May 31, 2021.

CFC remains committed to its philosophy of minimizing its lending to the riskier telecommunications sector, a credit positive initiative which began more than 17 years ago. The total outstanding telecommunications loans have declined by well over $4.0 billion since FY 2003 with about $431.4 million outstanding at August 31, 2021, representing 1% of CFC's total outstanding loan portfolio.

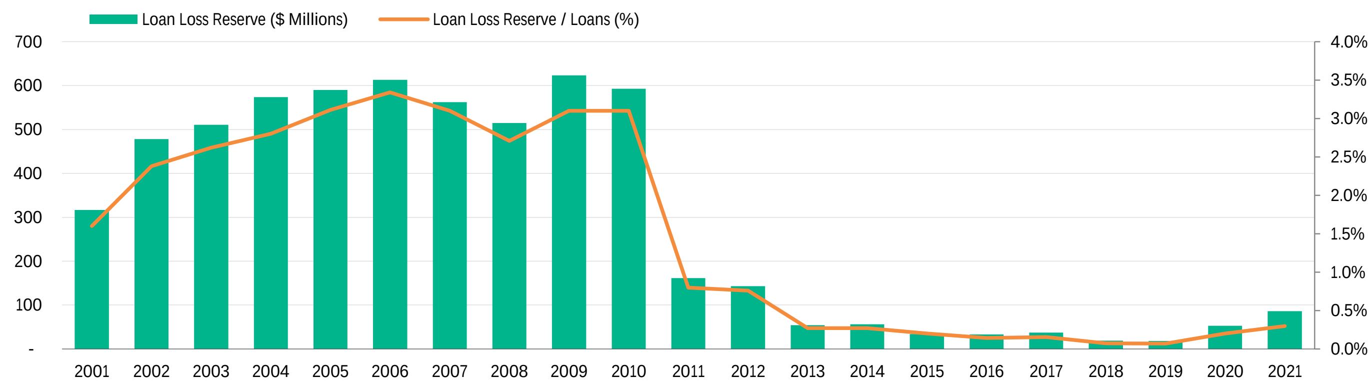
Flexible loan pricing is a credit positive for CFC

CFC's credit quality benefits from its ability to reset margins sufficiently to maintain its targeted adjusted TIER of 1.10x. CFC manages this policy by having terms and conditions in nearly all of its customers' loan documents that allow for a variety of re-pricing mechanisms. CFC again exhibited a high loan retention rate in FY 2021 when it retained 99% of about $397 million of loans that repriced during that fiscal year. The loan retention rate has averaged 96% for the past three fiscal years. Over the next eight quarters from August 31, 2021, approximately $669 million of CFC's long-term loan portfolio will re-price based upon the terms and conditions set forth in the specific loan documents. CFC's leading position in the marketplace coupled with the flexibility of its electric cooperative borrowers to set rates as necessary to cover their expenses and maintain required covenants helps to effectively carry out this strategy.

Despite additional exposures following winter storm Uri, the high credit quality of CFC's loan portfolio remains evident through low loan loss reserves

Exhibit 4

Loan Loss Reserve 2001-2021



Source: Moody's Investors Service; CFC SEC Filings

Since the cooperative's inception in 1969, there have been 32 defaults and about $513 million of cumulative net charge-offs on its electric and telecom loan portfolio. Seventeen defaults occurred in the electric portfolio, including the Brazos bankruptcy in March 2021, and fifteen related to the telecom portfolio. Prior to Brazos' bankruptcy filing in March 2021, CFC had not experienced any defaults or charge-offs in its electric utility and telecommunications loan portfolios since fiscal years 2013 and 2017, respectively. The overall low loan write-off history demonstrates the historically high credit quality of CFC's loan portfolio, the strength of the collateral typically pledged to CFC, the essentiality of the electric distribution business, and the ability of CFC to take a long-term view concerning debt restructurings due to its unique relationship with its customer base and the fact that CFC does not have profit-maximization goals.

