全球債券基金評等準則

主要準則

本報告取代舊有之同名準則報告，出版日為 2014 年 12 月 12 日。

範圍

本準則適用於債務與債類證券投資組合，其中包括短期與長期債券基金、貸款基金、地方政府投資組合 (LGIPs)、債券指數型基金及私人管理的投資組合。這類投資組合可包含各種短期與長期債務及債類工具，例如商業本票、存單、債券、貸款、優先證券、反向買回協議、主權債務、結構性融資證券及信用違約交換 (CDS)。債券基金評等的授予對象為資產組合，而非單一證券。此一評等概不授予封閉式基金或投資信託發行的債務，惠譽為其另訂準則，請見*封閉式基金與市值結構之評等*。即便如此，全球債券基金評等準則可用於封閉式基金及投資信託投資組合本身的評等。

主要評等考量

投資組合信用風險：基金信用品質評等 (在末尾加上「f」作為表示) 主要受到投資組合加權平均評等因素 (WARF) 的影響，旨在衡量易受信用違約損失的程度。

資產層級評等因素：資產組合的 WARF 來自惠譽為每項資產及／或交易對手設定的信用風險因素，這類因素係以公開評等、信用意見或其他可比較違約風險衡量方式以及到期日作為根據。

資產經理人評估：惠譽檢視投資組合經理人的能力，據以評估經理人是否適格、適任且能管理投資組合。凡是未能通過評估的經理人，惠譽不會對其管理的投資組合進行評等。

法律及法規覆核：投資組合必須通過法律及法規篩選過程，包括投資組合資產的法律隔離與保障。

市場風險敏感度：在特定情況下，惠譽亦可授予輔助性的基金市場風險敏感度評等，以針對投資組合對利率風險、利差風險、匯率波動、槓桿等市場風險因素的敏感度表示意見，端視市場相關性或法規要求而定。

主動評等監控：惠譽要求提供每月的投資組合與相關績效統計資料，以監控各項評等。

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全球債券基金評等準則架構

惠譽全球債券基金評等準則的用途，在於授予投資組合的基金信用品質評等。這類評等係以傳統「AAA」等級表示，並在末尾加上「f」，有別於證券及發行人的傳統信用評等。為了配合特定市場的市場需求及／或法規要求，該準則亦可用於授予基金市場風險敏感度評等。基金信用品質與基金市場風險敏感度評等可單獨或一併授予，以反映基金投資人面臨的信用和市場風險，

為了符合國際債券基金評等的資格，基金或投資組合的多元化程度須達下限，債務人須達五人以上，而且該準則定義中債務人的集中度並未過高 (>30%)，除非有其他減輕風險的相關因素。這類因素可能包括未納入多元化程度考量範圍的高品質主權、超國家與機構發行人重大曝險。債務人曝險可能為「現金」或透過各種參照證券組合或指數的衍生性工具建構的合成部位。例如，針對從事總收益互換 (TRS) 交易的投資組合或基金，惠譽可分析交易對手與 TRS 合約所列固定收益證券組合的信用品質，據以授予債券基金評等。本報告結尾處說明了惠譽全球債券基金評等準則的限制。

惠譽針對特定市場授予國內評等，因為評等尺度係由當地監管部門決定。如欲深入瞭解惠譽配合國內評等調整準則的方式，請見附錄 A：國內債券基金評等。

- 基金信用品質評等：針對固定收益基金或投資組合整體信用狀況及易受違約損失的程度提出意見。這類評等係以投資組合部位的實際與潛在信用品質平均值作為根據。基金信用品質評等包含評等動能因素，從而因應投資組合長期維持特定信用品質的可能性。

- 基金市場風險敏感度評等：針對投資組合總收益及／或淨資產價值對信用利差、利率及其他特定市場風險參數變化的相對敏感度提出意見，並適時考量槓桿的影響。基金市場風險敏感度評等並未預測市場狀況變化的方向和幅度，因此並未預測特定基金或投資組合未來表現的好壞或好壞程度。基金市場風險敏感度評等並未衡量投資組合對極端風險的敏感度，這類風險可能源自次級市場流動性在特定時期內降低的情況。

受到積極管理的投資組合通常遵循一套投資指導原則。若投資原則有別於現有投資組合，本機構將考量相關評等是否應較為保守，以反映相關投資組合的可能變動。例如，惠譽可針對新上市的投資組合授予評等。在此情況下，初始投資組合可能無法完全由長期或目標投資組合代表其狀況。因此，在已滿足法律和監管覆核及對經理人之評估下，惠譽之評等可基於該投資組合事先議定之投資原則保守分析。此種情況下，本機構可對該分析額外調整，使其更能反映可能影響投資組合之潛在風險。

惠譽可設定基金信用品質評等及／或基金市場風險敏感度評等的定性上限，或針對惠譽認為過度運用槓桿的投資組合選擇不進行評等。具體而言，若投資組合的市場風險因素 (請見：基金市場風險敏感度評等準則) 已因槓桿操作而遠超出惠譽所訂的上限區間，惠譽可能拒絕賦予該基金評等。例如，若槓桿操作導致某個 5 年期「BBB」證券組合的市場風險因素達到 30 (沒有槓桿時的數值應為 5 左右)，惠譽或將認定槓桿過高而拒絕對該基金進行評等。

法律及法規覆核

基金與投資組合委任案的法律架構並不一致。惠譽將檢視投資組合或基金的法律環境，因為這與基金資產的法律隔離及估值有關。覆核作業將考量資產所有權認定方面的潛在難題，尤其是資產是否適度隔離並獲得保障，因而得以及時歸還。針對投資組合或基金資產的隔離與保障，惠譽若發現重大弱點，則不授予評等。

投資經理人之評估

惠譽針對積極管理型投資組合的投資經理人進行評估。本機構希望確認該經理人適格、適任且能管理投資組合。若無法確認這些條件，惠譽即不對該基金進行評等。經理人評估流程結束後，就能針對諸多投資組合進行評等。評估重點包括：

- 投資經理人的營運與財務穩定度、人員編制、技術資源、控管與治理。
- 檢視範圍內資產類別的管理績效紀錄。針對新上市的基金或新的投資經理人，惠譽將考量重要職員管理可比較委任案或策略的經驗。針對經理人績效紀錄不佳的基金，例如，經理人已有具代表性的違約紀錄，其嚴重性遠高於惠譽相關評等變化與違約研究反映的程度，則惠譽授予的基金信用品質評等，將低於以下所述 WARF 及基金信用品質分析結果反映的水準。

