

Criteria | Financial Institutions | Fixed-Income Funds:

Fund Credit Quality Ratings Methodology

June 26, 2017

(Editor's Note: This criteria article has been superseded by "Methodology For Determining Ratings-Based Inputs," published on July 26, 2024, except in jurisdictions that require local registration.)

SCOPE AND OVERVIEW

1. S&P Global Ratings' methodology for assigning fund credit quality ratings (FCQRs) to fixed-income funds provides additional transparency to help market participants better understand our approach and enhances the forward-looking nature of these ratings.
2. An S&P Global Ratings fund credit quality rating, also known as a "bond fund rating," is a forward-looking opinion about the overall credit quality of a fixed-income investment fund. FCQRs, identified by the 'f' suffix, are assigned to fixed-income funds, actively or passively managed, typically exhibiting variable net asset values. They reflect the credit risks of a fund's portfolio investments, the level of a fund's counterparty risk, and the risk of a fund's management ability and willingness to maintain current fund credit quality. Unlike traditional credit ratings (e.g., issuer credit ratings), an FCQR does not address a fund's ability to meet payment obligations and is not a commentary on yield levels. Funds that benefit from guarantees at the fund level (as opposed to the asset level) are not in scope of these criteria.
3. FCQRs are accompanied by fund volatility ratings (i.e., 'Af/S3')--when fund volatility ratings can be assigned--to communicate our opinion about certain risks not addressed by FCQRs (see "Fund Volatility Ratings Methodology," published June 26, 2017).

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- These criteria address the fundamentals set out in "Principles Of Credit Ratings," published on Feb. 16, 2011.

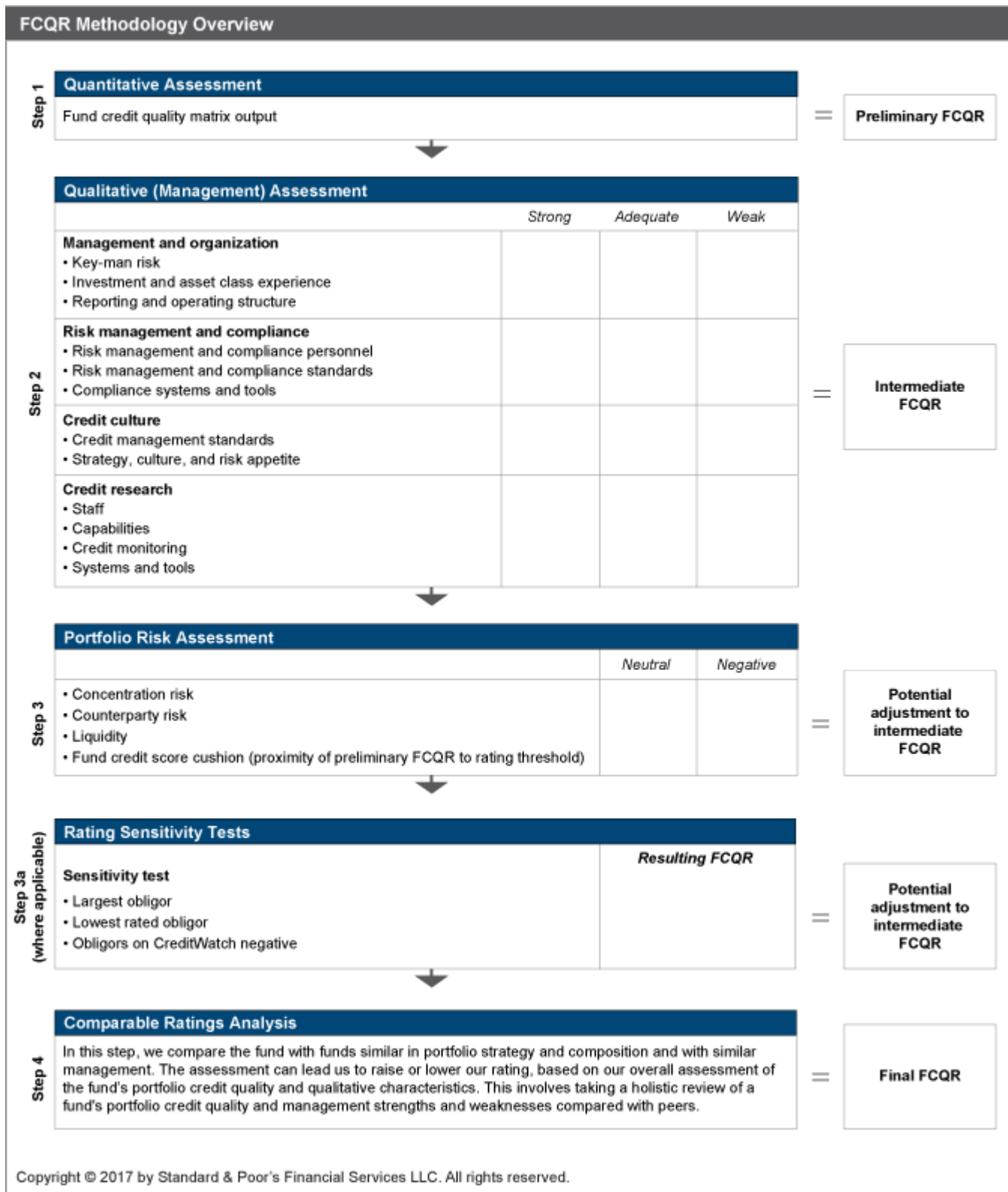
METHODOLOGY

4. We determine an FCQR in four steps (see chart). We first determine a preliminary FCQR through a quantitative assessment of a fund's portfolio credit risk. The assessment reflects the weighted

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average credit risk of the portfolio of investments, including those made through repurchase agreements. We include investments originated through derivative agreements, such as credit default swaps, when they are intended to replicate the risk of credit-based investments, such as corporate bonds. In certain circumstances, we will also include the market value of derivatives, such as interest rate and currency swaps. These are collectively referred to as "assets."

5. To calculate a fund's portfolio credit risk (credit score), the asset credit factors in table 1 are applied to (weighted by) the aggregated percentage of investments held at each rating level and are further differentiated by remaining maturity. The sum of the factors weighted by portfolio exposure results in the fund's credit score, which we then compare to the thresholds applicable to each fund rating level in table 3. The factors in the fund credit quality matrix are informed by our historical default and transition data of long-term and short-term ratings.
6. We then consider two assessments to determine the intermediate FCQR. The first, the management assessment, can result in an FCQR that is below the preliminary FCQR if any management assessment category is "weak." The management assessment's four categories are management and organization, risk management and compliance, credit culture, and credit research. The second assessment, the portfolio risk assessment, focuses on four indicators: counterparty risk, concentration risk, liquidity, and fund credit score cushion (the proximity of the preliminary FCQR to a fund rating threshold). If any portfolio risk indicator is "negative" and we believe it could affect fund credit quality within 12 months, we apply rating sensitivity tests. These assessments--management and portfolio risk--could result in an intermediate FCQR that is below the preliminary FCQR.
7. In the final step, we perform a comparable rating analysis and contrast a fund with other funds that have similar portfolio strategy and composition. Here we focus on a holistic view of the fund portfolio's credit quality and characteristics relative to its peers. This could result in a final FCQR that is higher or lower (by up to one notch) than the intermediate FCQR.



Quantitative Assessment: Fund Credit Quality Matrix

8. The quantitative assessment reflects a weighted average of the credit quality of a fund's investments. The credit factors (see table 1) are applied to (weighted by) the aggregated percentage of investments (whose exposure amounts are generally based on reported market value) held at each rating level and are further differentiated by remaining maturity. This typically includes all securities, repurchase agreements, synthetic investments, and cash and bank deposits. The sum of the factors weighted by portfolio results in a fund's credit score, which we then compare to the thresholds applicable to each fund rating level in table 3 to determine the preliminary FCQR.
9. When a passively managed target maturity fund's maturity date is within one year, we would typically not raise the FCQR to reflect an improving weighted average of the credit quality of a fund's investments. This is because the improving composition of the fund no longer reflects the long-term investment strategy, given the fund is winding down and proceeds of maturing underlying investments are held in cash or cash-equivalent investments. In cases where we observe deterioration in the weighted average credit risk of the investment portfolio within a year of maturity, we reflect this in our FCQRs of these funds, since deterioration in weighted average credit risk within a year of maturity is not typical and may reflect possible weaknesses in the credit quality and strategy of the fund.
10. We may assume a lower preliminary FCQR than indicated in table 3 when our forward-looking view of the portfolio's credit quality (that could be based on a hypothetical portfolio, which may be indicative of the fund's future strategy) may differ from the current preliminary FCQR. For example, when a portfolio is positioned with a short duration profile (i.e., qualifying for lower credit matrix inputs), we may lower the preliminary FCQR according to our forward-looking expectations for the portfolio's strategy, which may include an extension of the duration and/or a weakening credit profile. Because portfolio assets may be actively traded, typically we would not adjust our preliminary FCQR each time the portfolio changes. We instead consider the portfolio strategy to inform our long-term view where appropriate.