At the end of Q-1 2022 and at FYE 2021, CFC reported $9.846 million and $9.971 million of troubled debt restructuring (TDR) loans, respectively, comprising just 0.03% and 0.04% of its total loans outstanding for each period, respectively. CFC defines a TDR loan as one that needs to be restructured from the terms of the original loan agreement. CFC did not have any TDR loans classified as nonperforming as of the end of Q-1 2022 or FYE 2021.

CFC's nonperforming and criticized loans increased in the third quarter of FY 2021 due to the previously noted significant adverse financial impact that the elevated wholesale power costs during the winter storm Uri had on Brazos and Rayburn. At the end of Q-1 2022 and FYE 2021, CFC's nonperforming loans including Brazos, totaled $232 million and $237 million, respectively, which represented 0.80% and 0.84% of total loans outstanding as of each respective date. CFC's criticized loans totaled $887 million and $886 million as of the end of Q-1 2022 and FYE 2021, respectively, and represented approximately 3% of total loans outstanding as of each respective date. We view CFC's risk of loss from conditions during winter storm Uri to be primarily limited to Brazos and Rayburn. At the end of Q-1 2022, loans outstanding to Brazos and Rayburn of $86 million and $375 million, respectively, together totaled $461 million, of which $184 million was secured and $277 million was unsecured. These amounts are small, representing less than 2% of CFC's $28.9 billion loan portfolio at the end of Q-1 2022. We understand that both Brazos and Rayburn qualify for securitization financing programs under recently enacted legislation in Texas. CFC reports that it is currently uncertain whether Brazos will utilize the provisions available under this legislation, while in filings made with the Public Utility Commission of Texas, Rayburn has stated that it intends to utilize the securitization legislation to finance its elevated power costs and has taken steps to begin the process to do so. However, there are many factors that may impact the outcome of a securitization transaction and the ultimate collectibility of loans outstanding to Brazos and Rayburn remains uncertain. The bankruptcy filing by Brazos prevents it from making scheduled loan payments without approval of the bankruptcy court. In that regard, CFC has not received scheduled loan payments from Brazos and its loans outstanding are classified as delinquent. Aside from Brazos, all of CFC's borrowers have been making scheduled payments in accordance with the terms of their loan agreements and CFC had no other delinquent loans as of either the end of Q-1 2022 or FYE 2021.

As depicted in Exhibit 4 above, at the end of Q-1 2022, CFC's allowance for credit losses relating to its loan portfolio increased to about $89.5 million, compared to $85.5 million at FYE 2021 and $57.4 million at Q-1 2021. The increase in the allowance amounts since August 31, 2020 primarily relate to the increased risk associated with loans outstanding to Rayburn and Brazos, but also incorporate the effects of the June 1, 2020 adoption of an expected loss methodology accounting standard referred to as the current expected credit loss ("CECL") model to replace CFC's incurred loss methodology previously used for estimating its allowance for credit losses. As part of adopting the CECL model, CFC recorded an increase in its allowance for credit losses of about $4 million and a corresponding decrease in its retained earnings through a cumulative-effect adjustment.

Even with the increase in allowance for credit losses, the amounts for FYE 2021 and the end of Q1 2022 represent a modest 0.31% and 0.30% of CFC's total loans outstanding as of the respective ending period dates.

Exhibit 5

Loan Security as of August 31, 2021

Loan Security ($ Amounts in Billions)	Secured	Secured as % of Segment	Unsecured	Unsecured as % of Segment
CFC	25.78	93%	1.96	7%
NCSC	0.68	96%	0.03	4%
RTFC	0.41	96%	0.02	4%
Total Loans	26.87	93%	2.00	7%

Source: Moody's Investors Service; CFC SEC Filings

As depicted in Exhibit 5 above, at the end of Q-1 2022, about 93% of CFC's total loan portfolio was secured. Loans are typically secured on parity with other secured lenders (primarily RUS), if any, by a mortgage lien on the borrower's total assets and a pledge of future revenues with certain exceptions typical for utility mortgages. This strong security position has helped to provide high recovery values for CFC in past problem loan restructurings and often enables CFC to receive the payment of interest and principal while a borrower is operating in bankruptcy. The majority of CFC's unsecured loans reflect primarily short-term lines of credit with RECs.

