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Request For Comment: Fund Credit Quality Ratings Methodology

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Request For Comment: Fund Credit Quality Ratings Methodology

(Editor's Note: S&P Global Ratings published the criteria article titled "Fund Credit Quality Ratings Methodology," June 26, 2017, after the criteria review process initiated by this request for comment.)

1. S&P Global Ratings is requesting comments on proposed changes to its global methodology for assigning fund credit quality ratings (FCQRs) on fixed-income funds. An FCQR, also known as a "bond fund rating," reflects our forward-looking opinion about the credit quality of a fixed-income investment fund, including portfolio investments and counterparty exposures, as well as a fund manager's ability and willingness to maintain current fund credit quality.
2. FCQRs are identified by the 'f' subscript (e.g. 'AAAf') to distinguish them from S&P Global Ratings' issue or issuer credit ratings. Unlike credit ratings that we assign to debt issued by an issuer, an FCQR does not address a fund's ability to meet payment obligations. It also does not address yield levels. If we adopt the proposed criteria, FCQRs will be accompanied by fund volatility ratings (i.e., 'Af/S3')--when a fund volatility rating can be assigned--to communicate our opinion on risks not addressed by FCQRs (see "Fund Volatility Rating Criteria," published Feb. 2, 2007, and "Request For Comment: Fund Volatility Ratings Methodology," published Sept. 26, 2016).
3. We have two main objectives for our proposed changes: to update the credit quality matrix to reflect long- and short-term rating default statistics aggregated since 2007, which has resulted in a significant increase in the factors for highly rated assets, as described in Appendix A, and to make more transparent the analysis and application of the qualitative assessments.
4. If we adopt the proposed changes, the new criteria would fully supersede our existing global FCQR criteria, "Fund Credit Quality Rating Criteria," published Feb. 2, 2007, as well as "Treatment Of Credit Default Swaps," published Jan. 17, 2007, "Methodology: Updated Fund Credit Quality Ratings Criteria For Counterparty Transactions," published July 22, 2011, and "Australian And New Zealand Fund Credit Quality Ratings Criteria," published July 20, 2009.

SCOPE OF THE PROPOSAL

5. The proposed criteria apply globally to fixed-income funds, often referred to as "bond funds," and other actively and passively managed fixed-income funds that may exhibit variable net asset values. Funds that benefit from guarantees at the fund level (as opposed to asset level) are not in scope of these criteria.