Table 1

FCQR Asset (Investment) Credit Factors

Long-term credit rating input	Short-term credit rating input	Maturity			
		< = 31 days	> 31 and <= 92 days	> 92 and <= 365 days	> 365 days
AAA	A-1+	1	2	7	10
AA+	A-1+	1	2	7	25
AA	A-1+	1	2	7	40
AA-	A-1+	1	2	7	70
A+	A-1	10	20	40	100
A	A-1	10	20	40	130
A-	A-2	25	45	120	220
BBB+	A-2	25	45	120	310
BBB	A-2	25	45	120	400
BBB-	A-3	125	125	300	800
BB+	B	1,200	1,200	1,200	1,200
BB	B	1,600	1,600	1,600	1,600

Table 1

FCQR Asset (Investment) Credit Factors (cont.)

Long-term credit rating input	Short-term credit rating input				
		< = 31 days	> 31 and < = 92 days	> 92 and < = 365 days	> 365 days
BB-	B	3,700	3,700	3,700	3,700
B+	B	5,800	5,800	5,800	5,800
B	B	8,000	8,000	8,000	8,000
B-	B	15,000	15,000	15,000	15,000
CCC+	C	22,000	22,000	22,000	22,000
CCC	C	30,000	30,000	30,000	30,000
CCC-/CC/C/D	SD/D	37,500	37,500	37,500	37,500

Applying the credit factors

11. A fund's investments are categorized by credit quality and remaining maturity. We base the credit factors on credit quality (ratings) and maturities. Maturities are differentiated into four buckets (see table 1):
 - 31 days or less (one month);
 - Greater than 31 days but less than or equal to 92 days (three months);
 - Greater than 92 days but less than or equal to 365 days; and
 - Greater than 365 days.

12. To calculate a fund's credit score, we first multiply the factor associated with the rating and maturity of the investment by the percent weight of each fund investment at reported market value, unless a hedge applies or is originated as a derivative (see Appendix A for additional guidance). By rating, we refer to any rating assigned by S&P Global Ratings or rating input, as described in Appendix B. The weighted factor for each investment is summed to determine the fund credit score.

13. For example, a fund consists of four assets (see table 2). The fund credit score of the investments is $(2) \times (.50) + (7) \times (.35) + (130) \times (.10) + (30,000) \times (.05) = 1,516$.

Table 2

Example: Determining A Fund Credit Score

% of portfolio	Rating	Maturity	Factor	Contribution to score
50	AAA	90 days	2	1.00
35	AA	180 days	7	2.45
10	A	2 years	130	13.00
5	CCC	30 days	30,000	1,500.00
Fund credit score =				1,516.45

Applying the thresholds to determine the preliminary FCQR

14. To determine the preliminary FCQR on a fund, we compare the fund credit score of the investments to the fund rating thresholds in table 3. A fund credit score has to be less than or equal to the threshold at a given rating level to be assigned that preliminary FCQR (i.e., the preliminary FCQR can be lower than or equal to the highest rating for the fund credit score in table 3. See examples in the "Quantitative Assessment: Fund Credit Quality Matrix" section). In our example above, the fund credit score of the assets, 1,516, falls between the 'BB+f' threshold of 1,500 and the 'BBf' threshold of 2,865. If a weighted average results in a decimal, we round to the nearest integer. For example, a weighted average of 2,865.49 would be rounded to 2,865 and a weighted average of 2,865.50 would be rounded to 2,866. The preliminary FCQR is 'BBf' because it exceeds the threshold for 'BB+f'.

Table 3

Fund Rating Thresholds

Max score	Rating
18	AAAf
37	AA+f
58	AAf
91	AA-f
120	A+f
184	Af
290	A-f
360	BBB+f
640	BBBf
1,125	BBB-f
1,500	BB+f
2,865	BBf
5,220	BB-f
7,200	B+f
12,250	Bf
19,350	B-f
26,250	CCC+f
33,000	CCCf
> 33,000	CCC-f

Repurchase and reverse repurchase agreements and credit default swaps

15. We assess a fund's exposure to repurchase agreements and credit derivatives and the credit quality of that exposure. Repurchase and reverse repurchase agreements can provide financing and additional return, but they can also increase a fund's credit risk. These transactions are quantified in the credit matrix depending on the type of transaction and parties involved when we believe it is appropriate to reflect the asset as part of the fund's asset portfolio. It may reflect significant credit exposure that is meaningful to the fund's credit quality. Similarly, funds that lend securities introduce the need to maintain the securities in the credit score.
16. Finally, with regard to credit default swaps (and other derivative agreements such as total return swaps), a fund may enter into transactions that do not replicate a "long" credit position, but rather "short" credit risk positions or those that hedge existing investments. We add their value, when positive, to the credit score when the sum of these transactions represents a significant portion of the portfolio, and this is a strategy the fund intends to maintain. In Appendix A, we provide more detail on treatment of repurchase and reverse repurchase agreements and credit default swaps.

Interest rate and currency derivatives (swaps)

17. When funds employ derivatives, such as interest rate and foreign currency swaps, they are typically excluded from the matrix calculation. However, if the derivatives represent a significant

asset to the portfolio, or if the ratings on the counterparties to these transactions are weak, typically two categories lower than the fund rating, the positive market value, if any, is input into the fund credit quality matrix using the swap maturity and the rating on the counterparty to determine the factor. In Appendix A and the footnote to table 8, we provide more detail on the treatment of interest rate and currency derivatives.

Mapping of long-term and short-term ratings

18. Table 1 identifies the factors we apply to investments of varying maturity and credit quality. When an issuer has long- and short-term ratings that are different from the mapping in table 1 (e.g., 'A+/A-1+'), we apply the factor we believe is most representative of the credit quality. The short-term rating typically determines which factor to apply when maturities are less than one year (for examples, see Appendix B).
19. For an investment assigned a short-term rating and whose issuer does not have a long-term issuer credit rating, we assume the lowest long-term rating to which the short-term rating maps. For example, for an issue whose short-term rating is 'B' and whose issuer does not have a long-term issuer rating, we apply the factor associated with the long-term rating of 'B-1'.

Credit factors and fund rating thresholds for defaulted and nearly defaulted assets

20. We do not differentiate credit factors at rating levels 'CCC-' and below or fund ratings thresholds at 'CCC-f' and below. We apply the same factor to assets whose credit quality is 'CCC-', 'CC', 'C', or 'D'. Rather than differentiating the impact on the FCQR of these asset ratings solely through quantitative assessment, we take a qualitative approach. If the credit score exceeds the 'CCCf' threshold:
 - We assign a 'CCC-f' rating to funds that significantly invest in 'CCC-' rated investments.
 - We assign a 'CCf' rating to funds that significantly invest in 'CC' and/or 'C' rated investments.
 - We assign a 'Df' rating to funds that significantly invest in 'D' and/or 'SD' rated investments.
21. Funds that significantly invest in 'CCC-' assets but whose preliminary FCQR indicates a fund rating higher than 'CCC-f' may still be assigned a 'CCC-f' rating based upon a qualitative assessment. For all of these, we define significantly as typically more than half of the portfolio.

Rating inputs and withdrawn ratings

22. We typically rely on our ratings on assets and counterparties and reference those ratings when determining asset credit factors. When a fund invests in an asset that S&P Global Ratings does not rate, we apply Appendix B to determine a ratings input to the fund credit quality matrix.
23. If we withdraw our rating on a 'AA-' or higher rated government-related entity (GRE) and whose likelihood of support was deemed "concentration eligible" (see Appendix D) up to and including the withdrawal date, we apply our last rating for 90 calendar days to any existing portfolio investment in that GRE. After 90 calendar days, we consider such investment unrated and apply Appendix B to determine a rating input. We do so because we are less certain the role and link will remain constant as time passes.
24. For all other withdrawn ratings, we follow the ratings input guidance described in Appendix B.

Asset maturities

25. **All assets except structured finance assets.** We use the legal final maturity of an asset when determining the applicable factor in the credit matrix. When a fund invests in a pooled strategy, such as a money market fund or mutual fund, we use the weighted average life (WAL) of the portfolio to determine the applicable factor in the credit matrix.
26. **Structured finance assets.** To determine maturities for asset-backed securities and mortgage-backed securities to be applied in the credit matrix, we assume the most recent available WAL as sourced from nationally or internationally recognized providers of such information.

Management of fund credit quality metrics

27. In addition to, and separate from the management assessment, we view a manager's inability to manage to the quantitative thresholds associated with the preliminary FCQR to be representative of weak operating structure. This weakness is addressed in the "Breaches and cures" section.

Funds with no assets

28. To assess the preliminary FCQR for a new fund with no assets, we request fund management to provide a proxy fund or hypothetical portfolio with security descriptions, CUSIPs, ratings, and prices to serve as a representation of the fund's future strategy when it is up to scale. Existing holdings for proxy funds and manager performance gained with other funds may inform our quantitative and qualitative assessments. The following approaches typically apply, conditioned by availability, relevance, amount of historical information, the fund's portfolio guidelines, existing holdings, model portfolio, and the management's track record:
 - When we believe there is a comparable proxy fund, designated benchmark or index portfolio, or hypothetical portfolio (with similar credit, sector, and maturity as the fund seeking an FCQR), we would typically assign our preliminary FCQR based on the representative proxy fund, hypothetical portfolio, or reference index history.
 - We cannot assign a preliminary FCQR solely based on portfolio guidelines and management representation.