基金信用品質評等準則

基金信用品質評等係以投資組合部位的實際與潛在信用品質加權平均值作為根據。基金信用品質評等並非即時評等，因此已包含評等動能因素，以因應投資組合長期維持特定信用品質的可能性。

基金信用品質評等主要取決於投資組合的 WARF，並已考量負面評等觀察名單中的證券、準則中特定壓力測試的結果以及其他信用考量，例如交易對手風險、集中度與衍生性工具。

基金市場風險敏感度評等準則

惠譽可在特定情況下授予基金市場風險敏感度評等，端視市場相關性、法規要求及基金信用品質評等而定。基金市場風險敏感度評等的主要根據為基金投資組合利率持續期間 (修改後持續期間) 與利差持續期間的分析結果，並針對槓桿影響 (依照下列惠譽市場風險因素加以衡量，如適用) 進行調整。基金市場風險敏感度評等的尺度為「S1」(市場風險敏感度極低) 至「S6」(市場風險敏感度極高)。

評等監控

惠譽進行更新與維持評等的過程時，將檢視受評基金的最新與過往資訊。

惠譽要求受評基金定期提供基金投資部位的資訊。在大多數的情況下，惠譽要求基金至少每月提供這類資訊，法規限制導致資訊提供頻率降低的情況除外。如有可能，惠譽將規定這類資訊應由獨立於基金經理人的來源提供，即託管銀行或同等機構，然而惠譽若能定期確認資訊精確度，例如對照基金的稽核後年度財務報表，也將採納基金經理人提供的補充資訊，或是基金經理人提供的完整資訊。

惠譽要求提供投資組合部位的下列基本資訊：

- 證券名稱或相關辨識碼 (例如 ISIN 或 CUSIP 代碼，如適用)
- 基金基準貨幣目前的市值曝險 (CDS 名目價值)

惠譽亦可能要求提供其他資訊，以輔助分析作業，例如：

- 預期到期日 (資產擔保證券的加權平均年限，投資人擁有賣權時則以賣出日期為準)
- 法定最終到期日
- 下一個重置日
- 目前的證券評等 (包括觀察名單與展望，如適用)
- 貨幣
- 資產類別

惠譽與受評基金經理人定期舉行會議時，將討論避險策略 (如適用)。

惠譽承認，在少數情況下，投資組合重要指標的變動，可能暫時略為超出既有評等的評等準則範圍。例如，若相關資產的評等遭到調降，可能導致投資組合的 WARF 略高於投資組合現有評等類別的上限。明顯及／或持續偏離評等準則範圍的情況，固然將導致評等受到影響，但若資產經理人提出可信且可行的近期補救行動從而消除或減輕風險，惠譽通常可給予合理的寬限期。惠譽將針對這類個案逐一評估，以判定變動是否對於評等造成重大影響。

Global Bond Fund Rating Criteria

Master Criteria

This report replaces the Criteria Report of the same name, published on 12 December 2014.

Scope

This Criteria Report applies to portfolios investing in debt and debt-like securities, including short- and long-term bond funds, loan funds, local government investment pools (LGIPs), debt security exchange-traded funds and privately managed pools. They may contain a variety of short- and long-term debt and debt-like instruments, such as commercial paper, certificates of deposits, bonds, loans, preferred securities, repurchase agreements, sovereign debt, structured finance securities, and credit default swaps. Bond Fund Ratings are assigned to a portfolio of assets, rather than an individual security. The rating is not assigned to debt issued by closed-end funds or investment trusts. Fitch Ratings has developed separate criteria for this; see *Rating Closed-End Funds and Market Value Structures*. However, the Global Bond Fund Rating Criteria can be used to rate closed-end fund and investment trust portfolios themselves.

Key Rating Drivers

Portfolio Credit Risk: The Fund Credit Quality Rating (denoted with an 'f' suffix) measures vulnerability to losses as a result of credit defaults and is primarily influenced by a portfolio's weighted average rating factor (WARF).

Asset-Level Rating Factors: The WARF of the portfolio of assets is derived from Fitch-defined credit risk factors applied to each asset and/or counterparty based on their public ratings, credit opinions or other comparable measures of default risk, and their maturity.

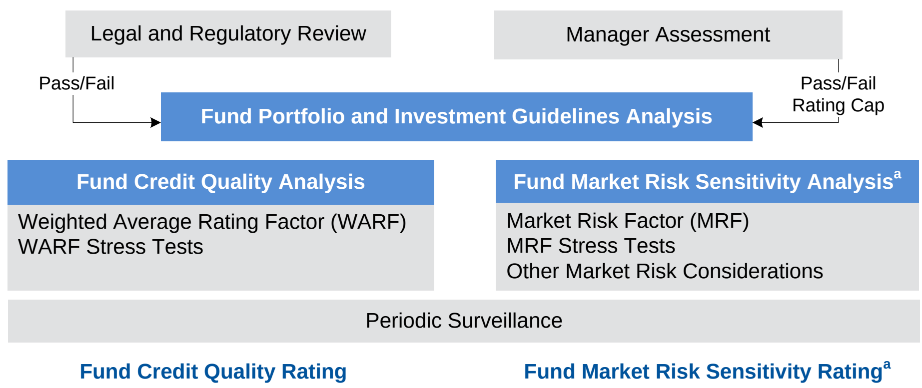
Asset Manager Assessment: Fitch reviews the portfolio manager's capabilities to assess whether it is suitably qualified, competent and capable of managing the portfolio. Fitch will not rate portfolios from managers that fail to pass this assessment.

Legal and Regulatory Review: Portfolios must pass a legal and regulatory screening process, including the legal segregation and security of the portfolio's assets.

Market Risk Sensitivity: In certain circumstances, subject to market relevance or regulatory demand, Fitch may also assign a complementary Fund Market Risk Sensitivity Rating to express an opinion on a portfolio's sensitivity to market risk factors, such as interest-rate risk, spread risk, currency fluctuations, and leverage.

Active Ratings Surveillance: Fitch requests monthly portfolio holdings and relevant performance statistics to monitor the ratings.

Global Bond Fund Rating Criteria – Simplified Diagram



[a] Subject to market relevance or regulatory demand
Source: Fitch

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Global Bond Fund Rating Criteria Framework

Fitch's Global Bond Fund Rating Criteria are used to assign portfolios a Fund Credit Quality Rating. The ratings are expressed on the traditional 'AAA' scale, with the addition of an 'f' suffix to distinguish it from traditional credit ratings assigned to individual issues and issuers. In certain markets where there is market and/or regulatory demand, the criteria also may be used to assign a Fund Market Risk Sensitivity Rating. Fund Credit Quality and Fund Market Risk Sensitivity ratings may be assigned alone or together to reflect the credit and market risks to which fund investors are exposed.