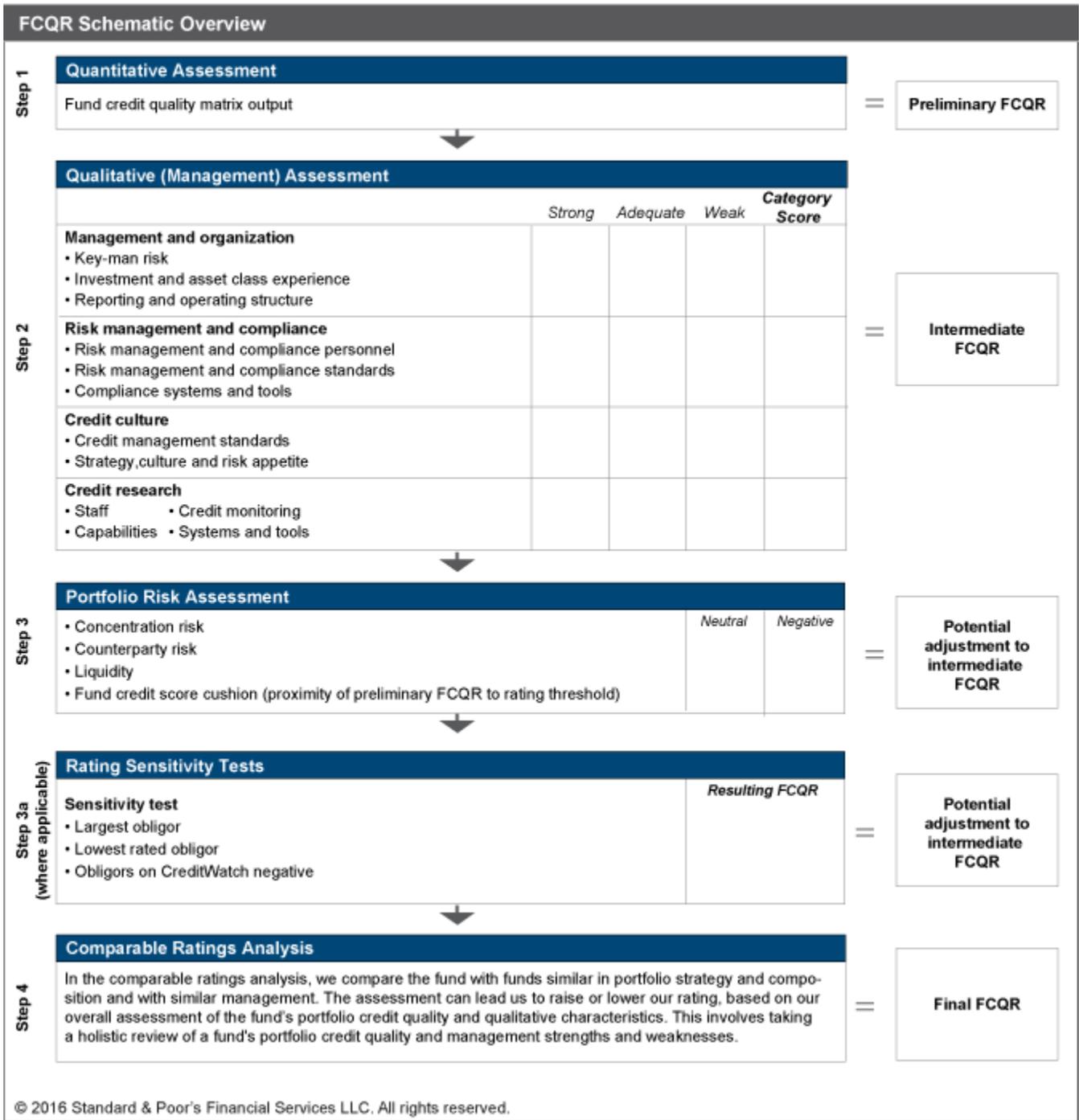
SUMMARY OF THE PROPOSAL

6. When assigning an FCQR, we first determine a preliminary FCQR through a quantitative assessment of a fund's portfolio credit risk. The assessment reflects the weighted 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."

7. 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.
8. We then consider two assessments to determine an 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.
9. Lastly, we perform a comparable rating analysis and contrast a fund with other funds that have similar portfolio strategy and composition. Here we capture a more holistic view of the fund's portfolio credit quality and portfolio 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.

Chart 1



SPECIFIC QUESTIONS FOR WHICH WE ARE SEEKING A RESPONSE

10. S&P Global Ratings is seeking market feedback on its proposed methodology and responses to the following questions:

- Do you have alternative views on the proposed updates to the criteria, and if so, why? In particular, do you have views on the application and effect of the rating sensitivity tests?
- In your opinion, do the proposed criteria contain any significant redundancies or omissions? Are any factors significantly over- or underweighted, and if so, why? For example, do you have alternatives to how we have differentiated the treatment of hedging and speculative credit derivatives?
- Do you have alternate views on how we capture repo and reverse repo activity?
- Do you have alternate views on the composition and content of our management assessment?
- Do you have alternate views on the composition and content of our portfolio risk assessment?

IMPACT ON OUTSTANDING RATINGS

11. The criteria, if implemented as proposed, and assuming no portfolio changes, would result in S&P Global Ratings downgrading approximately one-third of funds, typically by one or two notches, and upgrading approximately one-third of funds, typically by one notch. The upgrades and downgrades are largely due to the revision of the credit factors and the fund rating thresholds. The upgrades would predominantly affect U.S. government funds whose investments in 'AA+' rated U.S. government bonds were assigned the same factor as 'AA' under the old methodology (see Appendix D for more on derivation of credit factors and fund rating thresholds). The downgrades would primarily result from the proposed increase to many credit factors, especially for the several factors that are no longer zero. This results in some funds' credit scores now exceeding the fund rating threshold. Finally, some rating changes would stem from the adoption of the proposed management assessment and the portfolio risk assessment and its rating sensitivity tests.

