National Rural Utilities Cooperative Finance Corp.

Full Rating Report

Ratings

Long-Term IDR	A
Short-Term IDR	F1
Senior Secured IDR	A+
Commercial Paper	F1
Subordinated Deferrable Debt	BBB+

Outlooks

Long-Term IDR	Stable

Financial Data

National Rural Utilities Cooperative Finance Corp.

($ Mil.)	5/31/17	5/31/16
Total Assets	25,206	24,270
Total Equity	1,099	817
Total Member Subordinated Certificates	1,419	1,444
Subordinated Deferrable Debt	742.2	742.2
Collateral Trust Bonds	7,634	7,253
Adjusted TIER	1.16	1.22
Fitch Adjusted D/E	7.8	8.3

Source: Company reports, Fitch.

Related Research

National Rural Utilities Cooperative Finance Corporation — Ratings Navigator (June 2017)

2017 Outlook: U.S. Public Power and Electric Cooperative Sector (December 2016)

Sector Briefing: Public Power and Electric Cooperatives (July 2017)

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Key Rating Drivers

Market Position Supports High Rating: National Rural Utilities Cooperative Finance Corp. (CFC) has meaningful and unique franchise strengths within the electric cooperative lending space that support its high ratings. Fitch Ratings estimates that CFC consistently garners over 20% of the total electric cooperative lending market. Moreover, CFC continues strengthening its franchise, as demonstrated by the borrowers using CFC exclusively for their long-term borrowing needs. The company discloses that the number of such borrowers grew to 224 at FYE17 from 212 at FYE15 and 196 at FYE14.

Strong Credit Quality: CFC's strong asset quality and very low credit losses over time further support the rating. CFC's primary credit exposure is to rural electric cooperatives that provide essential electric services to end-users. Many borrowers are unhindered from a regulatory perspective from passing along increased input costs to the end-customer, resulting in a stable operating environment for the rural electric cooperative space. Moreover, over 90% of CFC's loan portfolio by dollar volume is secured by senior liens. At FY17, the company had no non-accrual loans or nominal accruing troubled debt restructures.

Profitability Reflects Mission and Structure: Earnings and profitability, while very low compared to similarly rated financial institutions, are adequate and have less influence on CFC's overall rating. As a cooperative, CFC's mission is not to generate large profits but instead to cover funding costs, operating costs and loan losses. Therefore, in analyzing CFC's earnings and profitability, Fitch places greater emphasis on adjusted net income and adjusted times interest earned ratio (TIER) measures.

High Leverage but Reasonable for Risk Profile: Leverage remains well above similarly rated bank and non-bank financial institutions and is a rating constraint. However, Fitch views CFC's leverage as reasonable given low portfolio credit risk and CFC's ability and willingness to access subordinated debt markets to support growth.

Strong Available Sources of Liquidity: Fitch's analysis of CFC focuses heavily on its ability to maintain adequate liquidity to meet short- and long-term funding needs. Fitch notes that CFC's funding structure is reliant on capital markets, albeit less than in the past, which is more in line with lower rated non-bank financial institutions. However, the company's actual on- and off-balance sheet liquidity is very strong and consistent with CFC's rating and outlook.

Rating Sensitivities

Solidly Situated: CFC's ratings are solidly situated at their current levels. While Fitch does not anticipate further upward rating movement in the near-to-medium term, downward rating pressure is also unlikely given the stability of CFC's credit profile and franchise.

Sensitive to Strategic Direction: Fitch expects management to maintain its strategic focus on CFC's core members. Management has significantly reduced exposure to telecommunications entities, which have been the cause of most of CFC's credit losses over its history. If there is a perceived drift in focus, as evidenced by an increased level of lending to sectors outside of its rural electric member base, negative rating action would be likely.

Reduced Leverage Could Bring Uplift: Ratings could be positively influenced over the long term by a continued build-up of equity such that leverage aligns with higher rated peers.

Operating Environment

CFC operates in a strong operating environment, consisting of a solid sovereign rating, stable economy and robust financial markets.

CFC's primary exposure is to the U.S. electric cooperative sector. Per Fitch's report "2017 U.S. Public Power and Electric Cooperative Sector Outlook," dated December 2016, available at www.fitchratings.com, Fitch's rating and sector outlook for the space remains stable. Strong sector characteristics, including autonomous rate-setting authority, the essentiality of the electric sector, particularly in rural America, and reliable cash flow should allow the sector to retain a solid fiscal position.

Electric cooperatives have historically shown the ability and willingness to increase electric rates in order to preserve financial margins. While there is always risk related to increased environment regulation, which could challenge input costs over the long term, Fitch's views these risks as manageable. For additional information around the public power and electric cooperative sector, please see the links listed to the left on page 1.

CFC is an unregulated entity, thus, there is no prudential oversight over lending/funding activities. Therefore, Fitch is not able to opine on the quality of regulatory framework as it typically does for financial institutions. However, Fitch notes that CFC is Sarbanes-Oxley-compliant and is a SEC-filer in order to remain transparent to the investor community.

Company Profile

Franchise and Market Position Heavily Influence Rating

CFC was formed in 1969 by its members, primarily rural cooperative electric distributors and generation and transmission (G&T) systems. The company was organized to provide its members with a source of financing to supplement the Rural Utilities Service's (RUS) lending program. Members at the time felt that they needed more capital than the RUS could provide given continued population expansion into rural America.