To qualify for international scale Bond Fund Ratings a fund or portfolio must demonstrate a minimum level of diversification, across five obligors or more and no excessive concentration (>30%) with any of those obligors under this criteria, unless there are other relevant mitigating factors. These might include material exposures to high quality sovereign, supranational and agency issuers, which are not covered by these diversification considerations. Obligor exposures can be 'cash' or synthetic, achieved through derivatives that reference a portfolio of securities or an index. For example, Fitch could assign Bond Fund Ratings to a portfolio or fund which engages in total return swaps (TRS), basing its analysis on the swap counterparty and the credit quality of the underlying portfolio of fixed-income securities referenced under the TRS. Limitations to Fitch's Global Bond Fund Rating Criteria are presented at the end of this report.

In certain markets, Fitch assigns National Scale ratings where the rating scale may be determined by the local regulatory authorities. For more information on how Fitch adapts this criteria for National Scale ratings see Appendix A: National Scale Bond Fund Ratings.

- Fund Credit Quality Rating: an opinion on the overall credit profile and vulnerability to losses as a result of defaults within a fixed-income fund or portfolio. The ratings are based on the actual and prospective average credit quality of the underlying portfolio holdings. Fund Credit Quality Ratings have an element of rating momentum embedded and, therefore, address the likelihood that a portfolio maintains a given credit quality over time.
- Fund Market Risk Sensitivity Rating: an opinion on the relative sensitivity of a portfolio's total return and/or net asset value to assumed changes in credit spreads and interest rates as well as certain other market risk parameters, and taking into account the effects of leverage, where applicable. Fund Market Risk Sensitivity Ratings do not predict the direction or magnitude of changes in market conditions and therefore do not predict whether, or the extent to which, any particular fund or portfolio will perform favourably or adversely in the future. Fund Market Risk Sensitivity Ratings do not gauge the sensitivity of a portfolio to extreme risks that may result from reduced liquidity in secondary markets during certain periods.

Actively managed portfolios typically follow a set of investment guidelines. The agency considers whether investment guidelines that differ from the current portfolio should lead to more conservative ratings to reflect potential changes in the underlying portfolios over time. For example, Fitch may assign ratings to newly launched portfolios. In such cases the initial portfolio may not be fully representative of the longer-term or target portfolio. Therefore, subject to a satisfactory legal and regulatory review and manager assessment, Fitch may base its ratings on a conservative analysis of the portfolio's agreed investment guidelines. In such cases the agency may make additional adjustments in its analysis to better reflect potential risks that may affect the portfolio.

Fitch may impose qualitative caps on the Fund Credit Quality Rating and/or Fund Market Risk Sensitivity Rating or elect not to rate portfolios that, in Fitch's opinion, use an excessive amount of leverage. Specifically, if a portfolio's Market Risk Factor (see: Criteria for Fund Market Risk Sensitivity Ratings, below) was well in excess of Fitch's upper bound due to leverage then Fitch may decline to rate the fund. For example, if the calculated Market Risk Factor on a portfolio of five-year ‘BBB’ securities were 30 due to leverage (compared with around 5 without leverage), Fitch would judge the level of leverage excessive and would decline to rate the fund.

Legal and Regulatory Review

The legal frameworks in which funds and portfolio mandates are established are not uniform. Fitch reviews the legal environment in which a portfolio or fund operates as it relates to legal segregation of fund assets and valuation practices. This review considers the potential difficulties that may arise in identifying ownership of assets and, in particular, whether the assets are appropriately segregated and secure such that the assets would be returned in a timely manner. Should Fitch identify material weaknesses in the segregation and security of a portfolio or fund’s assets, it will not assign a rating.

Investment Manager Evaluation

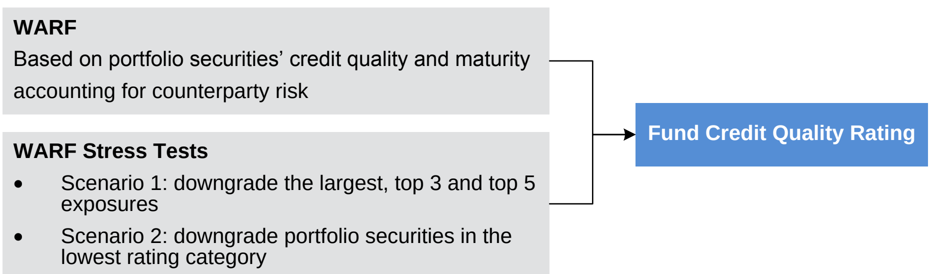
Fitch evaluates the investment manager responsible for actively-managed portfolios. The agency seeks to establish that the investment manager is suitably qualified, competent and capable of managing the portfolio. If this cannot be established, Fitch will not rate the fund. Multiple portfolios can be rated once the manager assessment process has been completed. Areas of focus include:

- The investment manager’s business and financial stability, staffing and technology resources, controls and governance.
- Track record in managing the asset class under review. Fitch takes into consideration the experience of key staff in managing comparable mandates or strategies in the case of newly launched funds or investment managers. For funds overseen by a manager whose track record is weak, for example, a manager with a representative default history, which is materially higher than that implied by relevant Fitch transition and default studies, Fitch’s Fund Credit Quality Rating will be lower than otherwise implied by the WARF and the fund credit quality analysis detailed below.

Criteria for Fund Credit Quality Ratings

Fund Credit Quality Ratings are based on the actual and prospective weighted average credit quality of the underlying portfolio holdings. Fund Credit Quality Ratings are not point-in-time and, therefore, have an embedded element of rating momentum to address the likelihood that a portfolio maintains a given credit quality over time.

Fund Credit Quality Rating – Simplified Diagram



Source: Fitch

Fund Credit Quality Ratings are principally driven by the WARF of the portfolio, factoring in securities on negative Rating Watch, specific stress tests as defined in these criteria and other credit considerations such as counterparty risk, concentration and derivatives.

The Weighted Average Rating Factor

Fitch calculates the portfolio's WARF as the primary driver of the Fund Credit Quality Rating. The Fund Credit Quality Rating is largely guided by the rating implied by the WARF calculation, as detailed in the table at the bottom of this section. A portfolio's WARF is the market value-weighted sum of each portfolio security's credit rating factor, including the maturity of the instrument, based on legal final maturity dates in most cases. Exceptions comprise structured finance securities, in which case Fitch looks to the weighted average life, and securities that benefit from a demand feature or put option at the investor's option, which are considered on the maturity terms of such feature.