RESPONSE DEADLINE

12. We encourage interested market participants to submit their written comments on the proposed criteria by Nov. 7, 2016, to http://www.standardandpoors.com/en_US/web/guest/ratings/rfc (you may need to log in or register first). We will review and take such comments into consideration before publishing our definitive criteria once the comment period is over. S&P Global Ratings, in concurrence with regulatory standards, will receive and post comments made during the comment period to www.standardandpoors.com/en_US/web/guest/ratings/ratings-criteria/-/articles/criteria/requests-for-comment/filter/all#rfc. Those providing comments may choose to have their remarks published anonymously or they may identify themselves. Generally, we publish comments in their entirety, except when the full text, in our view, would be unsuitable for reasons of tone or substance.

PROPOSED METHODOLOGY

13. We determine an FCQR in four steps. We first determine a preliminary FCQR through a quantitative assessment of a fund's portfolio credit risk. The assessment reflects the weighted average credit risk of the fund's investments. We then consider two assessments to set the intermediate FCQR. We assess management through four categories. If any category is "weak," the intermediate FCQR is one notch lower than the preliminary FCQR and possibly more. We also

assess portfolio risk, through four indicators. If any of those are "negative," that could lead to a lower intermediate FCQR through the application of rating sensitivity tests.

- The final step is to conduct a comparable rating analysis. Here we compare a fund with funds that have similar portfolio strategies and composition, as well as similar management. The comparable rating analysis can lead us to a final FCQR that is higher than or lower than our intermediate FCQR, based on our overall assessment of the fund's quantitative and qualitative characteristics.

A. Quantitative Assessment: Fund Credit Quality Matrix

- 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 current 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.

Table 1

FCQR Asset (Investment) Credit Factors				
Credit quality (rating or rating input)	Short-term issue or issuer rating	<= 90 days	> 90 days; <=364 days	> 364 days
AAA	A-1+	2	7	10
AA+	A-1+	2	7	25
AA	A-1+	2	7	40
AA-	A-1+	2	7	70
A+	A-1	20	40	100
A	A-1	20	40	130
A-	A-2	45	120	220
BBB+	A-2	45	120	310
BBB	A-2	45	120	400
BBB-	A-3	125	300	800
BB+	B	1,200	1,200	1,200
BB	B	1,600	1,600	1,600
BB-	B	3,700	3,700	3,700
B+	B	5,800	5,800	5,800
B	B	8,000	8,000	8,000
B-	B	15,000	15,000	15,000
CCC+	C	22,000	22,000	22,000
CCC	C	30,000	30,000	30,000
CCC-/CC/C/D	SD/D	37,000	37,000	37,000

Note: If an issue is not assigned a rating, no long- or short-term issuer rating has been assigned, and the asset maturity is less than 365 days (at issuance), the factor associated with the lowest long-term rating input (see Appendix) to which the short-term rating maps and the corresponding maturity is applied.

1) Applying the credit factors

16. 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 three buckets (see table 1):
- 90 days or less;
 - Greater than 90 days but less than or equal to 364 days; and
 - Greater than 364 days.
17. 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 current market value, unless a hedge applies or is originated as a derivative (see Appendix B for additional guidance). By rating, we refer to any rating assigned by S&P Global Ratings or rating input, as described in Appendix C. The weighted factor for each investment is summed to determine the fund credit score.
18. 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
50	AAA	90 days	2
35	AA	180 days	7
10	A	2 years	130
5	CCC	30 days	30,000

2) Applying the thresholds to determine the preliminary FCQR

19. 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. In our example above, the fund credit score of the assets, 1,516, falls between the 'BB+f' threshold of 1,360 and the 'BBf' threshold of 2,440. The preliminary FCQR is 'BBf' because it exceeds the threshold for 'BB+f'.