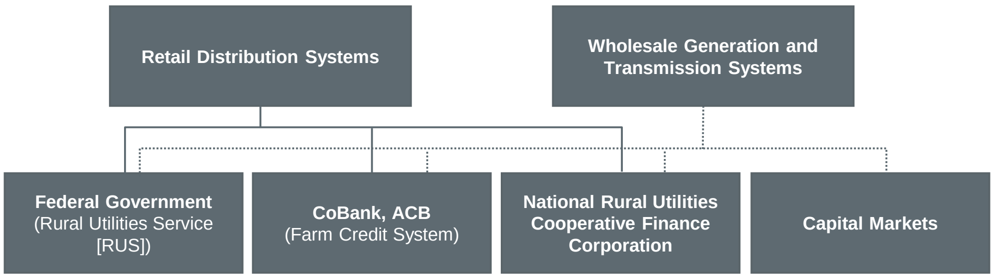
Fitch notes that within the electric cooperative finance space, there are really just three primary players: the federal government (via the RUS), the Farm Credit System (via CoBank, ACB [long-term IDR rated 'AA–' by Fitch]) and CFC as shown below. Large G&T cooperatives can also access the capital markets for financing needs.

Related Criteria

Global Non-Bank Financial Institutions Rating Criteria (March 2017)

Non-Financial Corporates Hybrids Treatment and Notching Criteria (April 2017)

Annual Financing Needs to Electric Co-Ops



Source: Fitch Ratings.

In Fitch's view, CFC has meaningful and unique franchise strengths within the electric cooperative lending space that support its high ratings. Fitch estimates that CFC consistently garners approximately 20% of the electric cooperative lending market. Moreover, CFC continues to strengthen its franchise, demonstrated by the number of borrowers that use CFC exclusively for borrowing needs. The company discloses that the number has grown to 224 borrowers at FYE17 from 212 at FYE15 and 196 at FYE14.

Electric Cooperative Financing Market Share

($ Bil.)	2016	% of Debt Market	2015	% of Debt Market	2014	% of Debt Market	2013	% of Debt Market	2012	% of Debt Market	2011	% of Debt Market	2010	% of Debt Market
RUS	39.30	41	39.10	42	42.75	48	42.49	48	39.68	47	39.12	49	36.65	49
CFC	22.10	23	21.00	23	19.11	21	18.46	21	17.10	20	16.52	21	16.99	23
Non-CFC	33.80	36	32.90	35	27.80	31	26.93	31	26.77	32	24.05	30	21.15	28
Total Debt Market	**95.20**		**93.00**		**89.66**		**87.88**		**83.55**		**79.69**		**74.79**	

Source: National Rural Utilities Cooperative Finance Corporation Annual Filings.

Cooperative Model Has Credit Strengths and Weaknesses

CFC had just under 1,461 members and 219 associates at 4QFY17 with a loan portfolio primarily tied to the electric cooperative space — both on the supply and distribution side. While this industry concentration is significant, Fitch views loans to rural electric utilities (REUs) as low risk, evidenced by very low net charge-offs (NCOs) over time as well as a low level of nonperforming loans to REUs. For additional information regarding CFC's loan book, see Asset Quality on page 7.

Being a cooperative, CFC's internal equity generation capacity is limited to two options: retaining more earnings or requesting its member to inject additional subordinated debt capital. However, earnings are not the co-op's number one priority, serving members and meeting mission is, and those earnings that are generated are typically returned to members over time.

In Fitch's view, the inability to access capital markets for third-party equity capital is a rating constraint over time. However, CFC has shown the ability and willingness to access the third-party capital markets through the issuance of subordinated deferrable debt (SDD) as evidenced by its April 2016 issuance of $350 million. For further discussion pertaining to capital, see Capitalization and Leverage on page 8.

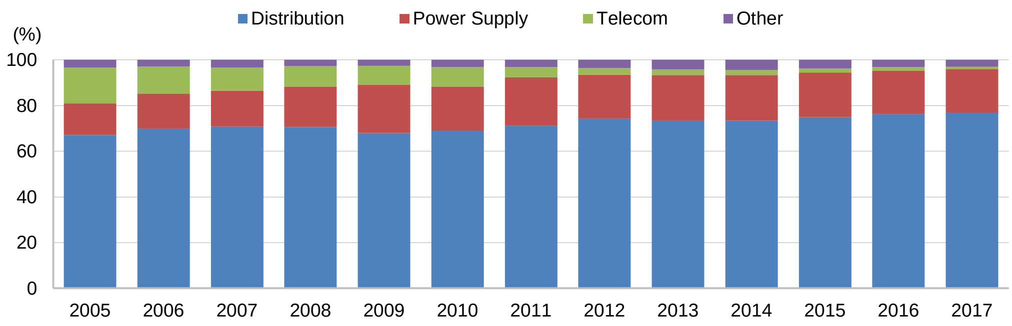
Management and Strategy

Management quality and strategic execution is viewed favorably and supports the current rating. Each member of senior management has significant experience at CFC and/or in the electric cooperative or investor-owned utility space.

Focus on Core Membership Continue; Key to Rating

Management has continued to focus on its core members, further reducing credit risk. CFC's exposure to rural electric cooperatives represented around 99% of the outstanding loan portfolio at 4Q17. Loans to telecommunication entities, which in the past had been built up to approximately 25% of the portfolio and subsequently were the primary driver of elevated nonperforming assets (NPAs) and credit losses, have decreased substantially and now represent under 1% of the portfolio.

Lending Portfolio Focused on Core Members



Source: Company reports, Fitch.

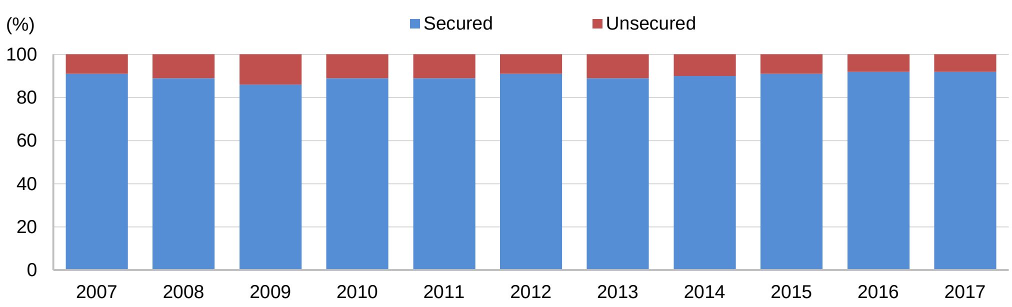
Fitch expects management to maintain is strategic focus on CFC core members. Management has significantly reduced exposure to telecommunications entities, which have been the cause of most of CFC's credit losses over its history. If there is a perceived drift in focus, evidenced by an increased level of lending to sectors outside of its rural electric member base, negative rating action would be likely.