An additional feature in CFC's portfolio is the fact that the vast majority of CFC loans amortize principal payments over time. To that end, as of August 31, 2021, CFC had approximately $1.653 billion of principal on long-term loans that is expected to amortize or be repaid during the next 12 months. In addition to providing CFC with a predictable source of annual cash flow, the loan amortization feature supports the overall credit quality of the CFC loan portfolio as it reduces individual cooperative's annual refinancing risk while gradually reducing leverage across the electric cooperative system.

Strong competitive position benefits from CFC's unique franchise characteristics

CFC enjoys strong support from its member cooperatives as it provides those entities with attractive and customized financing alternatives. The value of the CFC franchise is evident through the broad participation by the RECs in CFC's offering of member capital securities as well as the steadily increasing members' investment amount that helps to fund CFC's operations. CFC's unique franchise position is magnified by the financial institution's status as a tax-exempt cooperative association with a primary operating objective to provide low cost funding to its members. As such, operating margin and earnings profitability metrics, which are important factors in assessing the credit quality of for-profit financial institutions, have limited value when assessing CFC's credit risk profile. That said, our assessment of CFC's credit profile incorporates a view that CFC will continue to set margins at levels that produce positive operating margins and cushion above minimum required internal targets enabling them to comfortably exceed any financial covenants in its debt documents.

Risk management and single obligor risk remain key areas of focus

CFC has strong risk management capabilities and maintains a balance between the credit needs of its members and the requirement to insure sound credit quality of the loan and guarantee portfolio. The cooperative regularly maintains an internal risk rating system and sets exposure limits for each borrower, while also retaining an independent bank consulting firm to provide an annual third party assessment of the functioning of the risk rating system.

Additionally, CFC has increased its ability to syndicate new and existing loan transactions and has developed expertise in selling portfolios of loans to Federal Agriculture Mortgage Corporation, also known as Farmer Mac, a government sponsored enterprise.

With respect to loan sales, at August 31, 2021, CFC had sold 902 individual loans ($1.937 billion in aggregate) to Farmer Mac and was servicing loans aggregating approximately $1.031 billion.

Furthermore, as part of CFC's strategy to manage its credit risk exposure, the cooperative executed a long-term standby purchase commitment agreement with Farmer Mac effective August 31, 2015, as amended on May 31, 2016. This agreement allows CFC to designate certain loans to be covered under the commitment, subject to approval by Farmer Mac, and if any such designated loan subsequently goes into material default for at least 90 days, upon request by CFC, Farmer Mac must purchase such loan at par value. CFC designated, and Farmer Mac approved loans that had an aggregate outstanding principal balance of $493 million as of August 31, 2021 compared to $512 million at May 31, 2020. No loans had been put to Farmer Mac for purchase, pursuant to this agreement, as of August 31, 2021.

While single obligor risk is a chronic characteristic of this issuer, exposure to the riskier telecommunications sector has declined considerably since 2004. For example, during the past 10 fiscal years, none of the top ten single obligors were telecommunications borrowers and of the top twenty borrowers for the past nine fiscal years, none were telecom firms. In stark contrast, historical calculations at FYE 2004 placed five of the top ten and six of the top 20 CFC loan exposures with telecommunications borrowers.

Single industry concentration prevails

At August 31, 2021, about 99% of CFC's loans and guarantees were made to RECs and their affiliates. As such, trends in the rural electric utility's aggregate credit quality will directly impact CFC. In that regard, winter storm Uri impacted Texas electric cooperatives, where CFC has 68 borrowers with loans outstanding as of August 31, 2021 accounting for the largest number of borrowers with loans outstanding in any one state, as well as the largest concentration of loan exposure in any one state. Loans outstanding to Texas-based electric utility organizations totaled $5,102 million as of August 31, 2021 accounting for about 18% of total loans outstanding.

Over the next several years, RECs will face additional challenges, all of which have the potential to increase the cost of providing electric service to rural areas. Even as an increasing number of generation cooperatives are pursuing supply diversification strategies, many of the medium and larger-sized generation cooperatives still rely on coal as a primary fuel source for generation. For those cooperatives still relying on coal-fired resources, the potential for substantial incremental increases in capital requirements to address any elevated carbon transition risk represents a credit negative overhang. That said, rate autonomy available to power supply cooperatives provides flexibility for any incremental cost to be passed along to the distribution cooperatives and ultimately to the end-use customer. The RECs' ability to seamlessly pass along higher operating and capital costs to their customer base is an important factor in maintaining credit quality across the RECs and at CFC.