Fitch's current rating factors can be found in the table below. They are derived from observed cumulative 10-year default frequencies, consistent with the approach taken in Fitch's Portfolio Credit Model. These factors are updated periodically. The rating factors applied or the approach to determining the applicable rating factors may differ in certain National Markets to reflect the specific characteristics of that market as detailed in *Appendix A*. A portfolio's WARF is calculated based on the market value (notional for CDS or other comparable derivatives) of the portfolio's underlying assets. Consequently, the contribution of individual securities to the overall portfolio WARF will change with those securities' market values. Short positions count as negative market value exposures in the agency's WARF calculation. For example a minus 50bp short position on a two-year 'BBB' exposure would result in a rating factor of minus 0.5 x 2.0 = minus 1.0. *Appendix B* contains an example of the WARF calculation.

Fund Credit Quality Rating – Credit Risk Factors

By underlying security rating category and remaining maturity

Residual maturity	AAA	AA	A	BBB	BB	B	CCC	CC/C
0 – 90 days	0.00	0.01	0.2	0.6	5.0	20.0	40	100.0
91 – 397 days	0.01	0.1	0.3	1.0	7.0	28.0	62.8	100.0
398 days – 3 years	0.1	0.2	1.0	2.0	10.0	32.2	62.8	100.0
> 3 years	0.2	0.6	1.6	4.5	17.4	32.2	62.8	100.0

Source: Fitch

The WARF is calculated at the category level (e.g. 'BBB') rather than the notch level (e.g. 'BBB+'). The WARF represents a portfolio's average credit risk and helps in comparing intrinsic credit quality across different portfolios.

When calculating the WARF, Fitch assumes all securities subject to a negative Rating Watch (or comparable nomenclature under other rating scales) are rated one notch lower than the assigned rating. No comparable adjustment is made for securities that are assigned a positive Rating Watch or for securities subject to an Outlook, whether positive or negative. For securities that only carry a short-term rating, Fitch uses the conversions detailed in the margin table on the left.

Calculating WARF

Factors applied to securities with only short-term ratings

ST Rating	Factor
F1+	AA
F1	A
F2	BBB
F3	BBB

Source: Fitch

In cases of highly concentrated funds, or derivatives-based funds with a low number of counterparties, Fitch may credit-link the rating of the fund to that of the lowest rated counterparty. Specifically if a fund has more than five but less than 10 obligor exposures, other than relating to high-quality sovereigns, supranationals and agencies, and any one of those exceeds 30% of the total portfolio, Fitch will credit link the Fund Credit Quality rating to that of the lowest rated obligor or counterparty.

Fitch uses issue-specific ratings in its analysis, which take into consideration subordination and potential collateralization. The agency starts with its own ratings. Where these ratings are not available, the lowest of other ratings assigned by recognised global agencies is applied. Where a fund invests in diversified positions (such as CDS indices), Fitch uses the weighted-average rating of the index in its WARF calculation. For a single name credit default swap, Fitch considers the rating of the reference entity.

For assets that are not publicly rated by one or more globally recognised rating agencies, Fitch will assume the asset is rated 'CCC' for the purpose of its WARF calculation. There are two exceptions to this approach: first, if Fitch maintains, or asks the relevant analytical team at Fitch to provide, a credit opinion or a privately-monitored rating. Second, in limited circumstances, the agency may consider the fund manager's own credit assessments, if the Fitch rating committee judges them to be comparable to the agency's own internal credit assessment. This approach would, however, only be on a case-by-case basis and the agency would expect securities with ratings obtained in this manner to make up in aggregate 10% or less of the portfolio.

Guideline WARF Ranges

WARF range	WARF-implied fund credit quality rating
0.00 - 0.3	AAA
0.3 – 1.0	AA
1.0 – 2.6	A
2.6 – 8.8	BBB
8.8 – 22.3	BB
22.3 – 42.4	B
42.4 – 100	CCC and below

Source: Fitch

Counterparty Risk

Portfolios may be exposed to counterparty risk from different sources, including repurchase agreements, swap counterparties, or cash deposits. Counterparty exposures that are not subject to frequent margining and appropriate levels of collateralisation are not eligible exposures in Fitch-rated funds. In the case of repurchase agreements, Fitch typically bases its WARF calculation on the credit quality (ie rating) of the counterparty and the term of the repo contract.

Fitch may, however, consider the quality of the collateral for the purpose of its WARF calculation. Specifically, where the repo contract is fully backed by liquid collateral of high quality (i.e. highly rated government securities), where there is substantial visibility on the collateral composition and the composition of the collateral will remain consistent, and the repo contract is governed by a legal regime under which there is only remote risk of any stay on repo collateral in the event of counterparty failure, then Fitch will look to the credit quality of the underlying collateral and the maturity of the repo contract in its WARF calculation.

Cash

Funds may have cash balances of different sizes at different times, held in bank deposits or invested in money market instruments. Fitch treats such exposures as it would any other exposure in its rating analysis. For example, Fitch would use a rating factor of 0.01 for a 60-day time deposit with an 'AA'-rated bank.

Some funds may be able to leave cash uninvested at the fund's custodial bank. In instances where there is full segregation of uninvested cash balances at the fund's custodian, and where such cash is legally and operationally ring-fenced from other bank creditors, such as under UCITS V legislation, a rating factor of 0 is applied for the purpose of WARF calculation. In other instances, Fitch uses the rating factor corresponding to the bank credit quality in its portfolio WARF calculation

WARF Stress Tests

Fitch applies specific stress tests to the WARF to gauge the final rating's sensitivity to downward ratings migration of specific exposures. Fitch applies the following stress tests:

- Downgrade the credit ratings of the largest top three and top five exposures by one notch and recalculate the WARF. These scenarios evaluate potential portfolio concentration risk, which may entail greater tail credit risk and vulnerability to losses.

- Downgrade all portfolio securities that are rated two categories or more below the (non-stressed) WARF-implied fund rating level by one 'notch' and recalculate the WARF. This scenario captures the effect of potential credit 'barbelling'.

A rating committee analyses the sensitivity of the stressed WARFs to these stress tests when assigning a final Fund Credit Quality Rating. In the case of funds whose WARFs are particularly sensitive to the stress tests above, Fitch may assign lower ratings, including through the application of rating modifiers ('+' and '−') to reflect the relative risk of the fund within the rating category.