Risk Appetite

Fitch considers CFC's underwriting to be adequate and consistent with the risk profile of the borrowers to which CFC lends. This is evidenced by very low loss rates over the course of CFC's history. During CFC's entire history, total write-offs have totaled under $600 million (before recoveries), of which $415 million was related to two telecom credits. CFC has had seven distribution systems default and nine G&T systems over the same time period, resulting in $86 million of net write-offs.

Loss rates are aided by CFC consistently lending on a senior secured basis, a credit positive. CFC is typically, if not always, in the senior secured position and on parity with the RUS with liens on all hard assets of the borrower as well as revenue. Those loans where CFC does not have a lien on borrower assets are typically short-term revolving lines of credit that have short durations and are re-underwritten frequently.

Mostly Lend on a Senior Secured Basis



Source: Company Reports.

CFC's stance to take a long-term view of member borrower relationship also aids in keeping credit losses low as it affords the company the ability to restructure credits in a way that are generally mutually beneficial to both borrower and lender. Moreover, in Fitch's view, the lack of a prudential regulator, which would typically encourage a lender to work out of credits in a quicker manner, also benefits CFC's ability to work with borrowers and maintain high recovery rates.

For comparison sake, Fitch has taken NCOs related to CoBank, ACB's rural infrastructure portfolio and compared them with CFC's portfolio over time. As can be seen in the table below, loss rates for both entities are very low through the credit downturn, pointing toward not only solid underwriting but also strong borrowers. Note that CFC's credit loss spike in 2011 was fully related to a telecom company (Innovative Communication Corporation), a loan that had been on non-accrual since 2005. If that loan was excluded, NCOs in 2011 would have been 0.0%.

Utilities Net Charge Off Rate

(As % of Portfolio)

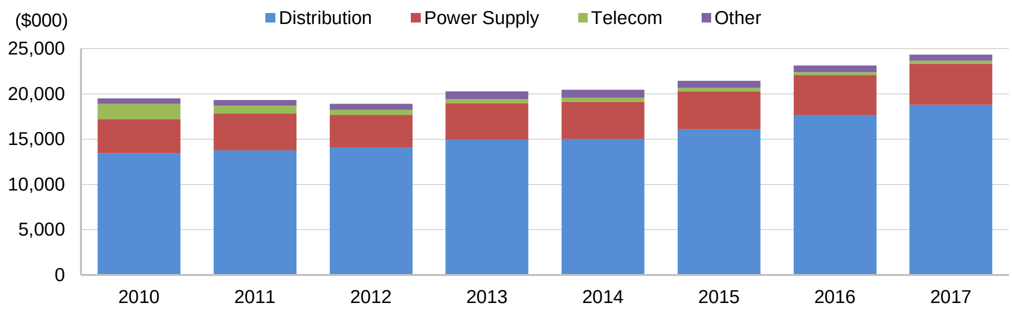
	2016	2015	2014	2013	2012	2011	2010	2009	2007
CoBank % NCOs	(0.07)	0.03	0.02	(0.01)	(0.01)	0.11	0.31	0.29	0.05
CFC % NCOs	0.00	0.00	0.01	0.09	0.00	1.80	0.00	0.03	0.02

Note: CoBank's Rural Infrastructure loan portfolio includes other types of borrowers (water treatment and others) that CFC does not lend to. However, Fitch was not able to specify CoBank's losses to just electric cooperatives. Therefore, the above analysis should be viewed as a general proxy for loan losses related to the broad utility space and not just electric distribution/G&T and telecom.
Source: Company reports.

Growth Has Continued

Growth is considered reasonable relative to CFC's risk profile. Management indicated that CFC basically needs to fund $1 billion of loans each year to stay flat from a loan portfolio standpoint. Furthermore, growth is constrained by CFC's public goal of keeping adjusted leverage (D/E) at close to 6.0x.

Growth Limited by Paydowns but More Robust Over Recent Periods



Source: Company reports.

Outsized growth continued into FY17 with management attributing this to further market share taken from RUS. Fitch believes that a portion of the growth has been borrowers refinancing at CFC from RUS, which are typically lower risk borrowers that have already amortized down debt a meaningful amount. Moreover, Fitch notes that in order to support the growth and maintain adjusted leverage at a reasonable level, CFC issued SDD in April 2016 which brought CFC's adjusted D/E below 6.0x.

Risk Controls Remain Strong

Risk controls are considered strong and supportive of a high rating. As an example, credit concentrations have been managed down, especially related to the telecommunication industry. Management has reduced concentrations related to the electric cooperative portfolio through a loan sale program and a long-term standby purchase agreement with Farmer Mac and through the development of a meaningful syndication program. Fitch views these programs positively in that they give CFC an additional avenue to manage single obligor and credit risk over time.

As another example, single-exposure credit concentrations have been managed down, especially on the telecom side. At 4Q17, CFC's top 20 borrowers made up 23% of CFCs loan and guarantee book, which would be considered a rating constraint at a typical financial institution. However, given the nature of CFC's business, the fact that none of the top 20 borrowers are in telecom space and the vast geographic diversity of CFC's borrowers, this risk is somewhat mitigated. Also, Fitch observes that, at one point in FYE03, its top 20 borrowers made up 25% of the loan portfolio.

Other risk reporting and risk management tools are considered to be in line with CFC's risk profile and rating. Market risk monitoring tools are discussed below and are considered to be reasonable for CFC.