Breaches and cures

29. We define an active breach as a specific action management takes that results in the lowering of the preliminary FCQR. Breaches and cures are assessed relative to the fund's preliminary FCQR before giving effect to the management or portfolio risk assessments or holistic analysis. We provide an example of application of breaches and cures in Appendix A.
30. An example of an active breach is the purchase of an asset whose rating causes the fund's credit score to be weaker than the rating threshold. We discuss breaches with management before determining whether we believe an active breach has occurred.
31. We define a passive breach as actions not in management control. For example, we consider a breach to be passive when an asset is downgraded and that results in a breach of the preliminary FCQR rating threshold.

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32. The determination of whether a breach is active or passive may be case specific based on our assessment of the sequence of events. Irrespective of whether cures are adopted, the occurrence of multiple breaches over a short time horizon indicates portfolio management capabilities that leave little cushion relative to the fund rating threshold, and we would lower the FCQR by one notch to reflect that management approach.
33. A 30-day cure period applies for active breaches. A 90-day cure period applies for passive breaches. If not cured, the fund rating would be reviewed. We would lower the FCQR as described in the example in the Appendix.
34. If a fund has more than three active, but then cured, breaches during the prior 12 months, we will lower the FCQR by one notch (or more if the breaches are significant), as described in the example in the Appendix. In addition, if a fund has persistent passive, but then cured, breaches, typically after five or more occurrences in the prior 12 months, we will lower the FCQR by one notch (or more if the breaches are significant). If a fund manager has notified us that the fund's strategy has shifted to a different credit quality level, we would not assume breaches have occurred. Instead, we would reflect the new strategy through the management assessment, most likely through credit culture, or the portfolio risk assessment, or a hypothetical preliminary FCQR based upon a model portfolio that reflects the new strategy.
35. Generally, once a fund has been downgraded due to breaches, we will maintain the lower fund credit quality score for a minimum of six months and typically longer before we would initiate a review to consider upgrading the fund.

Management Assessment

36. We assess a fund's management to determine its ability and willingness to maintain the FCQR (or the preliminary FCQR for newly rated funds). We look at four categories: management and organization, risk management, credit culture, and credit research. Each category is assessed holistically as "strong," "adequate," or "weak" (see tables 4-7). We would not expect a fund or its management to demonstrate all of the characteristics at any given assessment level; rather, we assess each fund by looking at the variety of factors cited and use a preponderance of factors to determine the overall assessment. The individual components may or may not be equally weighted and are considered on a case-by-case basis, reflecting the extent to which we believe they may enhance or detract from fund credit quality or volatility.
37. If any category is "weak," the intermediate FCQR is at least one notch lower than the preliminary FCQR and may be more than one notch lower if a weakness is significant.
38. If multiple categories are "weak" or we believe a single weak category could significantly lower portfolio credit quality, the intermediate FCQR would be at least two notches below the preliminary FCQR.
39. When no category is below "adequate," the FCQR is unchanged by management. If one or more categories are assessed "strong," and none are "weak," a fund's management strength may factor in the final step, the comparable ratings analysis.
40. We typically evaluate management at the fund investment manager level. Management's ability is assessed relative to its funds' strategies and its ability to execute in each category of the management assessment. A "weak" assessment of a management category is likely to affect the ratings on multiple funds managed by a sponsor. We do not assess credit culture or credit research of funds that are passively managed against an index.

Management and organization

41. A fund's investment management team is assessed for the presence of key-man risk, investment and asset class experience, and reporting and operating structure.

Table 4

Management And Organization

Components	Strong	Adequate	Weak
Key-man risk	Multiple people are capable of managing the fund. The fund managers use a team-based approach or are cross-trained. The loss of key personnel would not impair the fund's operations.	At least one person is capable of managing the fund if the portfolio manager leaves. Either a team-based approach exists or staff members are cross-trained so that a departure by key personnel would not impair the fund's operations.	There is no backup fund manager or resources within the team to effectively manage the fund. A departure of key personnel would impair the fund's operations.
Investment and asset class experience	The fund managers have considerable relevant experience pertinent to the overall strategy of the fund. Relevant experience pertains to sectors (e.g., utilities) and asset classes (e.g., fixed-income securities, municipal securities, asset-backed securities, residential mortgage-backed securities, commercial mortgage-backed securities, preferred shares, etc.). It also pertains to investment strategies (i.e., exchange-traded funds, use of leverage, and derivatives). Generally, we view considerable experience to be more than five years or experience through an economic cycle.	The fund managers have adequate experience in various sectors, asset classes, and investment strategies pertinent to the overall strategy of the fund.	The fund managers have limited experience in sectors, asset classes, or investment strategies pertinent to the overall strategy of the fund that could reduce the effectiveness of portfolio management. Generally, we view experience of less than one year as limited.
Reporting and operating structure	The portfolio management team has a clear and distinct reporting structure that is separate from the credit research team. The firm has critical supporting structures. Front office structure typically includes a trading team, an investment management team, and a sales and marketing team. Middle office structure typically includes a pricing and valuations team. Back office structure typically includes a systems and IT team.	The portfolio management team can demonstrate a sufficiently clear and distinct reporting structure or similar check and balance between trading and credit research decision making. The firm has supporting functions that are commensurate with the investment activities.	The portfolio management team does not have sufficiently clear or distinct reporting structures, or an effective method to ensure sufficient check and balance between trading and credit research decision-making.

Risk management and compliance

42. In risk management and compliance, we assess fund governance, operational risk controls, and regulatory compliance. Examples of activities for which risk management and compliance standards and policies are addressed include trade ticket verification, risk escalation, pricing and business recovery, portfolio monitoring, portfolio stress testing, and pre-trade and post-trade compliance systems. We exempt certain funds from stress testing. We consider stress tests useful to gauge a fund's credit quality exposure to one or more sovereign, nonsovereign, or

counterparty exposure. However, when portfolio credit quality is clearly linked to the rating on one sovereign, counterparty, or obligor, the stress test would not further enhance our assessment, and we would not incorporate the presence or utility of a credit-based stress test in our assessment. Similarly, we would not expect to review stress testing for funds investing solely in nonsubordinated investments whose obligors are rated 'AA' or higher. In each example, we would not expect to review stress testing when sufficient standards and policies exist to verify that they are operating within the fund's objectives. Where they do not, the category is assessed as "weak."

Table 5

Risk Management And Compliance

Components	Strong	Adequate	Weak
Risk management and compliance personnel	The investment manager has strong risk-management capabilities and culture, as demonstrated through the following: evidence of effective challenge when risk tolerance has been breached and track record of resolution typically in favor of risk limits; a compliance team (dedicated compliance personnel) that has a separate reporting line to senior management (e.g., the board, CEO, etc.); and the number of and organization of staff are consistent with the size and complexity of the business.	The investment manager has adequate risk-management capabilities and culture, as demonstrated through the following: evidence of effective challenge when risk tolerance has been breached and track record of resolution; awareness of risk limits; a compliance team that has a reporting line to senior staff members; and risk management team and compliance duties of staff are adequate for the size and complexity of the business.	The investment manager does not have adequate risk-management capabilities or culture, or it does not have an adequate compliance team or risk-management resources in place. Compliance is not adequate when it is small relative to the size or lacking in experience relative to the complexity of the business.
Risk management and compliance standards	There are multiple layers of risk-management and compliance oversight. The respective policies and procedures are documented and reviewed annually or as needed, driven by market events. Stress testing is comprehensive. A comprehensive risk escalation procedure exists.	Policies and procedures for risk-management and compliance oversight tailored to the nature and complexity of the portfolio strategy are in place. The policies are documented and reviewed regularly (generally every two to three years). A sufficient number of risk factors and tolerances are monitored. Stress testing is sufficient relative to the strategy of the fund. An adequate risk escalation procedure is in place.	Minimal risk-management and compliance functions exist, leading to insufficient monitoring of risk factors; there is inadequate documentation or review of compliance standards and risk-management guidelines; suitable stress testing is not performed; or management repeatedly breaches the quantitative threshold (applicable to the preliminary FCQR).
Compliance systems and tools	The management team has robust portfolio monitoring tools to monitor the relevant risk factors of the fund. A strong pre-trade and post-trade compliance system or procedure is in place to enable the manager to monitor and manage compliance with the fund's guidelines.	The management team has sufficient portfolio monitoring tools to monitor the relevant risk factors of the fund. A functional compliance system or sufficient set of procedures is in place to monitor and manage to the fund's guidelines.	The management team has substandard portfolio monitoring capabilities, systems, or procedures to examine and monitor the relevant risk factors of the fund.

Credit culture

- 43. Credit culture refers to the extent that a fund's management develops and applies rigorous credit management standards. It also addresses a portfolio management team's resources and policies and the extent to which the team's objective is to efficiently manage the counterparty and credit risks of the fund's investments consistent with the current fund credit profile. A significant change in investment strategy will strengthen or weaken this assessment immediately for managers that

have long (demonstrable) track records and after an observation period of at least three to six months for managers without a long track record.

