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CREDIT OPINION
20 November 2020

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 its unique franchise position as it serves as a dominant, low-cost, tax-exempt lender to the financially stable rural electric cooperative sector which is demonstrating resilience to the coronavirus pandemic enabling CFC to maintain a high quality loan portfolio. CFC's credit quality benefits from its reliance on loan pricing flexibility to meet and often exceed targets for coverage ratios and by maintaining good liquidity and diverse loan funding sources to supplement its well-established ability to access the wholesale short-term and long-term debt capital markets. These credit positive characteristics balance its high leverage, which continues to be its most pressing credit challenge even though CFC continues to improve net margins to enhance its retained equity capital. Additionally, CFC's credit profile considers 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

» Loan and guarantee portfolio dominated by rural electric cooperatives (RECs)

» Loan pricing flexibility enables CFC to meet and often exceed targeted coverage ratios

» Consistently above-average credit quality loan portfolio with only one non-performing loan at August 31, 2020

» Unique franchise provides strong competitive position

» Multiple funding sources allow for less reliance on capital markets

Credit Challenges

» Single industry concentration

» High leverage which is challenging to reduce particularly when loan growth is strong

Rating Outlook

CFC's stable rating outlook reflects its unwavering focus on loans primarily to RECs, which supports a long history of strong asset quality within the loan portfolio, particularly 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

- Several factors limit CFC's prospects for a rating upgrade within the next 12 months, including the fact that relatively high leverage persists, while its single industry and single-obligor concentration also prevail.
- 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 large non-performing assets; this is particularly the case 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.

Factors that Could Lead to a Downgrade

- If one or more new large problem loans surfaced within CFC's portfolio;
- If CFC's strategy shifts to focus on growing its lending to non-core electric cooperative markets;
- If ongoing debt capital raising efforts and capital rotation policies materially increase CFC's leverage;
- 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

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Loans ($billions) [1]	26.70	25.92	25.18	24.37	23.15	21.46	20.47	20.3	18.91	19.33
Adjusted Capital Funds ($billions) [1][2]	3.07	3.01	2.91	2.80	2.77	2.70	2.66	2.74	2.55	2.6
Adjusted TIER (x) [1][3]	1.17	1.19	1.17	1.16	1.22	1.13	1.21	1.29	1.1	1.21
Adjusted Debt / Adj. Capital Funds (NIC) x [1][2][4]	7.66	7.53	7.76	7.53	7.40	7.37	7.19	7.15	7.1	7.13
Loan Loss Reserve ($millions) [1][5]	53	18	19	37	33	34	56	54	143	161
Loan Loss Reserve / Loans (%) [1][5]	0.20	0.07	0.07	0.15	0.14	0.16	0.27	0.27	0.76	0.83

[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, $2M, $2M, $6M, $6M, and $6M for 2020, 2019, 2018, 2017, 2016. 2015, 2014, 2013, 2012, and 2011.
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's history of consistently exceeding its 1.10x adjusted TIER target is credit positive

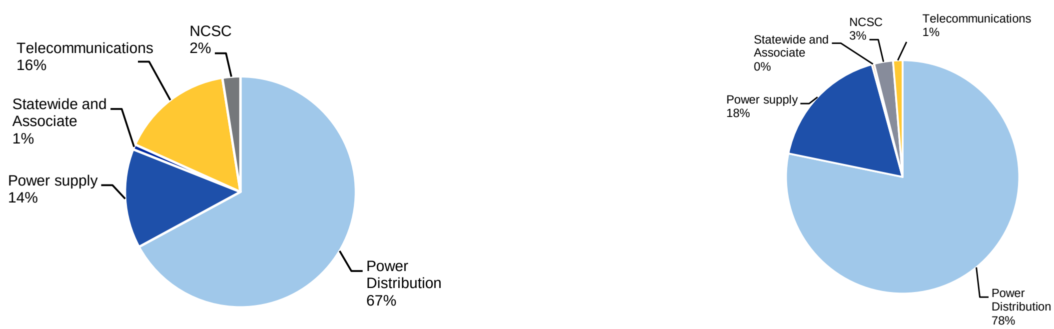
As a member-owned cooperative lender, CFC's goal is to set rates that provide its members with the lowest cost financing while also earning a margin consistent with defined financial targets to support sound credit quality. Members' loans and guarantees are priced to cover CFC's funding costs, general 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, 2020 was 1.28x compared to 1.27x at August 31, 2019, in both instances comfortably in excess of the target. At fiscal year ended (FYE) May 31, 2020, CFC's adjusted TIER was 1.17x compared to the 1.19x adjusted TIER at FYE 2019 and the average of 1.18x for the past three fiscal years. As expected, CFC's net interest income and related margins began to benefit on a sustainable basis beginning in the calendar year 2019, largely because of the replacement of a sizeable 10.375% collateral trust bond that matured in November 2018 with debt at substantially lower rates.