CFC's strategies to preserve and increase access to diverse sources of debt capital provides for funding flexibility

As with many finance companies, CFC is dependent upon access to the long-term and short-term capital markets for refunding debt maturities and funding its business. In addition to annual operating cash flow, member loan repayments approximate $1.9 billion for the next twelve months and are likely to be in a range of $1.4 -$2.5 billion each year for the next few years.

At August 31, 2021, CFC's members provided about $5,117 million of funding, which represented about 18% of total debt outstanding. Of the $5,117 million, about $3,284 million represented short-term debt funding through $1,136 million in members' commercial paper, $449 million in members' investments in the daily liquidity fund and $1,699 million in the members' select notes program. The remaining balance of members' funding at August 31, 2021 was provided by $579 million of members' MTNs and $1,254 million of members' subordinated certificates. We consider the members' investments to be a “sticky” form of core funding. CFC uses the dealer commercial paper market to supplement any short-term funding requirements.

Since FY 2006, CFC has been supplementing its longer-term wholesale funding sources through two separate and successful private programs. Under the Guaranteed Underwriter Program (GUP), CFC has been able to secure almost $8.173 billion of twenty year funding from the Federal Financing Bank (FFB) of the US Treasury, of which about $7.198 billion was accessed at August 31, 2021. Access to the GUP provides CFC with a reliable, low-cost source of long-dated financing as current GUP debt maturities occur in 2025 through 2041. As of August 31, 2021, CFC had up to $975 million available under the GUP. On November 4, 2021, CFC closed on an additional $550 million of GUP funding, bringing the total availability under the GUP to $1.525 billion.

In addition, CFC has a relationship with Farmer Mac under a revolving note purchase agreement dated March 24, 2011, as amended, under which, subject to market conditions, Farmer Mac provides about $5.5 billion in potential funding to CFC. The note purchase facility is available through June 30, 2026, with successive automatic one-year renewals without notice by either party. Beginning June 30, 2025, the revolving note purchase agreement is subject to termination of the draw period by Farmer Mac upon 425 days' prior written notice. At August 31, 2021, CFC had availability of up to about $2.140 billion of this facility.

Notwithstanding CFC's relationship with its members, Farmer Mac, and its access to FFB funding under the GUP, CFC still remains dependent upon wholesale short-term and long-term funding. CFC's primary sources of long-term capital market funding include secured collateral trust bonds (CTBs), unsecured medium term notes (MTNs), and subordinated deferrable debt.

For more information on capital market access, see liquidity section below.

CFC's debt level likely to remain elevated in the near term, but management's commitment to reducing leverage remains intact

Due to the nature of its ownership structure, CFC does not have common stock in its capital structure. Instead, CFC does have members' equity in its capital structure, which has grown in lock step with loan growth by over $1 billion since 2011 to $1.833 billion at Q-1 2022 from $790 million at FYE 2011. Additionally, CFC has supported its loan growth in its capital structure through deeply subordinated capital term certificates, which have equity like characteristics and are offered only to its members, members' certificates, which are also owned by its members, and public offered subordinated deferred debt. At Q1-2022, these forms of equity aggregated $2.240 billion composed of $1.015 billion of deeply subordinated capital term certificates, $239 million of members' certificates, and $986 million of subordinated deferred debt. Moody's assigns 50% equity credit to the members' certificates and 25% equity to the subordinated deferred debt in calculating its CFC's leverage ratio.

CFC's leverage ratio as represented by adjusted debt to adjusted capital funds (according to Moody's calculations that, among other items, adjusts for the effects of mark-to-market changes on CFC's derivatives which at times can be significant) averaged 7.70x during fiscal years 2017-2021.