Simplistic Derivatives to Match-Fund Balance Sheet

CFC's primary interest rate risk (IRR) management objective is to match fund its balance sheet within a certain percentage of assets in order to minimize rate risk. However, CFC does not match fund the majority of its long-term, fixed-rate loans with a specific debt issuance at the time a loan is advanced.

Instead, Fitch observes that CFC typically aggregates long-term, fixed-rate loans until the level reaches a point where it makes sense from an economic standpoint to issue some long-term debt to fund long-term fixed-rate loans. Therefore, CFC is exposed to IRR on its long-term fixed-rate loans between the time that the company determines the rate on the loan and the time it obtains the funding. At 4Q17, fixed rate loans funded with variable-rate debt (namely member/non-member CP) totaled $689 million, or roughly 2.7% of total assets, within management's targets.

In order to minimize IRR, CFC utilizes plain vanilla swaps. Over the past few years, swap usage has mainly consisted of pay fixed/receive floating of longer tenors given the prolonged rate environment and the desire of CFC's borrowers to lock in long-term fixed rates.

Average Notional Derivatives Outstanding

($ Mil.)	2017	2016	2015
Pay Fixed/Receive Float	6,676.0	6,322.0	5,583.0
Pay Float/Receive Fixed	3,914.0	3,671.0	3,227.0
Total Outstanding	**10,590.0**	**9,993.0**	**8,810.0**
Cash Settlements (Paid)/Received	(84.5)	(88.8)	(82.9)

Source: Company reports.

CFC records all derivatives as either assets or liabilities and measures the fair value of the instruments at each quarter end with cash settlements included in interest expense (cost of funds) when adjusted performance ratios are calculated. Since 2008, CFC has had negative net mark-to-market (MTM) valuations on the swap portfolio due to the rate environment, which has caused some volatility in reported earnings over time.

Fitch notes that in a rising rate environment, CFC will likely have positive net MTM valuations and receive cash settlements each quarter. For analytical purposes, Fitch treats these payments (and future receipts) as part of CFC's cost of funds (as shown in the Earnings and Profitability section discussed below).

Financial Profile

Asset Quality

Strong Asset Quality Gives Rating Uplift

Asset Quality Metrics

($000)	2017	2016	2015	2014	2013	2012	2011	2010	2009
CFC									
Nonperforming Loans (NPL)	0	0	0	2,095	15,497	41,213	31,344	560,527	523,758
Restructured Loans	13,173	17,314	11,736	7,584	46,953	455,689	474,381	508,044	537,587
Foreclosed Assets	0	102,967	116,507	245,651	261,472	223,476	280,811	42,252	48,721
Total Nonperforming Assets (NPAs)	**13,173**	**116,775**	**128,243**	**255,330**	**323,922**	**720,378**	**786,536**	**1,110,823**	**1,110,066**
NPLs (% of Loans) (%)	0.00	0.00	0.00	0.05	0.31	2.63	2.62	5.52	5.26
NPAs (% of Loans + Foreclosed Assets) (%)	0.05	0.51	0.59	1.25	1.60	3.81	4.07	5.74	5.50
ALLL/(NPL+Restruct.)	2.84	2.40	2.87	5.83	0.87	0.29	0.32	0.55	0.59

Source: Company reports, Fitch.

Asset quality is strong and supportive of a relatively high rating. Nonperforming loans as a portion of loans are very low and reflective of strong member borrowers. Fitch also notes the relatively low loss rates associated with CFC's core lending competency. Where the company has experienced the greatest level of credit loss has been in loans to telecommunication companies, which CFC has significantly reduced exposure to over time as shown above in the Management and Strategy section on page 3.

As expected reported NPAs dropped significantly as CFC completed the sale of its largest legacy foreclosed asset, Caribbean Asset Holdings, LLC (CAH) on July 1, 2016. The final disposition of CAH and the association disposition costs were within a tolerable range, in Fitch's view, and credit neutral to CFC's rating and outlook. At 4Q17, the company had no nonaccrual loans and nominal accruing troubled debt restructures.

Allowance levels are considered to be adequate when viewed in light of current problem loans. Fitch views coverage as reasonable considering that even when including restructured loans, ALLL coverage of NPLs is over 2.8x.

Earnings and Profitability

Profitability in Line with Business Model and Structure

Earnings and profitability, while very low compared to similarly rated financial institutions, are adequate and have a lower influence on CFC's overall rating. As a cooperative, CFC's mission is not to generate large profits but instead to cover its cost of funding, its cost of operation and its loan losses. Thus, in its analysis of CFC's earnings and profitability, Fitch places a greater emphasis on the company's adjusted net income and adjusted TIER measures.

Operating Results

($000, Fiscal Year Ending May 31)

	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Int. Income	294,896	330,786	317,292	302,885	263,728	199,183	167,831	131,524	135,743
(-) Derivative Cash Settlements	84,478	88,758	82,906	73,962	56,461	12,846	6,848	23,304	(112,989)
Adjusted Net Int. Income	210,418	242,028	234,386	228,923	207,267	186,337	160,983	108,220	248,732
Net Income	312,099	(51,516)	(18,927)	192,926	358,087	(148,797)	151,215	110,547	(73,770)
(+) Derivative Forward Value	(179,381)	221,083	114,093	39,541	141,304	223,774	23,388	(2,696)	160,017
Adjusted net income	132,718	169,567	95,166	153,385	216,783	74,977	174,603	107,851	86,247
Adj. TIER (x)	1.16	1.22	1.13	1.21	1.29	1.1	1.21	1.12	1.11
Operating Expense to Loans (%)	0.35	0.37	0.36	0.35	0.41	0.35	0.37	0.37	0.25

Source: Company Reports; Operating expenses include salaries, benefits and other SG&A.