Criteria for Fund Market Risk Sensitivity Ratings

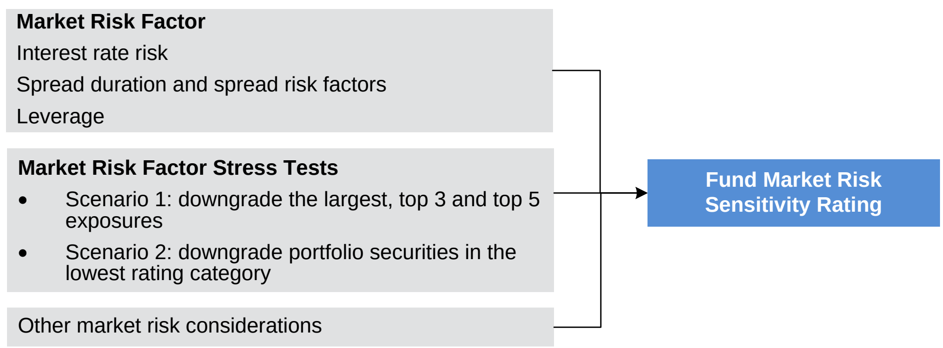
Fitch may assign Fund Market Risk Sensitivity Ratings in certain instances, subject to market relevance or regulatory demand, in addition to the Fund Credit Quality Rating. Fund Market Risk Sensitivity Ratings are primarily based on an analysis of a fund portfolio's interest rate duration (modified duration) and spread duration, and adjusted for the effects of leverage (where applicable), as measured by Fitch's market risk factor detailed below. Fund Market Risk Sensitivity Ratings are expressed on a scale ranging from 'S1' (very low sensitivity to market risk) to 'S6' (very high sensitivity to market risk).

Market Risk Sensitivity Ratings

Market risk sensitivity	Market risk sensitivity rating	Market risk sensitivity factor[a]
Very low	S1	<2.0
Low	S2	2.0-4.0
Moderate	S3	4.0-7.5
Moderate to high	S4	7.5-12.5
High	S5	12.5-17.5
Very high	S6	17.5-25.0

[a] Different cut-off points may be applied in certain national markets to reflect regulatory and structural characteristics of that specific market as detailed in Appendix A
Source: Fitch

Fund Market Risk Sensitivity Rating – Simplified Diagram



Source: Fitch

Market Risk Analysis: Fitch's Market Risk Factor

An analysis of the portfolio's market risk factor serves as the primary tool used in assigning Fund Market Risk Sensitivity Ratings.

A portfolio's market risk factor is calculated by combining the portfolio interest rate duration and risk-adjusted spread duration of the securities in the portfolio, and adjusting the result for the effect of any leverage. The weight of a security is the proportion of the market value of a portfolio represented by that security. As a rule, the higher the portfolio's market risk factor, the higher the sensitivity to interest rate, spread and other market risk variables.

Other market risk factors that Fitch may factor into its analysis include concentration risk, currency risk, hedging strategies and other risks.

Interest Rate Risk

Fitch's primary measure of interest-rate risk is modified duration (i.e. sensitivity to changes in the levels of interest rates, assuming a parallel shift in the yield curve). Fitch evaluates interest-rate risk by analysing modified duration at the individual security and portfolio levels. The agency may also calculate a portfolio's weighted-average maturity to interest-rate reset date (WAM) in its interest-rate risk analysis as a conservative proxy for modified duration.

Spread Risk

Spread risk considers the portfolio's market value sensitivity to changing credit spreads. Credit spreads reflect a risk premium demanded by the market for holding securities of a 'lesser' quality than 'the highest quality' (usually government) securities — for credit, liquidity or technical reasons.

Spread risk can be measured by calculating a portfolio's spread duration (sensitivity to changing credit spreads) and adjusting that calculation according to a spread risk factor. The agency may also calculate a portfolio's weighted-average life (WAL) in its spread risk analysis as a conservative proxy for spread duration.

Fitch's spread risk factors, detailed in the table below, are based on the historic volatility of credit default swap (CDS) spreads, combined with an analysis of observed fixed-income index return volatility at each rating level as the breadth and availability of CDS spread data can vary. The analysis supporting the development of these factors therefore considers both the sensitivity to spread movements —as measured by the fund's spread duration —as well as the relative level of spread volatility observed historically.

Fitch applies no spread risk factor to 'the highest quality' securities, i.e. those rated 'AAA', and an incremental spread risk factor at the 'AA' level. Fitch's spread risk factors increase as credit quality decreases.

Spread Risk Factors[a]

	AAA	AA	A	BBB	BB	B	CCC and below
Spread risk factor	0.0	0.1	0.3	1.0	3.0	8.0	12.5

[a] Based on an analysis of Fitch Solutions non-financial corporate CDS spread volatility for the period 2007 – 2015 and Bank of America Merrill Lynch global fixed income market index total return volatility for the period –1997 -2015. Spread risk factors are based on volatility of observed CDS spreads relative to those observed at the 'AA' level
Source: Fitch

Spread risk is accounted for by multiplying the security's spread duration by the spread-risk factor corresponding to the credit quality of the security. This calculation is performed at an individual security level. An example of this calculation is presented in *Appendix B*.

Fitch recognises that some asset classes may have spread risk sensitivities that differ from the assumptions incorporated in its core Spread Risk Factors. Accordingly, as part of its rating analysis Fitch reviews the asset class, geography and security type exposures of funds it rates. Should Fitch determine that the fund has more than approximately a quarter of the portfolio in securities for which the absolute and/or relative spread risk sensitivity exhibits markedly different volatilities from those observed in CDS spreads and fixed-income index volatilities from which the spread-risk factors are derived, then Fitch will either apply a qualitative adjustment to the Market Sensitivity Rating implied from its core spread risk factors or adjust the spread-risk factors used in its rating analysis. This treatment will be disclosed in the associated rating action commentary.

Market Risk Factor = Duration + (Spread Duration[1] x Spread Risk Factor)

Portfolios may be constructed with very low sensitivity to interest-rate risk and materially greater exposure to spread risk by heavily investing in floating rate instruments. Given that floating rate notes typically reset quarterly, a portfolio composed largely of such securities will have very low interest-rate risk – 90 days or less to be precise – but the final maturity of these instruments may be longer, resulting in higher spread risk. The market risk factor calculated for such funds, therefore, can be low, particularly for higher rated portfolios and Fitch reserves the right to apply qualitative adjustments to its market risk factor calculation to recognise this bar-belling of risks.