Although CFC largely funds incremental loan volume with debt, it remains committed to reducing leverage over time. That said, after largely holding leverage in check during fiscal years (FY) 2011-2014, CFC's leverage ratio according to Moody's calculations has shown a modest increase in most years since then and stood at 8.28x at the end of Q-1 2022. The common thread in CFC's leverage during the past five fiscal years has been the need to fund its loan growth and the effects of the retirement of patronage capital. At various points in time during this period other factors have affected CFC's leverage, including an impairment taken from the CAH asset disposition, declines in members' subordinated certificates outstanding, write-offs and increases in the loan loss allowance, partially offset by the benefits of partial equity treatment afforded to periodic additional to subordinated deferrable interest debentures issued and an increase in total members' equity.

While CFC experienced a creeping leverage trend in most years since 2014, the latest leverage ratio is not materially different from the 7.93x level exhibited more than 10 years ago at FYE 2008. Among the more significant contributing factors during this long-term period were: members investing in member capital securities, the increase in excess margin set aside to permanent member capital reserve, the change in CFC's equity retention plan, the additional equity it transferred after revising its loan loss allowance, and the benefits of partial equity treatment afforded to additional subordinated deferrable interest debentures issued.

Because CFC is expecting net loan growth of close to $600 million during the next 12 months, its leverage is likely to remain elevated in the near term, but over time management remains committed to its longstanding strategy that focuses on gradually reducing its leverage.

ESG considerations

Environmental

As a not-for-profit, non-bank cooperative financial institution, we view environmental risk as neutral to CFC's credit quality. That said, while CFC does not face any material direct environmental risks, it does lend extensively to RECs. The US electric generation & transmission cooperative sector continues to face increasingly stringent environmental mandates which require compliance with various laws and regulations. Compliance with these mandates can be costly and violations could subject the cooperative to substantial liabilities, as well as damage its reputation. Many of CFC's larger power supply loan relationships are with entities that have invested significantly in carbon-emitting generation assets. Even as an increasing number of generation cooperatives are pursuing supply diversification strategies, many of the medium and larger-sized generation cooperatives still rely on coal as a primary fuel source for generation. For those cooperatives still relying on coal-fired resources, the potential for substantial incremental increases in capital requirements to address any elevated carbon transition risk represents a credit negative overhang.

CFC and the members it serves are engaged in sustaining the environment across multiple fronts, for example, from the LEED Gold-certified building and 42-acre ecofriendly campus that serves as CFC's headquarters to the many renewable energy projects CFC has helped fund for the electric cooperative network.

In consideration of environmental stewardship, during October 2020 CFC issued $400 million of 1.35% collateral trust sustainability bonds, due March 2031. This was the first time that CFC issued such bonds, the proceeds from which will be used to make loans to various eligible broadband and renewable energy projects, with a particular focus on expanding essential services for less-served communities. CFC business units are working with the CFC treasury team to identify and evaluate projects for eligibility.

Social

We regard the coronavirus outbreak as a social risk under our ESG framework, given the substantial implications for public health and safety. To this point, we do not see any material immediate credit risks for CFC owing to the coronavirus pandemic. During March through June 2020, CFC's emergency business resumption plan resulted in approximately 95% of its employees working remotely. Starting in mid-June 2020, CFC implemented a return to work policy that included staggered staff rotation schedules and a variety of health and safety measures to maintain the well-being of the employees. Since then a substantial portion of staff has returned on a more regular basis, while continuing to follow health and safety protocols. Most of CFC's electric cooperative borrowers derive a larger share of revenues from residential customers than commercial and industrial customers, which has helped mitigate risk of decline in load demand as residential loads have generally increased. During the pandemic, CFC has been working with its members not only as a lender, but also by offering a full range of products, services, tools and training to help cooperatives continue to deliver uninterrupted service. CFC has not reported any delinquencies in scheduled loan payments, requests from borrowers for payment deferrals or covenant relief as a direct result of the pandemic, which bodes well for maintaining its asset quality and financial metrics as the coronavirus pandemic persists.