These measures have been adequate and in-line with Fitch's expectations. CFC's adjusted TIER, which excludes the impact of unrealized derivative forward fair value gains and losses and includes periodic cash derivative settlements as adjusted interest expense, was 1.16x through 4Q17, down from 1.22x through 4Q16. Modest growth in interest income from higher loan balances was offset by higher interest expense from higher interest rates as well as the addition of more subordinated deferrable debt relative to FY2016. Given the company's strong credit quality and ability to adequately price loans, Fitch expects adjusted TIER to remain strong and in excess of its 1.1x target over time. This expectation is reflected into the current rating and Stable Outlook.

Adjusted TIER is a benchmark included when determining compliance with CFC’s covenants tied to its revolving credit lines. Under the covenant, CFC must maintain an average adjusted TIER of greater than 1.025x over a six-quarter period and it must maintain an adjusted TIER of greater than 1.05x for the most recent fiscal year in order to distribute patronage capital to its members. CFC’s adjusted TIER results have far exceeded these minimums over recent periods. Given the company’s strong credit quality and ability to adequately price loans, Fitch expects adjusted TIER to remain strong and in excess of its 1.1x target over time. This expectation is reflected in recent rating actions.

Capitalization and Leverage

Unique Capital Structure

Leverage remains well-above similarly rated bank and non-bank financial institutions and is a rating constraint. Fitch gives CFC's subordinated deferrable debt and member capital securities 50% equity credit based on Fitch's “Non-Financial Corporates Hybrids Treatment and Notching Criteria”. If CFC's loan and guarantee subordinated certificates (LGSCs), which can be used to absorb credit losses, are considered 100% equity, Fitch calculates debt to equity of 7.8x at FYE17, down from 8.3x at FYE16. The decline is primarily the result of GAAP equity increasing due to the company's earnings this year (inclusive of derivative fair value changes) offsetting loan growth.

Fitch's calculation of leverage, in particular the treatment of the deferrable debt, member capital securities, and CFC's LGSCs in its consideration of equity, is a variation from Fitch's Global Non-Bank Financial Institutions criteria. These adjustments (detailed above) are considered variations to the criteria and are incorporated in the assessment of CFC's rating due to its status as a cooperative and the unique nature of its capital structure.

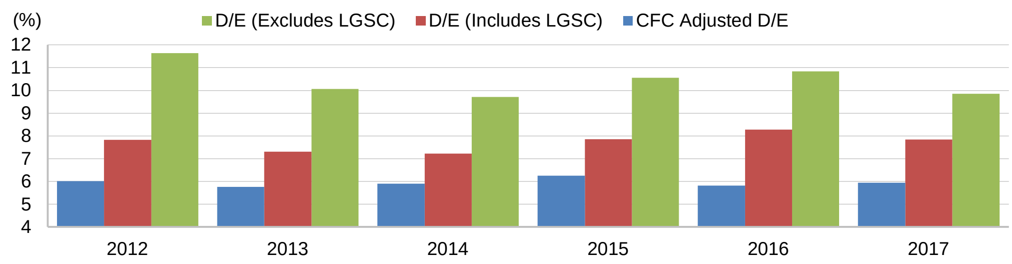
Fitch's Analysis of CFC Equity Base

(Per Fitch Criteria “Non-Financial Corporates Hybrids Treatment and Notching Criteria”)

($ Mil.)	4Q17	Equity Credit (%)	Fitch Adj. Equity
GAAP Equity	1,099	100	1,099
Member Subordinated Sec.	630	100	630
Subordinated Def. Debt	742	50	371
Member Capital Sec.	221	50	111
Total Equity	**2,691**	**—**	**2,210**
Loan and Guarantee Cert.	568	100	568
Total Fitch Adj. Equity	**—**	**—**	**2,777**

Source: Company reports, Fitch

Internal Adjusted Debt-to-Equity Managed Reasonably

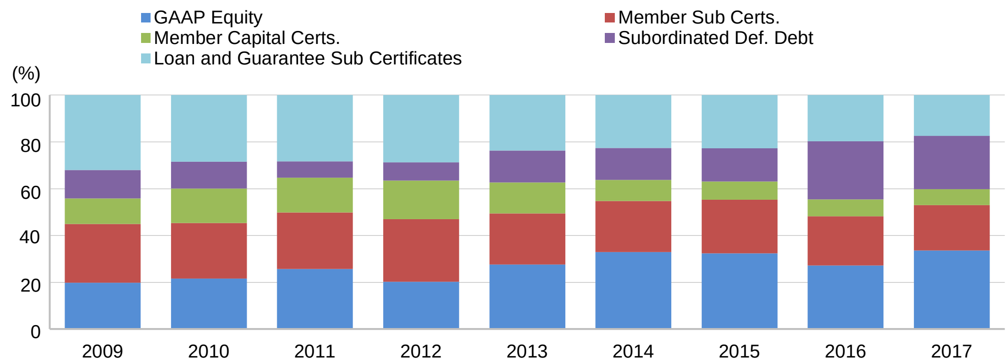


Note: Fitch Adjusted D/E (Excl. LGSCs) calculated in following manner: nonmember debt obligations + member CP and MTNs + 50% of SDD + 50% of MCS divided by equity + MSCs + 50% SDD + 50% MCS. Fitch Adjusted D/E (Incl. LGSCs) calculated in following manner: nonmember debt obligations + member CP and MTNs + 50% of SDD + 50% of MCS divided by equity + MSCs + 50% SDD + 50% MCS + LGSCs. CFC Adjusted D/E calculated in the following manner: total liabilities – derivative liabilities – debt used to fund RUS-guaranteed loans – SDD – MCS – MSC – LGSC divided by total equity – prior year derivative forward value adjustment – current YTD derivative forward value (gains) losses – AOCI + MCS + MSC + LGSC.
Source: Company Reports, Fitch.