Table 6

Credit Culture

Components	Strong	Adequate	Weak
Credit management standards	Management has comprehensive written policies and processes in place to ensure that credit evaluations are consistently applied. The policies and processes are audited and updated at least annually. Incentives and policies are clearly defined and strongly aligned.	Management has sufficient policies and processes in place to ensure that credit evaluations are consistently applied. These policies and processes are periodically reviewed. Incentives and policies are aligned.	Management has minimal policies and processes to ensure that credit evaluations are conducted; management has minimal policies and processes to ensure consistency of the credit evaluations; management has no procedure to update these policies and processes; or employee incentives and policies are not aligned.
Strategy, culture, and risk appetite	The firm's credit risk appetite is embraced by portfolio managers, traders, and credit analysts. They deploy a consistent approach (i.e., top down, bottom up, both) to credit risk management that is consistent with each fund's objectives and preliminary FCQR (and/or FVR if one is assigned). Acceptable tolerances are clearly identified and adhered to. Where applicable, portfolio managers and credit analysts share information on investments they own or are looking to own. The investment strategy has changed or we believe will change to improve fund credit quality.	There is an adequate understanding of the firm's risk appetite across portfolio and credit analysts. The team generally follows similar credit principles and investment criteria across the organization. Any divergence from established tolerances is minor and does not affect its ability to manage to a specific FCQR and/or FVR (if one is assigned). There is no change to fund credit quality due to investment strategy.	There is a lack of understanding of the firm's risk appetite across the investment management team and credit analysts. Consistent and sizable deviation from established tolerance or lack of documented tolerance may lead to a weaker FCQR and/or FVR (if one is assigned). Fund credit quality has deteriorated or will deteriorate because of a change in investment strategy.

Credit research

- 44. Credit research reflects the depth and quality of a manager's credit analysis. We review the processes for credit evaluation, approval, and monitoring and examine the purpose, focus, and consistency of its credit policies. We evaluate the credit process by reviewing the credit research team, analysts' sector and industry experience, independent analysis, and resources and tools. Specificity of roles and responsibilities within the credit team is an indicator of a robust credit process. The clarity and logic of the standard operating procedures is another facet of the credit process review. We assess the use of technology, the preservation and communication of credit analyses, and the use of external investment research and advisers to supplement, or compensate for gaps in, internal research.

Table 7

Credit Research

Components	Strong	Adequate	Weak
Staff	There is a deeply experienced credit research team with dedicated credit research analysts capable of conducting independent analysis.	The credit research team has average industry experience and staff is capable of meeting the investment strategy and objectives.	There is limited independent credit research conducted, which may lead to a reduced ability to effectively manage the credit risk of the portfolio.
Capabilities	The credit research team uses external and internal issuer fundamental research for credit analysis including input from multiple market perspectives.	The credit research team conducts basic, internal issuer credit analysis with reliance on outside research to supplement its internal analysis. The existing process is sufficient with respect to fund investments.	There is little or no independent credit research and analysis, and lack of capabilities could leave the fund vulnerable to downgrade due to erosion of credit quality.
Credit monitoring	All credit research files are maintained in a central location and are reviewed at least annually with issuer ratings monitored daily.	Credit research files are maintained and updated when necessary based on issuer-related events.	There are limited records of credit information or research files; or credits are not monitored in a consistent manner to capture changes in credit quality. If there are no records kept or no monitoring, this is a significant weakness.
Systems/tools	The credit research team utilizes credit and/or other modeling techniques. Examples of these techniques include assessing creditworthiness derived from market signals to complement fundamental analysis and/or modeling of forward credit risk commensurate with the level of risk the fund takes. There is detailed credit analysis that is both quantitative and qualitative.	The depth and breadth of credit analysis and tools is sufficient to research and review the investment strategy of the fund.	Valid systems or tools are not in place to support sufficient credit research functionality.

Portfolio Risk Assessment

45. The portfolio risk assessment has four indicators: concentration risk, counterparty risk, liquidity, and fund credit score cushion. (Cushion refers to the proximity of the fund credit score to the fund's assigned rating threshold, per table 3.) These indicators are gauges of potential rating volatility and inform our forward view of the rating. Typically, we consider three months of portfolio reports when assessing any portfolio risk category to ensure we observe a sustained trend as opposed to a brief change in portfolio risk.
46. We assess each indicator as either neutral or negative. Unless we determine that the weakness associated with a "negative" indicator is not expected to persist, or we believe that the manager will effectively manage the risk, the portfolio risk indicator is "negative." For example, we would assess fund credit score cushion as "neutral" even if the credit score is close to the fund rating threshold when we believe a manager will maintain a narrow but stable cushion.
47. If any indicator is "negative," the portfolio risk assessment is "negative." If no indicators are "negative," the portfolio risk assessment is "neutral."
48. If we determine that the portfolio risk assessment is "negative," we apply rating sensitivity tests.

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The rating sensitivity tests assess the degree to which a fund's asset portfolio exposure to the fund's largest obligor, lowest credit quality obligor, and exposure to assets on CreditWatch with negative implications could lead to a fund downgrade. In each test, the asset(s) specified by the test are downgraded by one notch and the preliminary FCQR is recalculated.

49. If the largest obligor test scenario, or the two other scenarios, imply a fund rating lower than the intermediate FCQR (after incorporating the management assessment), we lower the FCQR to the lowest implied by the scenarios, unless it is more than three notches lower. The impact of the portfolio risk assessment is typically limited to three notches lower than the FCQR.
50. For funds that reflect unique risks, we may supplement these tests with others or modify the tests to better capture the funds' portfolio risks.

Table 8

Portfolio Risk Assessment

Indicators	Neutral	Negative
Issuer concentration risk	Management maintains a diversified fund with maximum single issuer concentration (as a percentage of total fund investments) at 10%, or 5% to the largest issuer rated 'BB+' or lower.	Management does not maintain a highly diversified fund. Maximum single issuer concentration (as a percentage of total fund investments) to issuer(s) rated 'BBB-' or higher is typically greater than 10%, or 5% to the largest issuer(s) rated 'BB+' or lower.
Derivative counterparty creditworthiness	1. Generally counterparties are rated 'BBB-' or higher. 2. For funds engaged in speculative-grade credit strategies, counterparties are generally rated at or above the strategy target credit quality level. 3. For funds with investment-grade credit strategies, counterparties are rated within two categories of the fund rating (such as 'A' category counterparties for 'AAA' funds inclusive of 'A-')*.	1. Generally counterparties are rated below 'BBB-'; or 2. For funds engaged in speculative-grade credit strategies, counterparties are generally rated at below the strategy target credit quality level.
Liquidity	The fund maintains a liquidity policy that enables it not to be a forced seller of illiquid assets to meet redemption needs if redemptions are possible. Typically, this is neutral when the fund invests primarily (at least 80%) in investments that could be sold if need be due to active management decision or passive management rebalancing.	The fund routinely invests greater than 20% of its asset portfolio in illiquid investments that may prevent the timely sale of assets during periods of moderate stress and arrival of fund redemption requests or if the fund does not offer redemption rights, due to portfolio rebalancing if passively managed.
Fund credit score cushion	Preliminary FCQR is not within 10% of the lower fund rating threshold.	Preliminary FCQR is within 10% of the lower fund rating threshold.

*If counterparties are not within two categories of the fund rating, in addition to a negative indicator assessment, the positive market value, if any, is input in the fund credit quality matrix at the rating of the counterparty.

Issuer concentration risk

51. We assess concentration in the investment portfolio to measure a fund's potential exposure to a change in FCQR resulting from a change in the credit quality of concentrated investment exposure to a single issuer.
52. The indicator is "neutral" if we believe the issuer concentration exposure does not limit the manager's ability to manage the credit quality of the fund. The indicator is "negative" if we believe the issuer concentration exposure limits the manager's ability to manage the credit quality of the fund. Typically, consistent or regular exposure in excess of 10% to one or more investment-grade issuers or 5% to one or more speculative-grade issuers is deemed "negative." An example where the 5% threshold would not typically apply is speculative-grade funds or speculative-grade

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sovereign funds, which are, by definition, largely invested in speculative-grade issuance or speculative-grade sovereign issuance and often in concentrations greater than 5% because of limited issuance from which to choose.

53. Some funds are designed to be concentrated to certain issuers--such as the U.S. government. For these types of funds, the issuer concentration risk indicator is "neutral," since the fund rating is effectively linked to the sovereign. These types of funds already reflect the credit quality of sovereign and related issuers, such as sovereign government-related entities and supranational issuers. Similarly, the issuer concentration risk indicator is "neutral" for a fund that invests in multiple sovereign issuers and whose fund rating is not tied to any single sovereign issuer but whose issuers are rated 'AA-' or better.
54. In addition, we exclude investments with maturities of less than or equal to five business days from the issuer concentration aggregates. The short maturities of such exposures limit the fund's risk to a change in the issuers' credit quality, or to a manager's potential inability to sell those assets.