Table 3

Fund Rating Thresholds

Rating	Max score
AAAf	16
AA+f	31
AAf	52
AA-f	82
A+f	112
Af	166
A-f	256
BBB+f	346
BBBf	560
BBB-f	960

Table 3

Fund Rating Thresholds (cont.)	
Rating	Max score
BB+f	1,360
BBf	2,440
BB-f	4,540
B+f	6,880
Bf	10,800
B-f	17,800
CCC+f	25,200
CCCf	33,000
CCC-f/CCf/Cf/Df	>33,000

3) Repurchase and reverse repurchase agreements and credit default swaps

20. 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 a 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.
21. 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 B, we provide more detail on treatment of repurchase and reverse repurchase agreements and credit default swaps).

4) Interest rate and currency derivatives (swaps)

22. 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 in the fund credit quality matrix using the swap maturity and the rating on the counterparty to determine the factor. In Appendix B and the footnote to table 8, we provide more detail on treatment of interest rate and currency derivatives.

5) Mapping of long-term and short-term ratings

23. 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 C).
24. For a speculative-grade 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'.

6) Credit factors for defaulted and nearly defaulted assets ('CCC-', 'CC', 'C', and 'D') and fund rating thresholds for 'CCC-f', 'CCf', and 'Df'

25. We do not propose to differentiate credit factors at rating levels 'CCC-' and below or fund ratings thresholds at rating levels '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. For funds rated 'CCC-f' and below, 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 the 'CCf' rating to funds that significantly invest in 'CC' and/or 'C' rated investments.
 - We assign the 'Df' rating to funds that significantly invest in 'D' and/or 'SD' rated investments.
26. Funds that significantly invest in 'CCC-' assets but whose preliminary FCQR indicates a fund rating higher than 'CCC-f' may still be assigned a rating of 'CCC-f' based upon a qualitative assessment. For all of these, we define significantly as typically more than half of the portfolio.

7) Rating inputs and withdrawn ratings

27. 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 C to determine a ratings input to the fund credit quality matrix.
28. 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 F) 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 C to determine a rating input. We do so because we are less certain the role and link will remain constant as time passes.
29. For all other withdrawn ratings, we follow the ratings input guidance described in Appendix C.

8) Asset maturities

30. *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 when determining the applicable factor in the credit matrix.
31. *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 three-month average WAL as sourced from nationally or internationally recognized providers of such information, when determining the applicable factor in the credit matrix.

9) Management of fund credit quality metrics

32. 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.

10) Breaches and cures

33. 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 B.
34. 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.
35. 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.
36. 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.
37. 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.
38. 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), as described in the example in the Appendix. 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.
39. 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.

B. Management Assessment

40. 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 and component within the category is assessed as "strong," "adequate," or "weak." We evaluate each component listed in tables 4-7 holistically to determine the component assessment.
41. If any component is "weak," the corresponding category is "weak," and 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.

42. 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.
43. 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. A category is assessed "strong" if the majority of the components are "strong" and no component is "weak."
44. 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 component 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.

1) Management and organization

45. 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.

2) Risk management and compliance

46. 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. However, we exempt certain funds from stress testing. We exempt funds whose fund credit quality is clearly linked to the rating on one sovereign, counterparty, or obligor, since the stress test would reveal nothing about the fund's portfolio construction and its impact on the fund's credit stability. We exempt certain funds from our expectation of having stress testing as part of our assessment. One example is a fund whose investment portfolio credit quality is clearly linked to the rating on one sovereign, counterparty, or obligor, since the stress test would reveal nothing about the fund's portfolio construction and its impact on the fund's credit stability. We also exempt funds that invest solely in sovereign securities and funds with obligors rated 'AA' or higher 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 is 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.

3) Credit culture

47. 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 other managers.

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 impact 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.