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

Exhibit 2

Total Loans Portfolio

As of May 31, 2005 (left), and August 31, 2020 (right)



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, tends to have generally steady capital requirements and employ conservative capital structures, and the majority benefit from full flexibility in setting their customers' rates. Exhibit two above shows that as of August 31, 2020, of the approximate 99% of CFC's loan portfolio with RECs and entities owned, operated and controlled by RECs, about 78% or $21.012 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, the vast majority have investment grade credit qualities.

During FY 2020, CFC experienced $785 million in net new loan demand, primarily comprised of an increase of $615 million from the lowest risk distribution cooperatives, and an increase of $153 million, $22 million and $40 million from G&T cooperatives, Statewide and associate entities, and RTFC loans, respectively. The increases were partially offset by a $45 million decrease in NCSC loans. Collectively, the incremental new loan activity during 2020 was a credit positive from a portfolio perspective. The majority of new loans to distribution and G&T cooperatives were used to make additional capital investments and to refinance loans from other lenders. The loan volume was also influenced by the addition of 7 more “100% borrowers” in FY 2020, bringing CFC’s total number of such borrowers to 245 at May 31, 2020. Based on the latest SEC filings, CFC expects further modest increases to its outstanding loan balances during FY 2021, which has been the case for a number of years and two more "100%" borrowers were added during Q-1 of FY 2021, bringing the total to 247 as of August 31, 2020.

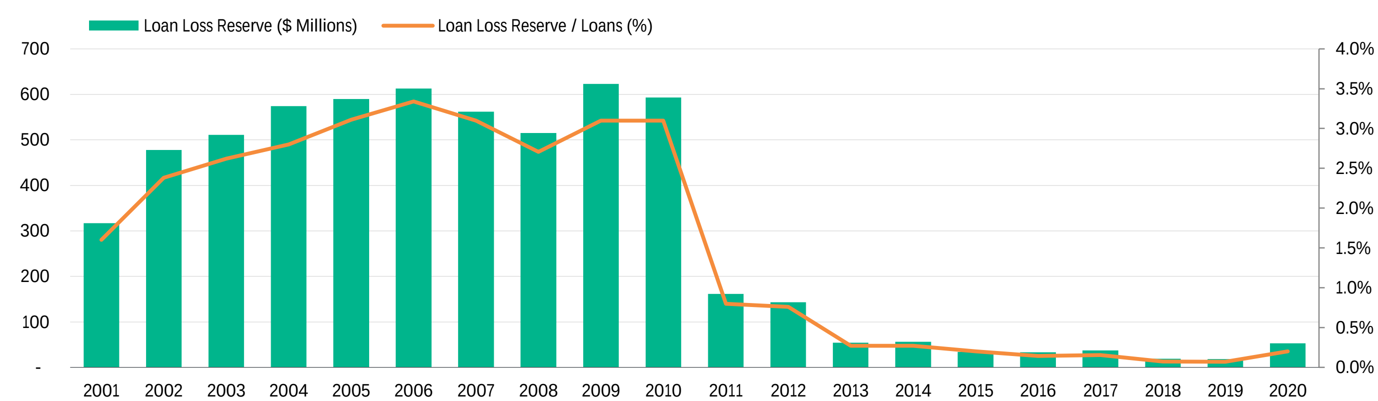
CFC has an unwavering commitment to minimize its lending to the riskier telecommunications sector, a credit positive initiative which began more than 16 years ago. The total outstanding telecommunications loans have declined by well over $4.0 billion since FY 2003 with about $396 million outstanding at August 31, 2020, representing 1% of CFC's total outstanding loan portfolio.

CFC's credit profile benefits from flexible loan pricing

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 2020 when it retained 98% of about $463 million of loans that repriced during that fiscal year. The loan retention rate for fiscal years 2018-20 averaged 96%. Over the next eight quarters from August 31, 2020, approximately $758.1 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.