Derivative counterparty creditworthiness

55. The creditworthiness of counterparties engaged in interest rate or currency derivatives is typically not addressed in the fund credit quality matrix but instead through the portfolio risk assessment. The same would apply to credit derivative agreements when the fund buys protection from counterparties and that transaction, the short, does not represent a credit hedge of an existing fund investment (uncovered short).
56. For a fund whose investment strategy is targeted to assets rated 'BBB-' or higher, counterparty credit quality generally must be 'BBB-' or better for the indicator to be "neutral." This indicator is generally "negative" when counterparties are not within two rating categories of the preliminary FCQR. For example, the indicator is "neutral" when the preliminary FCQR is 'AAAF' and the fund transacts with counterparties that are rated in the 'A' category or higher, but is "negative" when the preliminary FCQR is 'AAAF' and the fund transacts with counterparties rated in the 'BBB' category or lower. For a fund with a speculative-grade credit strategy, the credit quality of counterparties is generally at the same level or higher than the fund's credit strategy for a "neutral" assessment.

Liquidity

57. We focus on liquidity risk to assess a fund's potential inability to manage its credit quality due to exposure to illiquid assets, not to address fund returns. The indicator is "neutral" if we believe the fund's exposure to illiquid assets does not limit the manager's ability to manage the credit quality of the fund. The indicator is "negative" if we believe the fund's exposure to illiquid assets is great enough to inhibit the manager's ability to sell assets if facing credit deterioration. Typically, exposure to illiquid/limited liquidity assets consistently in excess of 20% would mean we assess this indicator "negative," unless the fund's cash management or redemption policies mitigate its liquidity risk exposure. If a fund is passively managed, we assess whether it has sufficient liquidity to enable portfolio rebalancing without being forced to liquidate illiquid assets.
58. Examples of illiquid/limited liquidity assets include:
 - Complex securities (due to security structure or multiple dependencies),
 - Opaque securities (due to limited or nonpublic access to information),
 - Securities having limited or no market presence (evidenced by small issue size or issued

amounts, limited or no trading desks providing coverage, limited or no market analyst coverage providing actionable investment decision information, wider than average bid/offer spreads), and

- Securities whose maturities are no longer actively traded or are different from those actively traded, including nontransferable instruments, such as time deposits with no breaking clause prior to maturity date.

Fund credit score cushion

59. If the preliminary FCQR is within 10% of a fund rating threshold, we typically apply rating sensitivity tests to determine the fund's exposure to the possibility of a downgrade. An example of this would be a fund whose credit score is 30 and the fund rating threshold is 31. 10% of the threshold is 3.1 (we round to 3). A fund credit score of 29 or 30 results in a "negative" assessment, unless we believe the fund will effectively manage the risk of portfolio credit erosion.

Rating sensitivity tests (when applicable)

60. The rating sensitivity tests measure the potential change in the preliminary FCQR given three scenarios that measure a fund's concentration risk to: the largest obligor, the lowest-rated obligor, and obligors on CreditWatch negative. "Obligors" refers to all issues (investments) issued by an obligor (issuer), as described in our "Group Rating Methodology," published Nov. 19, 2013. In each test, if a short-term rating is assigned to an issue, we assume a one-notch downgrade to the long-term rating on the issuer and determine whether that lower long-term rating maps to the next short-term rating level (i.e., 'A-1' to 'A-2').
61. We do not apply rating sensitivity tests when the rating on a fund is clearly linked to a single sovereign issuer (for example, a U.S. government securities fund) or one supranational issuer, or other single obligor. Similarly, we do not apply rating sensitivity tests to a fund that invests in multiple sovereign issuers and has a rating that is not tied to any single sovereign issuer but whose issuers are rated 'AA-' or better. Rating sensitivity tests apply to funds that invest in more than one sovereign (for example, emerging market sovereign funds), supranational, or obligor, and the rating is not linked, and the condition for applying the tests has been met.
62. In the three stress scenarios, we exclude cash investments and equivalents. Cash and equivalents include unrestricted cash and highly liquid securities with less than or equal to five days in maturity. We also exclude exposures to funds that are regulated and are stable net asset value funds (government money market funds), even if we do not have access to the funds' portfolio details, because the funds' creditworthiness is tied to a highly rated government entity.
63. In the first test, we assume a one-notch downgrade of the largest obligor and apply the new credit factors in the fund credit quality matrix.
64. In the second test, we assume a one-notch downgrade of the lowest-rated obligor and apply the new credit factors in the fund credit quality matrix.
65. In the third test, we assume all obligors on CreditWatch negative are downgraded by one notch or to the rating we had said we could downgrade to when we placed the obligor on CreditWatch, and we apply the new credit factors in the fund credit quality matrix.
66. When a bond fund to which we assign an FCQR invests in other funds, and we have access to the underlying funds or funds' portfolio(s), we look to the underlying portfolio(s) and apply the three rating sensitivity tests and assess the impact on the fund to which we assign an FCQR. For example, if the fund to which we assign an FCQR invests in two funds, each of which owns two

assets, we stress the largest obligor and lowest-rated asset from each fund. We also stress each of the assets with ratings on CreditWatch negative.

67. If we do not have access to the underlying funds' portfolio(s), we apply the rating sensitivity tests to the underlying funds. For example, in the prior example, we would apply the tests to the larger concentration of the two underlying funds, the lowest rated of the two funds, and one or both of the funds, if the ratings are on CreditWatch negative. If the underlying funds are unrated, we apply Appendix B to determine the funds' creditworthiness when applying these tests.

Comparable Ratings Analysis

68. In the comparable ratings analysis, we compare a fund with funds that have similar portfolio strategies and composition, as well as similar management. This can lead to a final FCQR that is higher or lower than the intermediate FCQR, based on a holistic review of a fund's portfolio credit quality and management strengths and weaknesses. A positive assessment, supported by a strong management assessment, leads to a one-notch upward adjustment, a negative assessment leads to a one-notch downward adjustment, and a neutral assessment results in no change to the intermediate FCQR.

APPENDIX

A. Counterparty Analysis/Other Topics

1) Guarantees and group rating methodology

69. We do not apply "Guarantee Criteria," published Oct. 21, 2016, to funds because guarantees typically refer to an obligor's ability to pay interest and principal. The FCQR is not a comment on a fund's ability to pay interest or principal.
70. "Group Rating Methodology" usually does not apply to FCQRs at the fund rating level because asset managers typically manage these funds as third-party service providers.

2) Counterparties

71. Funds may engage in financial contracts, such as interest rate swaps, currency swaps, and futures with recognized exchanges and options (collectively referred to as derivatives), as well as other types of financial contracts such as repurchase agreements (collectively referred to as repo in the U.S.), reverse repurchase agreements (collectively referred to as "reverse repo" in the U.S.), and securities lending.

i) Interest rate and currency derivatives (swaps)

72. When a derivative (swap) is not intended to create credit exposure, but rather is used to manage fund returns, such as interest rate swaps or currency swaps, we typically do not include its value in the matrix. However, if the aggregate market value of interest rate or currency derivative (swap) positions represents a significant portion of a fund's overall assets (for example, more than 50%) and we believe this reflects the strategy of the fund, or the counterparty's credit quality is below the thresholds outlined in the portfolio risk assessment, we include the amount in the matrix. The

mark-to-market value of the exposure will be multiplied by the credit rating factor of the counterparty when we add these exposures to the fund credit score.

ii) Credit derivatives (credit default swaps)

73. Credit derivatives, such as credit default swaps and certain total return swaps, may result in synthetic long or short credit risk positions for the fund, or be used to hedge existing credit risk positions of the fund.
74. **Synthetic long.** Synthetic long risk positions are added to the portfolio and are incorporated in the overall credit score of a fund. When a manager sells credit protection, the total credit score increases by the notional amount of the exposure to the reference entity multiplied by the credit factor associated with the maturity of the contract and creditworthiness of the reference entity. We apply the notional amount to best replicate the physical asset it is intended to replicate.
75. **Uncovered synthetic short.** Uncovered synthetic short credit risk positions (those that do not represent a credit hedge of an existing fund investment) can, but typically do not, affect credit scores. We do not treat them as investments because the position is not intended to create credit risk exposure but is intended to generate or stabilize fund returns, similar to interest rate or currency derivatives. However, as with those derivatives, if short positions represent a significant portion of overall fund assets (when the mark-to-market is positive to the fund) and we believe this reflects the strategy of the fund, we add these positions to the total credit score. For calculation purposes, the mark-to-market of the derivative position (as opposed to notional value of the underlying exposure) will be multiplied by the credit rating factor of the counterparty (as opposed to reference entity). If the derivative is exchange-traded, we apply Appendix B to determine the rating input for the entity to which the fund has mark-to-market exposure.
76. **Credit default swaps used to hedge long credit risk exposure.** Purchasing credit derivatives to hedge securities held in the fund can reduce credit scores. If a fund purchases credit protection and holds an underlying position in the reference entity, and we believe the hedge is effective, the total credit score may be reduced. Our assessment of the effectiveness of the hedge considers the manager's approach to choice of swap mechanics in the credit default swap such as credit events, events of termination, settlement method, and choice of reference entity. We view hedges as a form of credit risk mitigation through credit substitution in which the creditworthiness of the hedge provider, the swap counterparty, is substituted for the creditworthiness of the reference entity.
77. **Hedging a physical asset.** When a hedge counterparty is rated higher than the physical asset, and the notional of the credit default swap exceeds the market value of the physical asset, the notional portion of the swap that covers the asset's value replaces the asset in the fund's credit score, and the rating on the swap counterparty is substituted for the rating on the reference entity (asset).
78. If a hedge is partial and there is a remaining balance of exposure to the investment(s), the remaining exposure to the investment(s) remains in the credit score, and the hedged amount is incorporated in the credit score.
79. If a hedge exceeds the amount of investment exposure (meaning the notional value of the hedge exceeds the market value of the physical asset), the hedge counterparty is substituted in the credit score for the investment(s), and the excess hedge amount is treated as an uncovered synthetic short.