4) Credit research

48. Credit research reflects the depth and quality of a manager's credit analysis. Here we consider a manager's credit objectives. We review its credit evaluation, approval, and monitoring process and examine the purpose, focus, and consistency of its credit policies. We evaluate a manager's credit process by reviewing the credit research team, analysts' sector and industry experience, independent analysis, and resources and tools. We consider the robustness of the credit process, as reflected in specificity of roles and responsibilities. We evaluate the clarity and logic of the standard operating procedures incorporated into the credit process. We assess the use of technology, preservation, and communication of credit analyses, as well as the use of external investment advisers to supplement internal research or compensate for any gaps in internal research capabilities.

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 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 their 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.

Table 7

Credit Research (cont.)			
Components	Strong	Adequate	Weak
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.

C. Portfolio Risk Assessment

49. 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 rating threshold.) Typically we consider three months of portfolio reports when assessing portfolio risk to ensure we observe a sustained trend as opposed to a brief change in portfolio risk. The purpose of the assessment is to inform a forward view of the rating.
50. 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.
51. If any indicator is "negative," the portfolio risk assessment is "negative." If no indicators are "negative," the portfolio risk assessment is "neutral."
52. If we determine that the portfolio risk assessment is "negative," we apply rating sensitivity tests. 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.
53. If the largest obligor test scenario or the two other scenarios imply a fund rating lower than the 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. For funds that reflect unique risks, we may supplement the tests above with other tests 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 'AAAF' 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.

1) Issuer concentration risk

- 54. 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.
- 55. 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 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.
- 56. Some funds are designed to be concentrated to certain issuers--such as U.S. government funds. For this type of fund, whose rating is clearly linked to one sovereign or one supranational issuer, 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.
- 57. In addition, we exclude investments with maturities of less than or equal to five business days from the issuer concentration risk indicator assessment since their short maturities limit the fund's exposure to a change in the credit quality of the issuers or to a manager's potential inability to sell those assets.

2) Derivative counterparty creditworthiness

58. 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 the short does not represent a credit hedge of an existing fund investment (uncovered short).
59. 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.

3) Liquidity

60. 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 limits the manager's ability to manage the credit quality of the fund. 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.
61. Examples of illiquid/limited liquidity assets include but are not limited to:
- Complex securities (due to security structure or multiple dependencies),
 - Opaque securities (due to limited or non-public 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 non-transferable instruments, such as time deposits with no breaking clause prior to maturity date.

4) Fund credit score cushion

62. 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 15 and the fund rating threshold is 16. 10% of the threshold is 1.6 (we round to 2). A fund credit score of 14 or 15 results in a "negative" assessment, unless we believe the risk will be effectively managed.

5) Rating sensitivity tests (when applicable)

63. The rating sensitivity tests measure the potential change in 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 issuer's long term rating and determine whether that lower long-term rating maps to the next short-term rating level (i.e., 'A-1' to 'A-2').

64. 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.
65. We exclude from the rating sensitivity tests cash investment or its equivalent. Cash and equivalents include unrestricted cash and highly liquid securities with less than or equal to five days in maturity. We also exclude from the rating sensitivity tests investments in funds that are regulated under 2a-7 and are stable net asset value funds (government money market funds), even if we do not have access to the 2a-7 funds' portfolio details, because we know these funds invest predominantly in U.S. government securities, and the underlying fund's creditworthiness is driven by a single obligor.
66. 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.
67. 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.
68. 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.
69. 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 at that level 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 apply the rating sensitivity tests to the largest of the four assets, the lowest rated of the four assets, and to each of the assets with ratings on CreditWatch negative.
70. 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 C to determine the funds' creditworthiness when applying these tests.

D. Comparable Ratings Analysis

71. 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 our overall assessment of the fund's portfolio credit quality and qualitative characteristics. This involves taking a holistic review of a fund's portfolio credit quality and management strengths and weaknesses. A positive assessment, supported by a positive management assessment, leads to a one-notch upgrade, a negative assessment leads to a one-notch downgrade, and a neutral assessment results in no change to the FCQR due to the comparable ratings analysis.