High credit quality of loan portfolio evident through low loan loss reserves

Exhibit 3
Loan Loss Reserve 2001-2020



Source: Moody's Investors Service; CFC SEC Filings

Since the cooperative's inception in 1969, there have been 31 defaults and about $513 million of cumulative net charge-offs on its loan portfolio. Sixteen defaults occurred in the electric portfolio and fifteen related to the telecom portfolio. Despite the relatively even number of defaults between the telecom and electric portfolios, more than 80% of the cumulative net charge-offs were related to the riskier telecom loans, the most significant of which was a charge-off of $354 million in FY 2011. This charge-off related to outstanding loans to Innovative Communications Corporation ("ICC"), a former RTFC member, and the transfer of ICC's assets in foreclosure to Caribbean Asset Holdings, LLC (CAH). 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 August 31, 2020 (the end of first quarter for FY 2021) and at FYE 2020, CFC reported $10.346 million and $10.847 million of troubled debt restructuring (TDR) loans, respectively, comprising just 0.04% of its total loans outstanding for both periods. CFC had no delinquent loans as of August 31, 2020 or May 31, 2020, and it has not experienced any loan defaults or charge-offs since FY 2017. During Q-4 of FY 2020, CFC classified one loan as nonperforming and the loan was placed on non-accrual status. The outstanding balance on this loan was $161 million and $168 million, respectively at August 31, 2020 and May 31, 2020, respectively. The asset-specific allowance for credit losses of $34 million established as of May 31, 2020 for this loan to a CFC power supply borrower was reduced to $33 million at August 31, 2020. While the loan remains classified as nonperforming and on non-accrual status, the borrower is not in default and was current with respect to required payments as of August 31, 2020.

As depicted in exhibit three above, at August 31, 2020, CFC's allowance for credit losses relating to its loan portfolio increased to about $57.4 million, compared to $53.1 million at FYE 2020 and $17.6 million at August 31, 2019. The increase in the amounts since August 31, 2019 relate to the aforementioned asset-specific allowance for credit losses of $34 million established as of May 31, 2020 and 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 2020 and August 31, 2020 represent a modest 0.20% of CFC's total loans outstanding as of both ending period dates. Prior to the recent increases in allowance for credit losses, for the six fiscal years ended 2014-19, CFC's allowance for loan losses as a percentage of its total loans outstanding had declined from 0.27% to 0.07%.

Exhibit 4
Loan Security as of August 31, 2020

Loan Security ($ Amounts in Billions)	Secured	Secured as % of Segment	Unsecured	Unsecured as % of Segment
CFC	24.42	95%	1.42	5%
NCSC	0.64	94%	0.04	6%
RTFC	0.37	93%	0.03	7%
Total Loans	25.43	94%	1.49	6%

Source: Moody's Investors Service; CFC SEC Filings

As depicted in exhibit four above, at August 31, 2020, about 94% 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, 2020, CFC had approximately $1.387 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.

Unique franchise provides strong competitive position

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.

Ongoing attention to risk management and single obligor risk

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, 2020, CFC had sold 900 individual loans ($1.897 billion in aggregate) to Farmer Mac and was servicing loans aggregating approximately $1.044 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 $551 million as of August 31, 2020 compared to $569 million at May 31, 2020. No loans had been put to Farmer Mac for purchase, pursuant to this agreement, as of August 31, 2020.

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 eight 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 persists

At August 31, 2020, 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. 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 has funding flexibility through strategies that preserve and increase access to diverse sources of debt capital

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 $1.462 billion for the next twelve months and are likely to be in a range of $1.2 -$1.3 billion each year for the next few years.

At August 31, 2020, CFC's members provided about $5,619 million of funding, which represented about 22% of total debt outstanding. Of the $5,619 million, about $3,722 million represented short-term debt funding through $1,422 million in members' commercial paper, $645 million in members' investments in the daily liquidity fund and $1,655 million in the members' select notes program. The balance of members' funding at August 31, 2020 was provided by $598 million of members' MTNs and $1,299 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 $7.798 billion of twenty year funding from the Federal Financing Bank (FFB) of the US Treasury, of which about $6.226 billion was outstanding at August 31, 2020. 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 2039. As of August 31, 2020, CFC had up to $900 million available under the GUP.

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 expires January 11, 2022 but can be automatically extended for an additional year on the anniversary date of the closing. At August 31, 2020, CFC had availability of up to about $2.458 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.

Management's commitment to reducing leverage prevails

Due to the nature of its ownership structure, CFC does not have common stock in its capital structure. In its place, we view the deeply subordinated capital term certificates as having equity like characteristics.

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 7.58x during fiscal years 2016-2020.

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 7.93x at the end of the first quarter of FY 2021 (August 31, 2020). 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. Other factors affecting leverage during this period included an impairment taken from the CAH asset disposition during FY 2015, continued declines in members' subordinated certificates outstanding, write-off of a software investment and the increase in loan loss allowance during FY2020, partially offset by the benefits of partial equity treatment afforded to additional subordinated deferrable interest debentures issued during FY 2016 and FY 2019 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 7.83x level exhibited more than 10 years ago at FYE 2009. 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.