80. **Hedging a synthetic asset.** If the long position is a synthetic exposure, originated with counterparty (as opposed to through investment in the physical asset), we apply the treatment of hedges as described above, and we substitute the rating of the swap counterparty for the rating of the reference entity in the credit score to the extent the notional of the hedge covers the notional amount of the synthetic long position. However, if the hedge counterparty is rated lower than the reference entity, or if the hedge is not effective, the long notional amount remains in the fund credit score, and the hedge is treated as a short credit-based risk position.

3) Securities lending, and reverse repurchase and repurchase agreements

81. When a fund engages in securities lending and receives cash in exchange, the cash proceeds are added to the credit score of the fund, and the credit risk would reflect the rating on the financial institution where the cash is deposited. The counterparty risk in these transactions is also evaluated as part of our review of credit culture. The assets lent remain in the preliminary FCQR calculation. Similarly, when the fund enters into a reverse repurchase (reverse repo) agreement, the fund receives cash in exchange for selling its securities to the repo counterparty. The securities remain in the fund credit score, and the cash received is added to the fund credit score based on the creditworthiness of the financial institution at which the cash is deposited.
82. In addition, the credit quality of the financial institution holding the cash and the reverse repurchase counterparty are incorporated in the portfolio risk assessment as if they were derivative counterparties.
83. If the cash proceeds of lending securities or entering into a reverse repurchase agreement are subsequently reinvested in securities, the rating and maturity of the purchased securities are reflected in the credit matrix (instead of the cash).
84. For example: If a fund sells \$105 of 'BBB' rated securities to a counterparty, receives \$100 cash proceeds, and deposits the cash at a bank rated 'AA', \$105 will be added to the credit score at 'BBB' and \$100 will be added to the credit score at 'AA'. If, instead, the fund reinvests the \$100 of cash and purchases \$100 of securities rated 'AAA', \$100 will be added to the credit score at 'AAA', and the initial \$105 of securities rated 'BBB' remain in the fund credit score.
85. In a repurchase transaction (repo), a fund takes its cash and invests it with a counterparty that collateralizes the transaction with securities agreed upon with the fund. The amount invested is entered into the matrix at the rating on the repo counterparty for the term of the agreement.

4) Custodians and cash deposits with foreign bank branches

86. Cash held by custodians represents a fund asset and is incorporated in the matrix at the credit quality of the custodian. Cash held with an unrated custodian is assessed as having the same rating of the custodian's parent (or imputed rating) for the purpose of the quantitative assessment when strategically important to the group. When a custodial bank is not rated, we typically apply the rating on the bank or the parent based on the custodian's relationship within the bank group's organizational structure. Typically, custodial banks that are wholly or largely owned by a rated parent receive the same treatment as the parent as long as they remain integral to the parent's operating strategy and they are prudently operated, as demonstrated by good risk-management systems and controls, and a sound operational infrastructure. When a custodian bank is not rated and a wholly owned relationship to a rated parent cannot be deemed strong, we apply Appendix B.
87. We assume overnight maturity for deposits and amounts held with custodians, unless the deposit or arrangement has a contractual maturity (such as a certificate of deposit [CD]), in which case we apply the contractual maturity.

88. We apply "Financial Institutions Rating Methodology" when determining credit quality of bank branches.

5) Collateralized certificates of deposit

89. Collateralization is sometimes assumed to enhance credit quality. Collateralization can lower loss given default of a counterparty or deposit provider and, in this way, improve overall credit quality.
90. If a fund invests in nonrated CDs, we apply Appendix B to determine the rating input. However, if the CDs are overcollateralized with eligible sovereign debt and by levels consistent with those described in the last column of table 11 of "Principal Stability Fund Rating Methodology," published June 23, 2016, the CD credit quality is assumed to be 'A'. If the CDs are overcollateralized with securities other than eligible sovereign debt but are overcollateralized with collateral levels consistent with those described in tables 1 and 2 of "Methodology And Assumptions For Market Value Securities," published Sept. 17, 2013, the credit quality of the CD investment is determined by applying table 2 of the market value criteria. For example, if 'AAA' rated U.S. corporate debt is posted as overcollateralization, and the remaining term to maturity of the securities is five to seven years, we apply a rating of 'BBB' for the CD if overcollateralized by 25% (so 1.25x). This would apply if the collateral is priced at least weekly and held by a custodian in the name of the fund.
91. The maximum aggregate exposure to all collateralized CDs with banks that are not rated is 10%. Excess amounts are typically treated as unrated, and a rating input is applied as described in Appendix B without giving benefit to collateral posted for these excess amounts.

6) Breaches and cures--examples

92. In the first example, management and portfolio risk are neutral to the fund rating. The holistic analysis also is neutral to the rating. The fund is currently rated 'AAAf' and has a preliminary FCQR of 'AAAf' based on a matrix score of 14 (the threshold is 18). The manager repeatedly has breaches and cures, and the matrix score repeatedly breaches 18, and we believe the representative score is 24. We would lower the fund rating to 'AA+f' (and not 'AAf' since our view is that the score will not be above 37).
93. In the second example, management and portfolio risk are negative to the fund rating. The holistic analysis is neutral to the rating. The fund is currently rated 'AAf' despite its preliminary FCQR of 11, which would qualify for a fund rating of 'AAAf'. Hence, the qualitative assessments have been reflected in the final FCQR. Now the manager repeatedly has breaches and cures, and the matrix score repeatedly breaches 18, and we believe the representative score is 24. We would typically lower the fund rating to 'AA-f' to reflect both our projected preliminary FCQR and the weakness evidenced in the management and portfolio risk assessments.

B. Rating Inputs

94. Here we outline how we determine a rating input for an investment (issue) if unrated for the purpose of assigning an asset credit factor in table 1.

1) Corporate and government ratings

95. S&P Global Ratings has developed several methods to determine an asset's creditworthiness and associated credit factor for the purpose of applying table 1. The following is a brief description of

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different methodologies used to determine an investment's rating input if unrated:

96. If there is an S&P Global Ratings' long-term credit rating on the issuer--or on an obligor in the same organizational hierarchy, as appropriate--then that rating is the rating input for an issue that is not subordinated.
97. We apply a rating one notch below the long-term issuer rating or two notches below a speculative-grade long-term issuer rating (or rating input as derived in this Appendix), if subordinated. If the subordinated instrument is typically assigned a short-term rating (such as commercial paper), we would map to the short-term rating after determining the long-term issuer rating input.
98. If an issuer rating is not available but a credit estimate from S&P Global Ratings is available, then the credit estimate is the rating input (see "S&P Global Ratings Definitions").
99. If S&P Global Ratings has provided a mapping for the issuer, the corresponding rating input is determined pursuant to such mapping (see "Mapping A Third Party's Internal Credit Scoring System To Standard & Poor's Global Rating Score").
100. If there is another NRSRO rating on the issuer and that is public, unqualified, and we have determined that a mapping is possible for that NRSRO, then we determine the corresponding rating input by applying the statistical analysis described in our mapping criteria to the credit rating scale of the other NRSRO (see the "NRSRO mapping" section). The output of the analysis is used to derive the adjustment, if any, that applies to the other NRSRO's credit ratings for purposes of determining a rating input. When the issuer or issue has ratings from multiple NRSROs, the lowest is used. The portion of the principal balance of the assets that has rating inputs assigned in this way may not exceed 25% with a 5% per issuer limit. Excess exposure is treated as 'CCC-'.
101. If neither the issuer nor any of its affiliates is subject to reorganization, bankruptcy, or similar proceedings and all the issuer's obligations are current and the fund manager believes they will remain current, then the corresponding rating input for such an obligation is 'CCC-'. If these obligations represent a material part of a fund's assets, we may decide to not assign a fund rating or withdraw the fund rating.
102. For assets whose rating input cannot be determined using any of the steps described above, then the corresponding rating input is 'CC'. If these obligations represent a material part of a fund's assets, we may decide to not assign a fund rating or withdraw the fund rating.
103. For debtor-in-possession (DIP) financings, the issue-level rating may be used as the rating input for a maximum of 12 months from its initial assignment. However, we may further limit the use of the rating if we believe that the credit quality of the DIP loan has deteriorated since its assignment. To make this assessment, we may request the fund manager to provide information related to the DIP loan, such as amortization modifications, extensions of maturity, reductions of its principal amount owed, or nonpayment of timely interest or principal due. The fund manager will also provide any other information that, in his or her reasonable business judgment, may have a material adverse impact on the credit quality of the DIP asset.
104. For the purpose of determining the rating input: For obligors (or any of their obligations) with ratings on CreditWatch negative or positive, we wouldn't change the input until the obligors were downgraded/upgraded. These conditions are assessed in the portfolio risk assessment.

2) Fund of funds investing

105. If a fund invests in a fund that is rated on S&P Global Ratings' principal stability fund rating scale, we apply the non-subscribed rating. For example, we apply the 'AAA' factor for a 'AAAm' rated fund.