APPENDIX

A. Summary Of Proposed Changes To The FCQR Criteria

72. We propose to update the fund credit quality matrix. The credit factors for issue and issuer ratings are informed by the data we use in our annual default and transition studies.
73. For speculative-grade and investment-grade maturities longer than 364 days, one-year probabilities of default associated with various rating categories inform our proposed fund credit factors. We derive the factors for modified rating levels (e.g., 'AA+', 'AA-', 'A+', and 'A-') through linear interpolation.
74. Notably, the proposed updates to the credit quality matrix increase factors for investments with long-term ratings of 'A' or higher or short-term ratings of 'A-1+' or 'A-1', and whose maturity is shorter than one year. The proposed factors are no longer zero. In addition, factors are now applied to defaulted investments, and there is further differentiation based on rating modifiers ("+" or "-" after the rating).
75. We propose factors be applied to assets rated 'CCC-' or lower, including the 'CC', 'C', and 'D' categories. Previously, assets rated 'D' were assigned no factor. We recognize that assets that have already defaulted pose minimal further credit risk, but we propose to maintain the factor in the credit score until the asset has been disposed or restructured and reflects the updated credit quality.
76. We propose to determine FCQRs in four steps. The quantitative assessment determines the preliminary FCQR. We then assess management and portfolio risk to set the intermediate FCQR. The final FCQR is determined after applying a one-notch adjustment for comparable ratings analysis, if warranted. The management assessment and the portfolio risk assessment each has four metrics. If management demonstrates weakness, the FCQR is lowered. If the portfolio risk assessment is negative, rating sensitivity tests are applied to determine by how many notches we would lower the FCQR.
77. We propose to update and clarify how we apply the qualitative assessment. We propose to discontinue the fund credit overlay and introduce a management assessment. The management assessment's categories are management and organization, risk management and compliance, credit culture, and credit research, and each is assessed as "strong,"

"adequate," or "weak." We propose that if any are "weak," the intermediate FCQR is lower than the preliminary FCQR.

78. We propose to introduce a portfolio risk assessment whose indicators are: issuer concentration risk, derivatives counterparty creditworthiness, liquidity, and fund credit score cushion.
79. We propose to define the concepts of "active" and "passive" breaches and cure periods with regard to the quantitative assessment (see tables 1 and 3). We propose a threshold for "active" breaches and introduce the concept that persistent "passive" breaches (i.e., preliminary FCQR scores that no longer support the assigned FCQR), even if repeatedly cured, would result in us lowering the FCQR.
80. We also propose to update and clarify how we determine rating inputs. Rating inputs are applied in table 1 of the fund credit quality matrix (collectively tables 1 and 3) to determine the preliminary FCQR. Rating inputs are also applied in the portfolio risk assessment and its rating sensitivity tests. We determine and apply rating inputs when an issue, issuer, or counterparty does not have a rating from S&P Global Ratings.
81. We propose to refine how the management assessment (formerly the fund credit overlay) can improve the final FCQR relative to the preliminary FCQR (the terms "preliminary" and "final" FCQRs would not exist in the current criteria). It now leads to a higher final FCQR when supported by the comparable ratings analysis.
82. Finally, in the Appendix, we clarify how additional considerations, such as counterparty risk, investment in certain certificates of deposit (CDs), entering into repurchase agreements, and use of credit derivatives, are incorporated in our analysis. Some of these are currently described in separate criteria articles, and we propose that they be consolidated in these criteria.

B. Counterparty Analysis/Other Topics

1) Guarantees and group rating methodology

83. We do not apply "Guarantee Criteria--Structured Finance," published May 7, 2013, 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.
84. "Group Rating Methodology" published Nov. 19, 2013, 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

85. 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)

86. 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)

87. 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.
88. **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.
89. **(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 C to determine the rating input for the entity to which the fund has mark-to-market exposure.
90. **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 includes considering 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.
91. **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).
92. 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.
93. 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.
94. **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, reverse repurchase and repurchase agreements

95. 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.
96. 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.
97. 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).
98. 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'. This may improve the fund credit score. 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. This may improve the fund credit score.
99. 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

100. 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 C.
101. 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), in which case we apply the contractual maturity.
102. We apply "Assessing Bank Branch Creditworthiness," published Oct. 14, 2013, when determining credit quality of bank

branches.