Although the need to fund loan growth is likely to continue during FY 2021, it is likely that loan growth will be less than prior periods as the financing requirements for most cooperatives in CFC's loan portfolio subside. The more moderate loan growth and good prospects for continued improvement in CFC's adjusted net interest income following the repayment of $1.0 billion of its highest coupon debt with an original maturity of November 1, 2018 should foster improvement in CFC's leverage trend in FY 2021 and beyond.

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 has 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 will work 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. In our view, the rapid and widening spread of the coronavirus outbreak, deteriorating global economic outlook, and financial market declines are creating a severe and extensive credit shock across many sectors, regions and markets. The combined credit effects of these developments are unprecedented. To this point, we do not see any material immediate credit risks for CFC owing to the coronavirus pandemic. In mid-March, CFC implemented an emergency business resumption plan resulting in approximately 95% of employees working remotely. Starting in mid-June, 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. 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 as residential loads have generally increased. 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 during the coronavirus pandemic. CFC recently reported there have been no delinquencies in scheduled loan payments and no requests from borrowers for payment deferrals or covenant relief, 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. 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 announced that he will be retiring during the first half of 2021 and we anticipate a likely smooth transition as CFC has hired a national search firm to assist in finding his replacement. 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 $1.4 billion for the next twelve months and are expected to be in a range of $1.2 - $1.3 billion annually for the next few years.

CFC is an active capital market participant and FY 2020 funding was sourced across virtually all components of its capital structure. The net effect of various transactions in FY 2020 was about an $838 million increase in CFC's total debt outstanding. The increase was primarily attributable to a net increase in member commercial paper, select notes and daily liquidity fund notes of $991 million, a net increase in borrowings under the GUP of $851 million and a net increase in medium-term notes of $160 million. These increases were partially offset by net decreases in dealer commercial paper of $945 million and collateral trust bonds of $195 million.

During Q-1 for FY 2021, CFC's total debt outstanding increased by $20 million, to $26.02 billion as of August 31, 2020, from May 31, 2020. The net effect of various transactions during Q-1 2021 included increases in outstanding member commercial paper, select notes and daily liquidity fund notes of $297 million and dealer commercial paper of $300 million, which together totaled $597 million. This increase was partially offset by net decreases in CTBs of $396 million, MTNs of $86 million, borrowings under the GUP of $35 million and Farmer Mac notes payable of $18 million, which together totaled $535 million.

As of August 31, 2020, CFC continues to have access to substantial private sources of capital, including $900 million under the GUP ($400 million available for advance through July 15, 2023 and $500 million available for advance through July 15, 2024) and $2,458 million under the Farmer Mac facility, which contributes to the above average liquidity profile. Also, on September 16, 2020 CFC received a commitment letter for an additional $375 million loan facility under the GUP.

At August 31, 2020, CFC had a dealer commercial paper balance of approximately $300 million. 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 well below its targetted maximum threshold of $1,250 million for the foreseeable future. While CFC intends to continue utilizing commercial paper as a source of funding, it is committed to keeping future peak outstanding dealer commercial paper 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 $347.8 million of cash and cash equivalents and $527.5 million of liquid, short- to intermediate-term investment grade securities classified as trading securities as of August 31, 2020. Through an amendment and extension process closed on November 26, 2019, CFC has two committed credit facilities aggregating $2,725 million. Specifically, CFC has a $1,315 million facility with a November 2022 expiration date and a $1,410 million facility with a November 2023 expiration date. This process resulted in an overall relatively modest reduction in available liquidity of about $250 million. With these facilities in place, the total amount of commercial paper that can be issued by CFC is capped at $2,725 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, 2020, CFC was comfortably in compliance with these covenants.

At August 31, 2020, CFC was the guarantor and liquidity provider for $186.1 million of tax-exempt bonds issued for its member cooperatives. During FYE May 31, 2020 and the first quarter of fiscal year 2021, which ended August 31, 2020, 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 2020 through September 2021, CFC reported about $2.383 billion of notes and bonds maturing, of which about $355 million are comprised of CTBs, $448 million are comprised of Member MTNs, $142 million is due under the GUP, and $562 million is due under the Farmer Mac program, leaving about $126 million of InterNotes, and $750 million of maturing Dealer MTNs. The larger components of the reported debt maturities for this period are $350 million of CTBs which, although due in November 2020 were repaid on October 1, 2020, $333 million of Farmer Mac notes due in December 2020 and $450 million of Dealer MTNs due in March 2021 and $300 million of Dealer MTNs due in June 2021. 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. Please see the Credit Policy page on www.moodys.com for a copy of the methodology.

Ratings

Exhibit 5

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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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454