106. For funds investing in 2a-7 registered government money market funds that S&P Global Ratings does not rate, we apply a rating input, reflecting the short-term rating on the U.S. government, from table 1 to the money market fund when adding the credit score to the credit matrix because we know the fund is restricted to predominantly investing only in U.S. government securities.
107. For funds invested in all other fixed-income funds, we look to the underlying fund's portfolio in applying the quantitative assessment. If we do not have access to the underlying fund portfolio holdings, we consider the fund unrated and treat the fund rating input as 'CC'.

3) NRSRO mapping

i) Corporate and government

108. We have completed a mapping of Moody's and Fitch ratings in scope of this section. When neither a long-term nor short-term S&P Global Ratings' rating is assigned to a corporate, public finance, insurance, financial institutions, or sovereign asset, and none of the other options apply in Appendix B, we look to the lowest of the long- or short-term Moody's or Fitch issuer ratings (as applicable). We then lower it by one notch for investment-grade ratings and by two notches for speculative-grade ratings to determine the rating input. If an asset or investment is assigned a short-term rating by Moody's or Fitch, we map the rating to the corresponding long-term Moody's or Fitch rating and lower that by one notch if investment grade and by two notches if speculative grade. We then map that long-term rating back to a short-term rating to determine the input to the credit score by applying table 1.

ii) Funds

109. We do not map Moody's or Fitch funds ratings. This is due to insufficient overlapping populations for which we would apply our mapping criteria and derive statistically robust ratings inputs.

iii) Structured finance

110. If the issue is not rated by S&P Global Ratings, and none of the other rating input options applies, but the asset is rated by Moody's or Fitch, we apply the lowest of their long- or short-term issue ratings to determine the rating input. We apply a three-notch downward adjustment for structured finance securities rated by either Fitch or Moody's based on our mapping of Moody's and Fitch structured finance assets.

iv) Additional examples of mapping long-term and short-term ratings

111. The mapping of long- and short-term ratings reflects our criteria for linking short- and long-term ratings (refer to Related Publications) and reflects the column titled "Strong or adequate liquidity*". This mapping in table 1 covers the vast majority of rated issuers. However, some assigned ratings do not reflect that column's mapping.
112. An issue whose maturity is less than one year may be assigned 'A/A-2' ratings or an 'A-2' rating but be issued by an 'A' rated issuer. In both examples, we would typically apply the 'A-2' factor. By contrast, if the issue is rated 'A-2' and the issuer does not have a long-term issuer credit rating, an investment with a maturity greater than 365 days is assigned the factor associated with 'BBB', the lowest long-term rating to which 'A-2' maps. If the 'A/A-2' rated investment's maturity exceeds 365 days, we assign the factor associated with 'A'.

113. In another example, an investment whose maturity is 365 days or less may be assigned an 'A-1' rating but be issued by an 'A-/A-1' rated issuer. We apply the factor associated with 'A-1' in this example and we apply the factor for 'A-' if the asset maturity is one year or greater. However, sometimes the gap between long- and short-term ratings is so great that we do not hold to the short-term rating factor. If the fund invests in an investment rated 'AAA/A-1', we apply the factor associated with 'AAA', irrespective of maturity.

C. Ratings Definitions

114. The revised ratings definitions in table 9 will apply once the criteria are updated. Current rating definitions are found in "S&P Global Ratings Definitions," published June 26, 2017.

Table 9

Fund Credit Quality Ratings Definitions

AAAf	The credit quality of the fund's portfolio exposure is extremely strong.
AAf	The credit quality of the fund's portfolio exposure is very strong.
Af	The credit quality of the fund's portfolio exposure is strong.
BBBf	The credit quality of the fund's portfolio exposure is adequate.
BBf	The credit quality of the fund's portfolio exposure is weak.
Bf	The credit quality of the fund's portfolio exposure is very weak.
CCCf	The credit quality of the fund's portfolio exposure is extremely weak.
CCf	The fund's portfolio has significant exposure to defaulted or near defaulted assets and/or counterparties.
Df	The fund's portfolio is predominantly exposed to defaulted assets and/or counterparties.

*The ratings from 'AAf' to 'CCCf' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

D. Definitions

Concentration eligible GREs

115. For the purposes of these criteria, we define a concentration eligible GRE as one with a rating at the same level or higher than the rating on its related sovereign, with likelihood of support from the sovereign of at least "very high," and whose price stability we believe will be generally consistent with those of similar GREs that have more stable market values during various market cycles than other short-term investment alternatives. We will not consider a GRE to be concentration eligible if we have reason to believe that it will have materially greater price instability than other similarly rated GREs. The likelihood of support results from applying table 1 in "Rating Government-Related Entities: Methodology And Assumptions," published March 25, 2015.

E. Fund Credit Quality Ratings--National Scale

- ¹¹⁶. Current national scale rating definitions for FCQRs are found in "S&P Global Ratings Definitions."
For FCQRs on national scales, we generally apply the global scale FCQR criteria and then apply our national scale mapping tables to determine the national scale FCQR (see Related Publications).
- ¹¹⁷. This paragraph has been deleted.

F. Insured Deposits (Including Investment Programs Focused On FDIC-Insured Deposits)

- ¹¹⁸. This appendix provides additional detail with regard to how we apply the FCQR criteria to insured U.S. bank deposits. We view the presence of Federal Deposit Insurance Corp. (FDIC) insurance for U.S. bank deposits, including those deposited at unrated banks, as generally supportive of credit quality. We generally include the benefit of credit substitution in the determination of a rating input within the FCQR methodology (see the Ratings Inputs in Appendix B). This appendix provides additional detail about how we apply the criteria when funds invest in assets benefiting from alternatives to traditional guarantees such as structured indemnity agreements.
- ¹¹⁹. We consider insured deposits when we apply our FCQR criteria and FDIC-insured deposits when applying our FCQR criteria to funds investing in U.S. bank deposits when considering credit quality, diversification, and liquidity.

Key concepts

- We may view the presence of bank or credit union deposit insurance from the FDIC or other U.S. government-related entities (GREs), or similar support mechanisms, for deposits at unrated U.S. banks or similar financial institutions, such as credit unions, as supportive of credit quality.
 - We generally look to the insurance or similar support from a U.S. GRE with at least "very high" likelihood of extraordinary support as being supportive of credit quality within the FCQR criteria.
 - FDIC deposit insurance or similar eligibility limits typically create a natural incentive toward bank diversification.
 - In addition, the nature of FDIC insurance or similar U.S. GRE support mechanisms results in additional operational elements we consider as part of our management assessment.
- ¹²⁰. The sections of the FCQR criteria to which this relates is:
- Quantitative Assessment: Fund Credit Quality Matrix
 - Rating inputs and withdrawn ratings
 - Issuer concentration risk
 - Concentration eligible GREs
 - Liquidity

Overview

121. Certain insured deposits have limited liquidity when having maturity greater than overnight, including Pooled bank deposit programs (e.g., Certificate of Deposit Accounts Registry Service [CDARS], Deposit Liquidity Accounts, Insured Network Deposits, and Federally Insured Cash Accounts [FICA]) with a maturity of more than one business day. These nonmarketable securities typically impose fees for early withdrawal, and they may experience a delay in receiving Federal Deposit Insurance Corp. insurance payments."
122. Fund exposure, in aggregate, to investments with limited liquidity is generally viewed as a negative when held in excess of 20% (see the Portfolio Risk Assessment's section on Liquidity). If the deposits are held at a rated bank (or other rated financial institution), we apply table 1 (and the other relevant tables) and apply our rating on the bank unless the rating falls below the eligibility criteria for the rating on the fund.
123. Overnight deposits are less exposed to liquidity risk because they either mature and cash is remitted to the fund, or the bank defaults on its obligations. The criteria provide specific FCQR asset (investment) credit factors based on the asset maturity (see table 1).

Credit quality

124. We consider the impact of credit quality of deposit investments based upon the rating on the deposit bank. When the bank is not rated, we consider if any credit substitution is applicable--for example, due to the presence of guaranties.
125. When the deposit bank is unrated, and if there is no guaranty or similar credit substitution, deposit investments may benefit from insurance--for example, deposit insurance. When insurance is relevant, we assess whether we can substitute the creditworthiness of the insurer when we apply the criteria. When investments benefit from insurance from a commercial insurer, we may substitute their creditworthiness for that of the bank when the insurer considers its obligation under the policy as equal in priority to its senior-most obligations and agrees to pay without delay. When considering the credit substitution from a commercial insurer, we typically would reference the insurer's financial enhancement rating (FER) as evidence of the commitment to comply with the urgent timing requests associated with this type of financial insurance.
126. A fund may elect to invest in U.S. deposits that are not commercially insured but rather insured by a U.S. GRE with at least "very high" likelihood of extraordinary support from the U.S. government. This is often the case for funds that elect to invest in pooled bank deposit programs.
127. FDIC deposit insurance eligibility limits create a natural incentive toward bank diversification. To determine diversification when funds invest in pooled bank deposit programs, we assume the limits are naturally creating effective diversification, but we do assess the pooled bank deposit program administrator's ability to look through to the banks taking the deposits and their ability to periodically report these exposures to fund managers. We assess the fund manager's ability to periodically aggregate bank exposure across pools when funds invest through more than one pooled bank deposit program. The fund's ability to periodically aggregate across programs and confirm quantitative metrics and thresholds when looking through the deposit programs is an important consideration to our management assessment as described below. For example, if a fund were to exceed the deposit insurance limit when separate investments are aggregated, this would render the excess amount as having a corresponding rating input based on the deposit bank (see Appendix B. Rating Inputs) unless the amount exceeding the FDIC limit benefits from a different credit enhancement that qualifies for credit substitution.