Governance

CFC's governance is a credit positive characteristic. CFC maintains strong governance through its experienced executive management team who are also guided by a 23-member board of directors that represents 10 geographically defined districts, the electric cooperatives' national trade association and an at-large director. The board sets overall policy, establishes programs and develops strategies for CFC. Maintaining strong credit quality is emphasized at the board level by linking employee compensation to the maintenance of certain ratings, a positive credit consideration. Each of the board's directors is elected for a three-year term and can serve two consecutive terms. After 25 years as CEO, Sheldon Petersen retired during the first half of 2021 and there has been a smooth transition as CFC filled the CEO position by appointing its former CFO, Andrew Don to the CEO role and promoted another long-tenured Vice President, Ling Wang, to fill the CFO role. Other senior level positions have undergone some smooth transition as well, mostly due to retirements. CFC continues to maintain collaborative relationships with all of its key constituents and adheres to transparent financial reporting consistent with its status as a registered entity governed by the Securities and Exchange Commission.

Liquidity Analysis

CFC has very good liquidity to support its commercial paper program and its variable rate tax-exempt demand bonds. While CFC has alternative funding sources from its members and from private sources, it still remains dependent on the capital markets as a funding source. In addition to annual operating cash flow, member loan amortization payments are expected to approximate $1.9 billion for the next twelve months and are expected to be in a range of $1.4 - $2.5 billion annually for the next few years.

CFC is an active capital market participant and FY 2021 funding was sourced across many of the components of its capital structure. The net effect of various transactions in FY 2021 was about a $1.4 billion increase in CFC's total debt outstanding. The increase was largely attributable to net increases in dealer commercial paper, dealer MTNs and securities sold under repurchase agreements aggregating about $1.96 billion, which were offset by debt repayment aggregating about $535 million. During Q-1 for FY 2022, CFC's total debt outstanding increased by $351 million, to $27.78 billion as of August 31, 2021, from May 31, 2021.

As of August 31, 2021, CFC reported access to substantial private sources of capital, including $975 million under the GUP ($100 million available for advance through July 15, 2023, $500 million available for advance through July 15, 2024 and $375 million available for advance through July 15, 2025) and $2,140 million under the Farmer Mac facility, which contributes to the above average liquidity profile. Also, on November 4, 2021, CFC closed on an additional $550 million of GUP funding, bringing the total availability under the GUP to $1,525 million.

At August 31, 2021, CFC had a dealer commercial paper balance of approximately $1.0 billion. CFC has maintained a cushion for the past several years compared to its stated intent to manage its short-term wholesale funding risk by maintaining dealer commercial paper below its targeted maximum threshold of $1,250 million for the foreseeable future. CFC has adhered to this broad strategy for several years and we expect that CFC's continued use of dealer commercial paper as a funding source will remain in line with or below the cooperative's aforementioned threshold.

CFC manages its various committed bank facilities which we consider to be its principal form of external liquidity support and these arrangements supplement $302.6 million of cash and cash equivalents and $569.6 million of liquid, short- to intermediate-term investment grade securities classified as trading securities as of August 31, 2021. On June 7, 2021, CFC amended its three-year and five-year committed bank revolving line of credit agreements to extend the maturity dates and to terminate certain bank commitments totaling $70 million under the three-year agreement and $55 million under the five-year agreement. As a result of this process, CFC has two committed credit facilities aggregating $2,600 million, of which $2,596.9 million is available due to letter of credit issuances. Specifically, the $1,245 million three-year facility now has a November 28, 2024 expiration date and the $1,355 million five-year facility has a November 28, 2025 expiration date. With these facilities in place, the total amount of commercial paper that can be issued by CFC is capped at $2,600 million. These credit facilities do not contain a MAC clause but have financial covenants which are set at levels that provide substantial cushion. The agreements require an adjusted TIER average of 1.025x for the last six quarters, a minimum adjusted TIER for the most recent fiscal year of 1.05x, and a maximum senior debt to equity ratio to not be more than 10.0x, in all cases as defined in the agreements. At August 31, 2021, CFC was in compliance with these covenants.

At August 31, 2021, CFC was the guarantor and liquidity provider for $144.3 million of tax-exempt bonds issued for its member cooperatives. During FYE May 31, 2021 and the first quarter of fiscal year 2022, no tax-exempt bonds were put to CFC to purchase pursuant to its obligation as liquidity provider.