Leverage (Financial and Economic)

Portfolios may employ leverage to achieve their investment objectives. This is done typically through securitised lending arrangements (notably reverse repurchase agreements), bank lines, margin financing or derivatives such as futures or total return swaps. Many derivatives or structured securities also create *de facto* or economic leverage, offering investors higher yields with lower upfront investment, at the expense of greater price and total return volatility.

When evaluating the impact of leverage on portfolios, Fitch applies a multiplier to its market risk factor in a linear manner. Building on the previous formula, the market risk factor calculation can be expanded to incorporate leverage as follows.

Market Risk Factor = [Duration + (Spread Duration x Spread Risk Factor)] x Leverage

Currency Risk

Portfolios may include unhedged multi-currency assets and/or liabilities. The impact of currency risk is assessed relative to the base currency of the portfolio in which the investment is made. If Fitch considers a fund to have material foreign-currency risk, it may apply a qualitative adjustment to the market risk factor.

A portfolio that is composed of a pool of securities denominated in different currencies but that offers investors a choice of the currency in which their participation is denominated, may have different Market Risk Sensitivity ratings for each currency class.

Any subsequent translation of returns into investors' own particular base (or accounting) currency from the currency in which the fund is denominated is not accounted for, and this risk remains for them to hedge — or not — accordingly.

Hedging

Some portfolios have the ability to use derivative instruments to hedge market risk or manage their risk exposures more dynamically. In its assessment, Fitch distinguishes between systematic hedging and discretionary trading/adjustment. Recognition for systematic hedging may be given in the Fund Market Risk Sensitivity Rating if the manager can demonstrate its ability structurally to reduce market risk sensitivity through these positions. For example, a fund may use interest-rate swaps (or other instruments) to reduce a portfolio's sensitivity to interest-rate risk. If the manager in this example can demonstrate to Fitch that the hedging strategy is both effective and consistently applied and that the manager has proven hedge management capabilities, then Fitch will factor the results into in its analysis. In this example, Fitch would base its market-risk-factor calculation on a lower duration than implied by the portfolio's actual holdings due to the effectiveness of the interest-rate hedging mechanism. Fitch considers counterparty quality as outlined in the Counterparty Risk section above.

[1] In the case of fixed-rate bonds and notes, the spread duration is the same as the first duration metric.

Stress Tested Market Risk Factor

Fitch applies specific stress tests to the MRF to gauge the final rating's sensitivity to concentration risk. Interest-rate and spread risk, however, remain the primary determinants of the Fund Market Risk Sensitivity Rating. Fitch applies the following stress tests:

- Downgrade the credit ratings of the largest, top three and top five exposures by a notch and recalculate the MRF. These scenarios evaluate potential portfolio concentration risk, which may entail greater market-risk sensitivity.
- Downgrade all portfolio securities that are rated two categories or more below the (non-stressed) WARF-implied fund credit quality rating level by one notch and recalculate the MRF. This scenario captures the effect of credit barbelling.

A rating committee analyses the sensitivity of the MRFs to these stress tests, which impact the spread risk-factor calculations, when assigning a final Fund Market Risk Sensitivity Rating. In the case of funds whose MRFs are particularly sensitive to the stress tests above, Fitch may adjust the ratings to reflect higher market risk sensitivity than otherwise implied by the MRF.

Surveillance

Fitch reviews current and historic information on rated funds as part of its process for updating and maintaining its ratings.

Fitch requires rated funds provide the agency with periodic information on the fund's holdings. In most cases Fitch requires this information at least monthly, barring situations in which regulatory restrictions mean that the frequency of information provision is reduced. To the extent possible Fitch requires this information to come from a source independent of the fund manager, namely the custodian bank or equivalent, but it will accept incremental information provided by the fund manager itself or full information from the fund manager itself where it can periodically verify the accuracy of that information against, for example, the fund's audited annual financial statements.

At a minimum Fitch requires the following portfolio holdings information:

- Security name or relevant identifiers (such as ISIN or CUSIP numbers, where applicable)
- Current market value exposure (notional for CDS) in fund's base currency

Fitch may also request additional information to aid its analysis such as:

- Expected maturity (WAL for ABS, put date if put held by investor)
- Legal final maturity
- Next reset date
- Current issue specific ratings (including Watches and Outlooks where applicable)
- Currency
- Asset type

At its periodic meetings with managers of rated funds, Fitch will discuss hedging strategies (where applicable).

Fitch recognises that, in limited circumstances, changes in key portfolio metrics may moderately and temporarily move outside the agency's rating criteria for its assigned ratings. For example, an underlying asset downgrade may moderately increase the portfolio's WARF above the limit for the portfolio's current rating category. While material and/or continuous deviations from rating criteria will have rating implications, there is often a reasonable basis for a short grace period, provided the asset manager has proposed credible and achievable nearterm remedial actions to resolve or mitigate the risks. Fitch will evaluate such instances on a case-by-case basis to determine whether the changes are material to the ratings.

Variations From Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature, or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

Limitations

Analysis and rating decisions are based on relevant public and non-public information. The main sources of this information are the issuer and/or fund administrator and the public domain. This includes publicly available information pertaining to the fund, such as audited and unaudited (e.g. interim) financial statements and regulatory filings. The rating process may incorporate information provided by third-party sources. The relevant source of information material to the rating is disclosed in every rating action commentary.

Fitch conducts a reasonable investigation of the factual information it relies on, in accordance with its rating methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or jurisdiction. Issuers may choose not to share certain information with external parties, including rating agencies, at any time. While Fitch expects each issuer that has agreed to participate in the rating process, or its agents, will supply promptly all information relevant for evaluating both the ratings of the issuer and all relevant securities, Fitch neither has, nor would it seek, the right to compel the disclosure of information by any issuer or any agents of the issuer.

This is a global master non-credit criteria report addressing the agency's international and national rating scales. Not all rating factors in these criteria may apply to each rating action. Each specific rating action commentary or rating report will discuss those factors most relevant to the individual rating action.

The primary focus of this criteria report is on portfolios of debt securities, such as bond and loan funds, short-term bond funds, LGIPs, fixed-income debt security exchange-traded funds and managed pools of fixed-income debt securities. These funds may contain a variety of debt instruments, such as bonds and loans, bank capital, sovereign debt and structured finance securities. In general, Fitch rates money market funds under its *Global Money Market Fund Rating Criteria*.