Importantly, CFC's bank line of credit covenants strip out derivative fair value changes and all member-held capital and debt and subordinated deferrable debt are given 100% equity credit when determining the company's adjusted leverage. When making these adjustments, CFC's 4Q17 adjusted debt to equity stood at 5.95x up from 5.82x at FYE16. This adjusted leverage level is also high relative to rated financial institutions. However, Fitch views CFC's leverage as reasonable given low portfolio credit risk and CFC's ability and willingness to access subordinated debt markets to support growth.

It is also important to note that management and the board have taken significant steps in building up GAAP equity over recent periods to the point where it makes up over 30% of CFC's equity base compared to 2009 when it was just under 20%. Fitch primarily attributes this growth to a change the board made to CFC's patronage payout capital policy in 2009 to increase not only the level of earnings retained each year but also the length of time excess earnings are retained on balance sheet before they revolve to CFC's membership. Fitch notes that GAAP equity has also benefited from improved earnings performance over recent periods.

Move Toward More GAAP Equity in Cap Structure is Goal



Source: Company reports.

Funding and Liquidity

Strong Liquidity Offset by Funding Profile

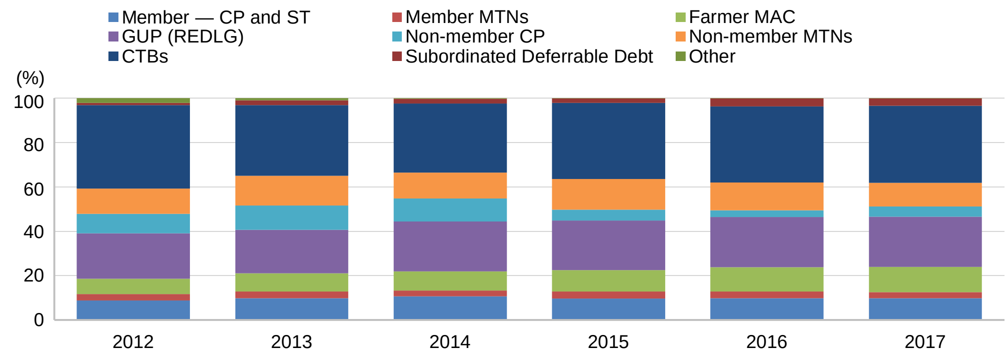
Fitch's analysis of CFC heavily revolves around its ability to maintain adequate liquidity to meet short- and long-term funding needs. Fitch notes that while CFC's funding structure, which is reliant on capital markets, albeit at lower levels than in the past, is more in line with lower rated non-bank financial institutions. However, the company's actual on-and-off-balance-sheet liquidity is very strong and in line with CFC's rating and outlook

CFC's ratings are also supported by CFC's ability to maintain adequate funding in various rate and credit cycles and management's efforts to diversify the company's funding base over time. Management has been able to establish funding sources with the FFB, Farmer Mac and with a syndicate of commercial banks. Nonetheless, Fitch recognizes that CFC's ability to access the capital markets at reasonable costs is heavily tied to its perceived creditworthiness.

ST Capital Markets Dependency Down

Fitch observes that CFC has not only diversified its funding base over recent periods away from its reliance on the capital markets but has also taken steps to stagger its maturities to be

Funding Structure



CP – ?????. ST – ????.
Source: Company reports, Fitch.

less chunky. Fitch observes that while commercial paper (CP) usage (member and non-member) is still relatively high at around 9% of total funding at 4Q17, this is an improved level since 2009 and even more so since 2006 when CP represented just under a fifth of the company's funding. CFC manages its short-term wholesale non-member CP within a range of $1.00 billion and $1.25 billion, a reasonable level relative to CFC's current risk profile.

Nonmember, Noncapital Markets Funding Available

Prior to the financial crisis, management established a couple of private funding programs. The first was the Guaranteed Underwriter Program (GUP). Under this agreement, CFC borrows from the FFB under a guarantee from the RUS. Funds available from the program are appropriated each year by Congress. This provides CFC with a reliable, low-cost source of long-dated funds. CFC can draw on these funds at anywhere on the Treasury curve up to 20 years at a fixed rate of up to related Treasury curve rate plus a range of 50 bps–65 bps. As can be seen in the graph above, the GUP has become a more prominent source of funding over the years given its reliability, flexibility and cost.

In December 2016, CFC closed on a $375 million committed loan facility from the Federal Financing Bank guaranteed by RUS pursuant to the GUP. Under the facility, CFC is able to borrow any time before October 15, 2019 at terms noted above. As a result of this new commitment, the total for committed facilities under the GUP increased to $5,798 million, with up to $725 million available under these facilities as of 4Q17.

Strong Liquidity Sources Available

(As of 4Q17)	Total	Used	Available
Cash	393	0	393
GUP	5,798	5,073	725
Farmer Mac	4,500	2,513	1,987
Farmer Mac Revolving Line	300	—	300
Bank Lines	3,165	1	3,164
Total	**14,156**	**7,587**	**6,569**
As % of Total Assets	—	—	26.06

Source: Company reports, Fitch

The other nonmember, noncapital markets source of funds is via Farmer Mac with whom CFC has a note purchase agreement in place. Under the terms of the note purchase agreement, CFC can borrow up to $4.5 billion at any time through January 2020, and the agreement automatically renews annually after that. At 4Q17, the program had $2.5 billion outstanding, leaving around $2 billion available for use.

Separately, CFC has a $300 million revolving note purchase agreement with Farmer Mac maturing in July 2018. Similar to the GUP, these agreements have very flexible options in terms of tenor/rate that CFC can use. CFC didn't have any outstanding under this program as of 4Q17, and an available borrowing amount of $300 million.

Collateral Trust Bonds Provide Cheap, Secured Funding

CFC continues to rely significantly on collateral trust bonds (CTBs) are part of its funding structure with the instruments averaging 30% of funding over the past few years. Fitch expects the current usage of CTBs to remain relatively flat. CTBs have proven to be a strong, cost-effective source of funds given their level of security and quality of mortgage loans that back them. Fitch's rating for senior secured debt reflects the fact that little to no loss is expected on the instruments even in a severe liquidation scenario. See below for additional information on CTBs.