128. As with other forms of insurance, the credit substitution is sometimes less effective than when stemming from other types of financial enhancement, such as bank-issued letters of credit (LOCs), due to potential timing delays or possible rejection of claim. Nevertheless, when we apply the FCQR criteria, overnight investments benefiting from insurance from U.S. GREs with at least "very high" likelihood of extraordinary government support would receive the same treatments as "concentration eligible" GREs as described in Appendix D. Our view could change if we determine that there is not at least "very high" likelihood of extraordinary support from the U.S. government. Due to nature of insurance, potential liquidity and credit risk remain, and we address it through our review both of the fund management and of the pooled bank deposit provider as described below.
129. We assess operational competence by viewing a pooled deposit program's strength when frequent and detailed reporting of underlying bank exposure is possible and reviewed periodically by fund management. It is this competence that enables our view of effective diversification. We still consider diversification as relevant because there remains the risk that a bank will fail to repay its deposit and the FDIC may delay or even reject payment. This is why we assess the operational effectiveness of the pooled bank deposit administrator and the ability of the fund manager to periodically observe the underlying bank deposit investments.

Liquidity

130. We understand the FDIC's goal to make deposit insurance payments within two business days of the failure of the insured institution; however, FDIC insurance payments may be delayed. In our fund analysis, we generally assume a potential delay of an additional day or two due to the timing of making a claim. As such, we generally assume FDIC payment will be available in time for a fund to use the money to meet a fund redemption request within five business days. We assess a fund's liquidity management in light of the risk of possible delayed payment from the FDIC or other insurer.

Management and operational review

131. There are programs whose business objective is to collect funding from entities such as money funds and place them on deposit with banks that meet the program's eligibility criteria, one of which is that the deposits are FDIC-insured. Consistent with how we describe application of the criteria above, we assess the operations of these programs to determine how consistent the program guidelines and operations are with our criteria. Among other aspects of program operations, we typically consider:
- Program management operational ability to manage consistent with the criteria;
 - Program management operational historical operations and, if the program is new, we assess the experience of the program administrators with this type of operational responsibility;
 - Management experience with regard to administering the program;
 - Program management's track record of failure to invest in eligible deposit accounts--i.e., amounts over the insurance limit;
 - Program management operational expertise with regard to payment timing and mechanics;
 - Program management operational track record;
 - Any information informing the treatment of or potential delay in access to fund investment if it is caught up in a failure of a relationship bank through which funds are subsequently

distributed to underlying local and regional banks;

- Program documentation; and
- Any other information we view as helpful to understand the competence of the program administrator.

132. We note our view of the program as part of our review of fund management. We may assign a financial program rating where applicable--for example, when the program is not simply a leveraging of the FDIC's implicit credit quality.

G. Indemnities

Key concept: We may view properly structured indemnity agreements as substitutes for guarantees and supportive of credit quality when we apply the FCQR criteria.

133. The key sections of the FCQR criteria to which this relates is:

- Quantitative Assessment: Fund Credit Quality Matrix
- Counterparty Analysis/Other Topics
- Liquidity

134. When we apply the FCQR criteria, we assess indemnities provided as a source of potential credit substitution when we assess the structure as effective as described below. When effective, we apply the credit quality of the indemnity provider when considering the fund credit quality matrix and in our counterparty analysis. We also consider the structure timing when assessing liquidity.

135. Some financial institutions have increasingly focused on alternatives to traditional LOCs and similar contracts to enhance debt issues or other investments S&P Global Ratings doesn't already rate and may provide an indemnity--such as a deed of indemnity--in lieu of an LOC. When presented with such an alternative, we review the documentation associated with the indemnity by applying "Guarantee Criteria," Oct. 21, 2016, to assess if the indemnity is equivalent to a guaranty and, if so, to determine if credit substitution is achieved.

136. Optimally, in addition to credit substitution, an indemnity achieves the same timing mechanics as do LOCs. However, it is possible that an indemnity is structured such that (a) a claim must be made by the fund against the indemnity and (b) the indemnity pays the difference owed back to the fund with regard to its investment after determining the value (typically through liquidation) of collateral assets (which are eligible investments under the fund's investment guidelines) and which are tied to the backstop provided under the indemnity. The first condition introduces operational risk because it introduces operation dependency to the fund manager to make a claim. This is typically not present in guarantees. We accept this risk because we assess management as part of fund ratings. The second condition introduces liquidity risk to the fund since the fund manager must incorporate the potential delay in receiving funds. We incorporate the manager's approach to incorporating this risk in our review of management.

137. We do not view the combination of contract and asset as a liquid investment if the fund is responsible for selling the collateral assets as part of the structure. In addition, we view these agreements as entirely tied to the initial provider of the indemnity and generally not transferrable. However, we do not allocate this exposure to the list of assets with limited liquidity when the

collateral is composed of assets we do view as liquid and when the provider of the indemnity or other third-party is obligated to liquidate collateral so as to make proceeds available to the fund promptly based upon our review of the agreements and liquidation mechanics.

138. Given the timing mechanics require a liquidation of collateral assets or similar method to determine the amount payable, monies may be received by the fund on a delayed basis. This means we assess the fund management's approach to liquidity management since funds may be received after the initial payment date. This means this type of credit enhancement is more complicated relative to that of a traditional LOC or guarantee.
139. We view the maturity as that of the last payment date monies are able to be paid under the indemnity. We consider management's approach as far as how they manage their liquidity resources given the potential payment delay when this is a feature of indemnities.
140. When considering portfolio asset diversification (and concentration) we consider the credit substitution provider as the obligor, and we typically aggregate all obligations of credit substitution obligors and then aggregate with any investments in obligations issued by those obligors.

REVISIONS AND UPDATES

This article was originally published on June 26, 2017.

Changes introduced after original publication:

- Following our periodic review completed on June 21, 2018, we deleted text related to the initial publication in paragraphs 1 and 116, updated the contact information, and updated the "Related Publications" section.
- On June 30, 2020, we republished this criteria article to make nonmaterial changes. We added a new paragraph 9 after table 1 to clarify our approach when a passively managed target maturity fund's maturity is within one year. We also updated the contact information and the related criteria and research.
- On Oct. 27, 2020, we republished this criteria article to make nonmaterial changes. We clarified that the ability to determine the preliminary FCQR through assessment of a hypothetical asset portfolio, as already described in the "Breaches and cures" section, is also a way to determine the preliminary FCQR as we would by using a proxy fund absent a breach. We also deleted a bullet point referring to the effective date from the section "Key Publication Dates" because the criteria are now effective in all markets. We also updated the "Related Publications" section.
- On Dec. 13, 2021, we republished this criteria article to make nonmaterial changes. We updated criteria references and related research.
- On Nov. 9, 2022, we republished this criteria article to make nonmaterial changes. As announced in "Evolution Of The Methodologies Framework: Introducing Sector And Industry Variables Reports," Oct. 1, 2021, we are phasing out guidance documents over time. As part of that process, we have archived "Guidance: Principal Stability Fund And Fund Credit Quality Ratings Methodology" and included its content relevant to this criteria in new appendices F and G. In addition, we made editorial changes to improve readability and updated the related publications section and contact information.
- On Dec. 14, 2023, we republished this criteria article to make nonmaterial changes. We updated the "Quantitative Assessment: Fund Credit Quality Matrix" section by adding a new paragraph 10 with an additional example of when we may adjust our view of the preliminary FCQR and updated paragraph 14 to clarify that the preliminary FCQR can be lower than or equal to the

highest rating for the fund credit score in table 3. In addition, we updated Appendix B. Rating Inputs by deleting previous paragraph 97 related to the retirement of "Mid-Market Evaluation Rating Methodology," Nov. 20, 2014. We also updated paragraph numbers throughout, the related publications section, and contact information.

RELATED PUBLICATIONS

Related Criteria

- National And Regional Scale Credit Ratings Methodology, June 8, 2023
- Financial Institutions Rating Methodology, Dec. 9, 2021
- General Criteria: Group Rating Methodology, July 1, 2019
- Global Methodology And Assumptions For CLOs And Corporate CDOs, June 21, 2019
- Counterparty Risk Framework: Methodology And Assumptions, March 8, 2019
- Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Guarantee Criteria, Oct. 21, 2016
- Principal Stability Fund Rating Methodology, June 23, 2016
- Mapping A Third Party's Internal Credit Scoring System To Standard & Poor's Global Rating Scale, May 8, 2014

Related Sector And Industry Variables Reports And Guidance

- Sector And Industry Variables: National And Regional Scale Credit Ratings Methodology, June 8, 2023

Related Research

- S&P Global Ratings Definitions, updated from time to time
- Evolution Of The Methodologies Framework: Introducing Sector And Industry Variables Reports, Oct. 1, 2021

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