Funds with a broader risk mandate are likely to be rated by Fitch under these criteria. While investors expect highly rated short-term bond funds to offer a degree of liquidity and limited downside risk to fund NAV, they are typically not directly comparable with money market funds, where capital preservation and liquidity are embedded within fund operating guidelines and, in certain jurisdictions, mandated by regulation.

This report does not address the ratings of debt issued by US and non-US leveraged closed-end funds regulated under the Investment Company Act of 1940, as amended. These funds are specifically addressed in the agency's criteria report: Rating Closed-End Funds and Market Value Structures.

Another limitation to Fitch's bond fund ratings includes event risk. This is defined as an unforeseen event which, until the event is known, is not included in the existing ratings. Prominent event risks for funds include sudden, dramatic and unexpected changes in financial market prices or liquidity, adverse regulatory decisions, litigation and massive redemptions, driven by the abovementioned factors or otherwise. Ratings may already include a reasonable assumption that a fund is vulnerable to financial market events or regulatory pressures, but the specifics of the event and its effect will not be known until the event is announced or completed, at which point the effect on ratings can be ascertained. Fitch does not give an opinion on the redemption risk investors may face for open-ended funds.

Additional limitations:

- The ratings do not predict a specific level or range of performance of a portfolio over any given time.
- The ratings do not opine on the suitability or otherwise of a portfolio for investment or any other purposes.
- Fund Credit Quality Ratings do not provide an opinion on any quality related to a portfolio other than the actual and prospective average credit quality of the invested portfolio.
- Fund Market Risk Sensitivity Ratings do not provide an opinion on any quality other than the sensitivity of a portfolio's total return and/or changes in net asset value to assumed changes in credit spreads and interest rates as well as certain other market risk parameters, and taking into account the effects of leverage, where applicable.

Fund Market Risk Sensitivity Ratings do not predict the direction or magnitude of changes in such market conditions and therefore do not predict whether, or the extent to which, any particular fund or portfolio will perform favourably or adversely in the future. Fund Market Risk Sensitivity Ratings do not gauge the sensitivity of a portfolio to extreme risks that may result from reduced liquidity in secondary markets during certain periods or, in the case of closed-end funds, the effects of secondary market prices on the fund's shares.

For Fund Credit Quality Rating and Fund Market Risk Sensitivity Rating definitions please refer to the Fitch Ratings website

(https://www.fitchratings.com/creditdesk/public/ratings_defintions/index.cfm).

Appendix A: National Scale Bond Fund Ratings

The agency assigns National Scale Ratings to funds operating in countries where, for some rating factors, a comparison with international ratings may not be applicable. In such instances, those factors are evaluated relative to local market features. Each National Rating Scale is unique and is defined to serve the needs of its local market. Comparisons between different national scales, or between an individual national scale and the International Rating Scale, are inappropriate and potentially misleading.

Consequently, National Bond Fund Ratings are identified by the addition of a special identifier for the country concerned, such as 'AAf(mex)/S1(mex)' for National Bond Fund Ratings in Mexico. In certain countries, the National Bond Rating scale may follow specific market standards as defined by the local regulator. Fitch publishes these rating scales on local Fitch websites to serve those specific markets. Below are links to websites where local scales and rating definitions can be found:

National Scales and Definitions

Country	Website address for national scale fund credit quality ratings and market risk sensitivity ratings
Chile	http://www.fitchratings.cl/Links/Definiciones/default.aspx
Colombia	http://www.fitchratings.com.co/Links/Definiciones/default.aspx
Costa Rica	http://www.fitchca.com/Links/Definiciones/default.aspx
Dominican Republic	http://www.fitchca.com/Links/Definiciones/default.aspx
Mexico	http://www.fitchratings.mx/Links/Definiciones/default.aspx
Panama	http://www.fitchca.com/Links/Definiciones/default.aspx

Source: Fitch

National Fund Credit Quality Ratings

For National Scale Fund Credit Quality Ratings in Latin America, where funds may invest cross-border[2], the portfolio or fund's credit quality is evaluated on the basis of country specific fund credit quality rating factors to derive the WARF. These country factors are derived by taking the international fund credit quality rating factors and the country's sovereign rating as a base. This base will be considered equivalent to 'AAA' on a national scale and issues that carry a lower rating than the sovereign would correspondingly carry lower national scale ratings for purposes of calculating the WARF.

Additionally, when providing Fund Credit Quality Ratings on a national scale, — and when Fitch or other globally recognised rating agency ratings are not available for securities within a portfolio— Fitch may consider credit ratings provided by local credit rating agencies in assessing portfolio credit risk. Fitch may adjust such ratings if Fitch considers it to be appropriate taking into consideration a review of the track record and outputs of the agency in question, when possible, and/or taking into account differences in rating methodologies with those of Fitch to ensure a consistent assessment of credit risk across the portfolio. Fitch would expect, however, that the majority of the assets within a portfolio would be rated by a globally recognised rating agency, and that a minority of the portfolio would be subject to this treatment.

Minimum Portfolio Size: In local markets where, as a result of regulation or standard market practice, fund structures are commonly used as pass-through structures, Fitch will not apply the minimum number of assets required for International Scale Ratings, and apply the standard WARF calculations on a look-through basis.

[2] In jurisdictions where funds are domestic only, Fitch transposes the international scale factors directly to the national market in question. EG in Taiwan, Fitch would use the same AA 180-397 day factor as it would use for international scale ratings (0.1); however, the Fund Credit Quality Rating itself is expressed on the Taiwan national rating scale which anchors the AAA(twn) point at the level of the Taiwan Sovereign.

National Scale Market Risk Factors

Fitch adjusts the market-risk-factor ranges at each rating level for national scale ratings to account for factors specific to national markets, such as independent interest-rate movements, the range of investment options in terms of duration, or the stage of capital market development. To make full use of the rating scale in national markets, the ranges for each market risk factor level are tighter than for International Scale ratings. An example is provided below.

Fund Market Risk Sensitivity Ratings

Market risk	Market risk sensitivity rating	Market risk factor
Very low	S1	<0.6
Low	S2	0.6-1.0
Moderate	S3	1.0-2.25
Moderate to high	S4	2.25-3.5
High	S5	3.5-6.0
Very high	S6	>6.0

Source: Fitch. Market Risk Factor levels may vary by country

Liquidity & Other Risk Factors

The spread risk factors used to calculate the Market Risk Sensitivity Factors already reflect a risk premium for liquidity, credit and technical reasons that are inherent to the individual securities. However, in certain national markets, regulators require the assessment of additional variables not mentioned in the body of this methodology to be included in the analysis of funds. For example, Fitch may be required to address specific aspects of liquidity. In such cases, Fitch complements its analysis with other elements that could impact the overall liquidity profile of a fund, such as investor concentration, fund structure, the percentage of the portfolio invested in short-term assets, among other variables. This assessment can result an adjustment to the Market Risk Sensitivity Rating to reflect greater market risk sensitivity if Fitch perceives any one element, or a combination of thereof, to be contributing to greater liquidity risk relative to the investment objective of the fund.