CFC's GUP and Farmer Mac programs also require pledged loans, which further increases the level of secured debt on balance sheet. However, Fitch notes that CFC still has 26% of its loan portfolio unencumbered, leaving significant funding available to the company should the need arise.

Bank Lines Further Diversify Funding Sources, Covenant Testing Governs Leverage

At 4Q17, CFC had $3.2 billion in commitment lines of credit from a syndicate of banks. Maturities of the lines are staggered at 2019 and 2021. Fitch views the committed lines as a last source of liquidity given the relatively higher cost of using them (compared to CP) and does not envision CFC using them unless there was another fairly significant freeze-up in the CP market like there was in 2008. As noted above, there are covenants associated with these lines that CFC has not come close to tripping thus far. CFC must maintain an average adjusted TIER of greater than 1.025x over a six-quarter period and it must maintain an adjusted TIER of greater than 1.05x for the most recent fiscal year.

Debt Ratings

Ratings assigned to the senior secured notes are notched up by one notch from CFC's IDR given the strong collateral backing such notes and the likely strong recovery prospects for debtholders. Fitch notes that CFC's CTBs are backed by high-performing mortgage notes with strong, stable underlying hard assets and substitution requirements in the event of collateral underperformance. Recoveries in the utility space have been high for CFC over time, a key consideration when determining notching for the secured debt.

Ratings assigned to SDD are notched down by two notches from CFC's IDR. When assessing CFC's SDD for equity credit and notching, Fitch utilized 'Non-Financial Corporates Hybrids Treatment and Notching Criteria' dated April 2017, available on Fitch's website at www.fitchratings.com, due to the unique nature of CFC's business model, which exhibits some nonfinancial institution characteristics. Fitch views CFC's that SDD has a hybrid capital instrument given that it can defer interest payments for up to five years (10 payments), with payments accruing over time.

The instrument is given 50% equity credit and 50% debt treatment in Fitch's analysis. SDD would be senior to all member-held instruments but subordinate to senior secured and senior unsecured debt levels. Still, Fitch believes CFC's SDD would have higher recovery prospects than bank-issued hybrid debt, thus warranting narrower notching than a traditional hybrid capital instrument.

Appendix

Discussion of Debt Instruments

As a cooperative, CFC's capital generation primarily is derived from its members, through member-owned investment vehicles, and retained earnings, a rating constraint in Fitch's view. This is especially important given that CFC's earnings are low due its mission-oriented business model. Still, management and the board have shown the willingness to improve earnings retention in order to improve the quality of CFC's capital and lower its leverage by adjusting the company's patronage policy in 2009.

In assessing the equity credit treatment given to CFC's various instruments (and thus determining capital adequacy), Fitch has applied its Treatment and Notching of Hybrids in Nonfinancial Corporate and REIT Credit Analysis. The assessment is laid out in the follow pages.

It is important to note that all of CFC's capital instruments are held by system members, except for the outstanding SDD. Most of these instruments held by system members are subordinated, meaning they would take first loss before all other non-member instruments.

Member-Subordinated Certificates

Member-subordinated certificates (MSCs represent the company's initial capitalization and were required to be purchased as condition of membership. The instruments are interest bearing (weighted-average rate of 4.9%) with an initial maturity of 100 years and are cumulative. Fitch believes MSCs resemble perpetual preferred stock and gives them 100% equity credit.

Member Capital Securities

The member capital securities (MCS) program is an initiative started at the end of 2008 to raise additional capital from CFC's members and further entrench membership. These are interest bearing (most recently at 5.0%), with a maturity of 30 years from issuance. Payments, which are cumulative, can be deferred for up to five years. As mentioned above, these have full offset rights in the event that a borrower defaults. According to Fitch's criteria, they are given 50% equity credit.

Subordinated Deferrable Debt

In order to supplement CFC's capital base, management has made the decision over the years to issue nonmember-SDD with the following attributes: subordinated to all senior debt; senior to all member-held instruments; 30-year maturity from issuance; and can defer up to five years (similar to MCS). During deferral, interest continues to accrue (cumulative); thus, based on Fitch's criteria, these securities are treated as 50% equity and 50% debt.

Loan and Guarantee Subordinated Certificates

Borrowers that receive long-term funding from CFC, certain short-term loans or guarantees are sometimes required to purchase additional loan and guarantee subordinated certificates (LGSCs) based on the member's debt to equity ratio with CFC. Similar to MSCs and MCSs, these are subordinated to all other debt of CFC. The maturity of LGSCs match that of the financing that the borrower is receiving but some also amortize annually based on the outstanding balance, paid back as the borrower repays the loan.

LGSCs are included in capital without limitation under CFC's covenant calculations for leverage. Given that the tenor of the certificates is not publically disclosed, Fitch believes that it is difficult to assign pure equity credit to them. Instead, Fitch views them as a quasi-loan loss reserve. LGSCs have the ability to offset any losses on loans to members, which have been proven out in the past, before any other capital instrument.

Financial Summary — National Rural Utilities Cooperative Finance Corp.