5) Collateralized certificates of deposit

103. 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.
104. If a fund invests in nonrated certificate of deposits, we apply Appendix C 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.
105. 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 C without giving benefit to collateral posted for these excess amounts.

6) Breaches and cures--examples

106. 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 11 (the threshold is 16). The manager repeatedly has breaches and cures, and the matrix score repeatedly breaches 16, 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 30).
107. 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 16, 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.

C. Rating Inputs

108. 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, U.S. public finance, insurance, financial institutions, and sovereign rating inputs

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

investment's rating input if unrated:

110. 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.
111. 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.
112. If an issuer rating is not available but a midmarket evaluation rating from S&P Global Ratings is available, then the rating input is the lowest corresponding S&P Global Ratings' rating level, as described in table 14 of "Mid-Market Evaluation Rating Methodology," published Nov. 20, 2014. For instance, for MM1 and above, the rating input is 'BBB'; for MM7, the rating input is 'CCC-'.
113. 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 Section VI. Other Credit Related Opinions, A. Credit Estimates in "S&P Global Ratings Definitions," published Aug. 18, 2016).
114. If S&P Global Ratings has provided a mapping for the asset, 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 Scale," published May 8, 2014).
115. If there is another NRSRO rating on the issuer and it is a public rating and 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-'.
116. 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.
117. 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.
118. 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. In order 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.

119. 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

120. If a fund invests in a fund that is rated on S&P Global Ratings' principal stability fund rating (PSFR) scale, we apply the subscribed rating. For example, we apply the 'AAA' factor for a 'AAAm' rated fund.
121. For funds investing in 2a-7 registered government money market funds that S&P Global Ratings does not rate, we apply a rating input of 'A-1+' 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.
122. For funds invested in all other 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, U.S. public finance, insurance, financial institutions, or sovereign rating inputs

123. 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, U.S. public finance, insurance, financial institutions, or sovereign asset, and none of the other options apply in Appendix C, we apply 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 a long-term Moody's or Fitch rating. We lower that by one notch if investment grade and by two notches if speculative grade and 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) International public finance, GRE, or funds

124. We do not map Moody's or Fitch international public finance, GRE, or 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

125. 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

126. The mapping of long- and short-term ratings reflects "Methodology For Linking Short-Term And Long-Term Ratings For Corporate, Insurance, And Sovereign Issuers," published May 7, 2013, and reflects the column titled "Strong or

adequate liquidity*". This mapping of short-term to long-term ratings in table 1 covers the vast majority of rated issuers. However, some assigned ratings do not reflect that column's mapping.

127. 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 364 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 364 days, we assign the factor associated with 'A'.
128. In another example, an investment whose maturity is 364 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.

D. Derivation Of Factors For Issues, Issuers, Or Counterparties Assigned Short-Term Ratings And Fund Rating Thresholds

1) Fund credit quality matrix factors

129. Credit factors are differentiated by credit quality (based on rating or rating input) and maturity. The credit factors are differentiated for three maturity categories: less than or equal to three months (90 days or less), greater than three months (greater than 90 days) to less than one year (as many as 364 days), and one year or longer (greater than 364 days).
130. For investments with long-term ratings and whose maturities are one year or longer, the average one-year probabilities of default observed in our long-term ratings default and transition data (September 1987 to May 2015) was used to inform our proposed fund credit factors. Factors for the modified rating levels (e.g. 'AA+', 'AA-', 'A+', 'A-', etc.) are linearly interpolated between the category factors.
131. Factors for investments whose maturities are shorter than one year, and are not rated speculative grade, are informed by the average default rates observed in our historical default and transition data for short-term ratings (September 1987 to May 2015). The factors for speculative-grade investments are not differentiated by maturity and are informed by the long-term ratings default and transition data.
132. We establish the two maturity buckets shorter than one year (90 days or less and less than 365 days but greater than 90 days), in addition to the bucket for investments whose maturities are greater than 364 days, to better evaluate credit risk for funds focused on strategies that emphasize differing sections of the credit curves and maturities. The net effect is that short-dated maturities of lower-rated investments have similar credit quality to higher-rated longer maturity investments. For example, the factor 45 applies to 'A-2' investments ('A-' to 'BBB') whose maturity is 90 days or less, and the factor 40 applies to 'A-1' investments ('A' and 'A+') whose maturity is greater than 90 days but less than or equal to 364 days, as well as to 'AA' investments whose maturity is one year or greater.