As another example, Fitch may be required to review the historical returns of a fund in its overall assessment. In all such cases, Fitch will consider the additional required factors as part of its methodology for ratings in that particular country and make adjustments to the Fund Credit Quality Rating or Fund Market Risk Sensitivity Ratings as appropriate. Fitch will detail these rating adjustments in Fitch's communications with the market, such as rating action commentaries and/or rating reports.

Non-Fixed Income Investments

While the scope of this methodology is to rate debt portfolios, in some cases, funds that are predominantly debt contain a small exposure in securities that are not debt, such as equities. In such cases, the Fund Credit Quality Rating reflects only the portion of the portfolio in debt and excludes other investments. Fitch shall disclose in its communications when this practice is applied. However, in all cases, Fitch expects the exposure to such investments that are not debt to be small. In cases where the portion of assets that is not debt exceeds 10%, Fitch will consider not rating the portfolio under this methodology.

Fitch will reflect the small exposure to non-debt securities in the Fund Market Risk Sensitivity Rating by assuming that the proportion of investments that is not debt to be subject to the highest market risk factor range and including this in the overall calculation of the Fund Market Risk Sensitivity Rating.

Appendix B: Example Calculations

Fund Credit Quality Rating

Sample Portfolio 1: Diversified Long-Term Portfolio

Credit Quality	Residual maturity	Market value percentage in portfolio (%)	Related rating factor
AAA	> 3 years	30	0.2
AA	> 3 years	30	0.6
A	> 3 years	30	1.6
BBB	> 3 years	10	4.5

Source: Fitch

WARF: [(30% X 0.2) + (30% X 0.6) + (30% X 1.6) + (10% X 4.5)] = **1.17**

- WARF indicates 'A' weighted average credit quality.
- Indicative Fund Credit Quality Rating category: **'A'.**

Sample Portfolio 2: Diversified Short-Term Portfolio

Credit quality	Residual maturity	Market value percentage in portfolio (%)	Related rating factor
AAA	91 to 397 days	30	0.01
AA	91 to 397 days	30	0.1
A	91 to 397 days	30	0.3
BBB	91 to 397 days	10	1.0

Source: Fitch

WARF: [(30% X 0.01) + (30% X 0.1) + (30% X 0.3) + (10% X 1.0)] = **0.22**

- WARF indicates 'AAA' weighted average credit quality.
- Indicative Fund Credit Quality Rating category: **'AAA'.**

Fund Market Risk Sensitivity Rating

Market Risk Factor = {Duration + (Spread Duration x Spread Risk Factor)} x Leverage

Sample Portfolio 3: Diversified, Long-Term Portfolio

Credit quality	Security type	Residual maturity	Market value percentage in portfolio (%)	IR duration	Spread duration	Spread risk factor
A	Fixed rate bonds	3 years	10	3	3	0.3
BBB	Floating rate bonds	4 years 6 months to reset	40	0.5	4	1.0
BBB	Fixed rate bonds	4 years	40	4	4	1.0
BB	Fixed rate bonds	4 years	10	4	4	3.0

Source: Fitch

Weighted average interest rate duration:
[(10% X 3) + (40% X 0.5) + (40% X 4) + (10% X 4)] = **2.50**

Risk-adjusted weighted average spread duration:
[(10% X 3 X 0.3) + (40% X 4 X 1.0) + (40% X 4 X 1.0) + (10% X 4 X 3.0)] = **4.49**

Market Risk Factor = weighted average interest rate duration + risk adjusted weighted average spread duration.

Market Risk Factor = 2.50 + 4.49 = 6.99

Indicative Fund Market Risk Sensitivity Rating: '**S3' (**Range: **4.0 to 7.5)**

Appendix C: Rating Process Description

The rating process goes through the following stages:

1. Initial contact between the fund manager and Fitch.
2. Initial information request and preliminary review of the requested information.
3. Initial meeting with relevant personnel.
4. Analysis of all information, preparation and distribution of committee package.
5. Rating committee decision and assignment of rating.
6. Communication of the rating decision and rationale to the fund manager.
7. Dissemination of the rating.
8. Surveillance and monitoring of the rating, except for point-in-time ratings.

This last stage is characterized by regular portfolio surveillance and communication with the fund manager. Fitch holds a formal meeting with each fund manager periodically, where topics such as long-term plans or strategies are discussed.

Appendix D: Fund Risk Analysis and New Funds or Changes in Investment Objective

Fitch performs a prospective analysis to ensure that the ratings provide a forward-looking view and exhibit stability over time. As part of this analysis, Fitch considers other risk factors inherent to the fund, specifically how the composition of the fund may vary according to market conditions, taking into account the fund's investment regime and strategy as discussed with fund management, as well as changes or shifts in these strategies.

To ensure that ratings maintain a prospective view, as part of its surveillance process, Fitch maintains regular contact with managers to understand the development of the fund's investment strategy, and to gather information on relevant changes in the composition of the portfolio that may affect key rating elements. Fitch will take rating actions to reflect new information when necessary.

An understanding of the fund management's intended strategy is particularly important in the case of new funds or where funds have changed their investment objective. When evaluating such funds Fitch requests:

- A current or model portfolio that reflects the strategy (or new strategy) to be applied
- A draft prospectus
- A discussion with relevant personnel on future strategy, plans, projections and other aspects.
- Manager information (for new funds)

In evaluating such funds, Fitch takes into account the current or model portfolio, fund limits and incorporates information learned on the investment strategy from discussions with the fund's management to reflect these elements

For example, a new fund (or a fund that has widened its investment objective) may have a very high quality and short-term investment portfolio that would otherwise be consistent with 'AAA' WARF or an S1 market risk factor. However, if the new investment mandate indicates that the manager has substantial flexibility on the composition of the portfolio, and if fund management indicates to Fitch that it intends to use this flexibility, then the rating assigned to the fund may be adjusted to indicate a higher credit risk and market risk sensitivity than that implied by the current portfolio alone. For example, the fund may be rated AA/S2.