Prospectively, for the one year period from October 2021 through September 2022, CFC reported about $3.949 billion of notes and bonds maturing, of which about $855 million are comprised of CTBs, $431 million are comprised of Member MTNs, $258 million is due under the GUP, and $1,409 million is due under the Farmer Mac program, leaving about $147 million of InterNotes, and $850 million of maturing Dealer MTNs. The larger components of the reported debt maturities for this period included $668 million of Farmer Mac notes, which were repaid with proceeds from a new 10-year $250 million advance with Farmer Mac and a portion of proceeds from CFC's $750 million of MTN issuances in October 2021. Also, $400 million of CTBs due in February 2022 were repaid on November 15, 2021. Other large components of upcoming debt maturities include $500 million of Dealer MTNs due in January 2022, $450 million of CTBs due in April 2022 and $350 million of Dealer MTNs due in September 2022. Although collectively sizable, these amounts are well within CFC's ability to manage given its access to substantial private capital funding sources, a large investor following and demonstrated ability to access several components of the capital markets.

Rating Methodology

The methodology for these ratings is Finance Companies Methodology published on November 25, 2019. Depicted on the next page is the scorecard indicated outcome for CFC. The A2 scorecard indicated outcome is in-line with CFC's senior unsecured rating. Please see the Credit Policy page on www.moodys.com for a copy of the methodology.

Exhibit 6

Finance Companies Methodology

Financial Profile	Factor Weights	Historic Ratio	Initial Score	Assigned Score	Key driver #1	Key driver #2
Profitability						
Net Income / Average Managed Assets (%)	10%	-	-	**Baa1**	Pro-forma adjustments	
Capital Adequacy and Leverage						
Tangible Common Equity / Tangible Managed Assets (%)	25%	7.43%	B1	**Baa1**	Other adjustments	
Asset Quality						
Problem Loans / Gross Loans (%)	10%	0.84%	Baa1	**Aaa**	Expected trend	Portfolio
Net Charge-Offs / Average Gross Loans (%)	10%	0.00%	Aaa	**Aaa**	Expected trend	
Weighted Average Asset Risk Score			-	**Aaa**		
Cash Flow and Liquidity						
Debt Maturities Coverage (%)	10%	115.95%	Ba1	**Baa1**	Stress tests	Other
FFO / Total Debt (%)	15%	0.91%	Caa3	**Ba1**	Pro-forma adjustments	
Secured Debt / Gross Tangible Assets (%)	20%	55.99%	B3	**B2**	Expected trend	
Weighted Average Cash Flow and Liquidity Score			B3	Ba2		
Financial Profile Score	**100%**		**Ba3**	**Baa1**		
Operating Environment						
Home Country						
	Factor Weights	Sub-factor Score	Score			
Macro Level Indicator	0%		Aa1			
Economic Strength	25%	aaa				
Institutions and Governance Strength	50%	aa2				
Susceptibility to Event Risk	25%	a				
Industry Risk	100%		A			
Home Country Operating Environment Score			A2			
	Factor Weights			Score	Comment	
Operating Environment Score	**0%**			**A2**		
ADJUSTED FINANCIAL PROFILE				Score		
Adjusted Financial Profile Score				Baa1		
Financial Profile Weight	100%					
Operating Environment Weight	0%					
Business Profile and Financial Policy				Adjustment	Comment	
Business Diversification, Concentration and Franchise Positioning				1		
Opacity and Complexity				0		
Corporate Behavior / Risk Management				1		
Liquidity Management				0		
Total Business Profile and Financial Policy Adjustments				**A2**		
					Comment	
Sovereign or parent constraint				**Aaa**		
Standalone Assessment Scorecard-indicated Range				a1 - a3		
Assigned Standalone Assessment				**a2**		

Source: Moody's Investors Service

Ratings

Exhibit 7

Category	Moody's Rating
NATIONAL RURAL UTILITIES COOP. FINANCE CORP.	
Outlook	Stable
Senior Secured	A1
Senior Unsecured	A2
Subordinate	A3
Commercial Paper	P-1

Source: Moody's Investors Service

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