(USD 000, FYE 12 Months)

	5/31/17	5/31/16	5/31/15	5/31/14	5/31/13	5/31/12	5/31/11	5/31/10
Balance Sheet								
Assets								
Cash and Equivalents	166,615	204,540	248,836	338,715	177,062	191,167	293,615	513,906
Marketable Securities	92,554	87,940	84,472	55,177	31,632	59,045	58,601	58,607
Gross Finance Recv and Leases	24,367,044	23,162,696	21,469,017	20,476,642	20,305,874	18,919,612	19,330,797	19,342,704
(Reserves)	(37,376)	(33,258)	(33,690)	(56,429)	(54,325)	(143,326)	(161,177)	(592,764)
Net Finance Recv and Leases	24,329,668	23,129,438	21,435,327	20,420,213	20,251,549	18,776,286	19,169,620	18,749,940
Other Earning Assets	382,962	504,750	682,828	750,656	875,183	185,827	201,122	216,650
Restricted Cash	21,806	4,628	26,087	39,873	47,499	47,497	53,352	61,371
Derivative Assets	49,481	80,095	115,276	209,759	257,878	296,036	343,760	373,203
Property Plant and Equipment	122,260	112,563	110,540	107,070	104,508	102,770	88,794	55,682
Goodwill and Other Intangibles			47,071	42,058	38,949	43,515	41,714	46,562
Other Assets	40,346	146,246	142,693	269,222	287,391	249,192	311,044	112,956
Total Assets	25,205,692	24,270,200	22,893,130	22,232,743	22,071,651	19,951,335	20,561,622	20,143,215
Liabilities								
Commercial Paper	1,927,849	1,507,942	1,721,116	2,831,946	2,861,323	2,473,158	2,716,645	1,892,520
Other Short-Term Borrowings	1,415,051	1,430,906	1,406,638	2,567,448	4,858,160	2,020,276	3,126,279	2,713,841
Secured Term Debt	15,145,818	14,347,801	8,708,727	7,024,191	5,277,692	6,914,183	6,696,822	5,998,802
Senior Unsecured Debt	2,809,776	3,125,802	7,578,813	6,279,740	5,418,741	5,237,784	4,596,427	6,055,695
Subordinated Debt	742,274	742,212	400,000	400,000	400,000	186,440	186,440	311,440
Total Interest Bearing Liabilities	22,040,768	21,154,663	19,815,294	19,103,325	18,815,916	16,831,841	17,322,613	16,972,298
Accrued Liabilities and Accounts Payable	137,476	132,996	123,697	118,381	144,945	161,817	194,859	214,072
Other Liabilities	509,618	721,353	536,909	519,146	570,303	744,178	555,629	559,363
Total Liabilities	22,687,862	22,009,012	20,475,900	19,740,852	19,531,164	17,737,836	18,073,101	17,745,733
Hybrid Capital and Equity								
Maximum Allowable Fitch Grossed-Up Equity	3,555,683	3,193,003	2,090,476	3,461,423	3,556,783	3,089,131	3,478,601	3,343,906
Minority Interest	28,852	26,086	27,464	26,837	11,790	7,592	11,786	10,186
Paid in Capital	1,419,025	1,443,810	1,505,444	1,521,517	1,729,226	1,722,744	1,801,212	1,810,715
Retained Earnings/(Deficit)	1,056,778	790,234	880,442	939,888	791,090	473,964	665,765	568,577
Accum other Comp Income/(Loss)	13,175	1,058	4,080	3,649	8,381	9,199	9,758	8,004
Total Shareholder's Equity/(Deficit)	2,488,978	2,235,102	2,339,766	2,465,054	2,528,697	2,205,907	2,476,735	2,387,296
Total Liabilities and Shareholder's Equity	25,205,692	24,270,200	22,893,130	22,232,743	22,071,651	19,951,335	20,561,622	20,143,215
Income Statement								
Net Interest Income								
Interest Income	1,036,634	1,012,636	952,976	957,540	955,753	960,961	1,008,911	1,043,635
(Interest Expense)	(741,738)	(681,850)	(635,684)	(654,655)	(692,025)	(761,778)	(841,080)	(912,111)
Net Interest/Lease Revenue	294,896	330,786	317,292	302,885	263,728	199,183	167,831	131,524
(Loan Loss Provision)	(5,978)	646	21,954	(3,498)	70,091	18,108	83,010	30,415
Net Interest/Lease Revenue after Provision for Loan Losses	288,918	331,432	339,246	299,387	333,819	217,291	250,841	161,939
Other Income								
Fee Income	19,713	21,785	36,783	17,762	38,181	17,749	23,646	17,711
Other Revenue	93,154	(316,740)	(317,147)	(47,915)	83,946	(304,117)	(46,225)	3,467
Net Operating Income	401,785	36,477	58,882	269,234	455,946	(69,077)	228,262	183,117
Total Expenses	87,982	87,936	77,400	74,304	95,110	82,327	75,720	72,866
PreTax Income	313,803	(51,459)	(18,518)	194,930	360,836	(151,404)	152,542	110,251
Income (Tax)/Benefit	(1,704)	(57)	(409)	(2,004)	(2,749)	2,607	(1,327)	296
Minority Interest in Earnings/(Loss) of Subsidiary	(2,193)	1,863	(105)	(2,859)	(4,328)	4,070	(1,789)	(235)
Net Income/(Loss)	309,906	(49,653)	(19,032)	190,067	353,759	(144,727)	149,426	110,312
Supplemental Information								
Average Assets	24,737,946	23,581,665	22,562,937	22,152,197	21,011,493	20,256,479	20,352,419	20,562,960
Average Earning Assets	24,506,343	23,246,473	22,086,152	21,549,157	20,420,199	19,670,318	20,065,363	20,626,422
Average Commercial Paper	1,717,896	1,614,529	2,276,531	2,846,635	2,667,241	2,594,902	2,304,583	1,717,226
Average Int Bearing liabilities	21,597,716	20,484,979	19,459,310	18,959,621	17,823,879	17,077,227	17,147,456	17,435,829
Average Common Equity	2,362,040	2,312,434	1,987,729	2,496,876	2,367,302	2,341,321	2,432,016	2,318,144
Average Preferred Equity (Allowable)								
Average Total Equity	2,362,040	2,312,434	1,987,729	2,496,876	2,367,302	2,341,321	2,432,016	2,318,144

Source: Company reports, Fitch

The ratings above were solicited and assigned or maintained at the request of the rated entity/Issuer or a related third party. Any exceptions follow below.