2) Fund rating thresholds

133. The fund rating thresholds (see table 3) are calibrated to the asset factors for maturities greater than 364 days and reflect our forward-looking horizon of one year. We apply the same factor at each rating level for all assets whose maturity is greater than 364 days. Our rating horizon of one year applies to funds whose portfolios are actively managed. We assume that managers we view as "adequate" will effectively manage credit risk. This typically results in funds' portfolio of investments changing each year. Our rating sensitivity tests address possible credit deterioration when portfolio risk is indicated. Our lowering of the FCQR when management is less than adequate also addresses management credit risk in the portfolio. We could assign different factors for investments whose maturities exceed one year but do not because of the combination of active portfolio management and the qualitative assessments embodied in the criteria. In addition, we back-tested by looking at credit performance of funds in 2008 and 2009 and observed that the proposed factors and thresholds would have resulted in ratings stability for funds assigned FCQRs.
134. For passively managed funds, the credit risk is addressed in the qualitative assessments as well as through portfolio substitution, which is typical of these funds since they are required to maintain sufficient tracking to fund benchmarks. This typically results in portfolio changes each year.
135. We determine the thresholds based on an assumed mix of assets. The thresholds represent 60% of the higher one-year rating factor and 40% of the lower rating factor. For example, the 'AAA' factor is 10 and the 'AA+' factor is 25. The 'AAAf' threshold is $(10 \times 0.6) + (25 \times 0.4)$, which equals 16. This mix of 60% and 40% reflects our view of a representative mix of assets in funds after transition of asset ratings during a year of exposure to their credit risk.

E. Ratings Definitions

136. The following revised ratings definitions will apply once the criteria are updated. Current rating definitions are found in "S&P Global Ratings Definitions," published Aug. 18, 2016.
137. 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. Fund credit quality ratings, identified by the 'f' suffix, are assigned to fixed-income funds and other actively managed funds that exhibit variable net asset values. Unlike traditional credit ratings (e.g., issuer credit ratings), a fund credit quality rating does not address a fund's ability to meet payment obligations and is not a commentary on yield levels. Fund credit quality ratings are accompanied by a fund volatility rating (i.e., 'Af/S3') to communicate our opinion on the risks not addressed by a fund credit quality rating. The ratings reflect the credit risks of the portfolio investments, the level of counterparty risk, and the risk of the fund's management ability and willingness to maintain current fund credit quality.

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.

Table 9

Fund Credit Quality Ratings Definitions* (cont.)	
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.

F. Definitions

Concentration eligible GREs

138. 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.

RELATED CRITERIA AND RESEARCH

Related Criteria

- Request For Comment: Fund Volatility Ratings Methodology, Sept. 26, 2016
- Principal Stability Fund Rating Methodology, June 23, 2016
- Global Methodologies And Assumptions For Corporate Cash Flow And Synthetic CDOs, Sept. 17, 2015
- Mapping A Third Party's Internal Credit Scoring System To Standard & Poor's Global Rating Scale, May 8, 2014
- Group Rating Methodology, Nov. 19, 2013
- Assessing Bank Branch Creditworthiness, Oct. 14, 2013
- Counterparty Risk Framework Methodology And Assumptions, June 25, 2013
- Methodology For Linking Short-Term And Long-Term Ratings For Corporate, Insurance, And Sovereign Issuers, May 7, 2013
- Guarantee Criteria--Structured Finance, May 7, 2013
- Methodology: Updated Fund Credit Quality Ratings Criteria For Counterparty Transactions, July 22, 2011
- Australian And New Zealand Fund Credit Quality Ratings Criteria, July 20, 2009
- Fund Credit Quality Rating Criteria, Feb. 2, 2007

These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as S&P Global Ratings assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.

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