S&P Global
Ratings

RatingsDirect®

How We Rate Fixed-Income Exchange-Traded Funds

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In second-quarter 2018, global fund net assets reached nearly $50 trillion, as positive global economic conditions continued to drive investments in a variety of strategies. One of the most successful investment strategies over the 12 months ended June 2018 was exchange-traded fund (ETFs). Global assets in this product grew to $4.8 trillion from $4 trillion (a 20% growth rate), and now total 9.8% of global fund assets, according to International Investment Funds Association.

Since the debut of Standard & Poor's Depositary Receipts (SPDRs; the first ETF on the American Stock Exchange in 1993), ETFs have risen from obscurity to relative dominance in an interconnected asset-management world. The ETF asset class still trails equity funds ($22.1 trillion), bond funds ($10.3 trillion), and money-market funds ($6 trillion). However, after 25 years of existence and the past five years of rapid growth, ETFs are working their way to the investment center stage.

S&P Global Ratings' forward-looking quantitative and qualitative approach to rating ETFs strives for a consistent and objective assessment. Our 82 rated fixed-income ETFs with $307 billion in assets comprise approximately half the entire fixed-income ETF market.

An ETF Primer

Today, a growing number of investors are considering ETFs when making asset-allocation decisions for their investment portfolios. In our view, the appeal of these securities includes their transparency, intraday liquidity, and relatively low expense ratio. ETFs are a pooled investment vehicle that is traded intraday on an exchange, like equity (stock). ETFs give investors the opportunity to own a security with characteristics of both an individual bond and a mutual fund. Whereas mutual funds are bought and sold using their net asset value (NAV) price, ETF investors have the option to trade on an exchange at market price or buy and sell shares through an authorized participant (an institutional investor, market maker, or broker-dealer that has entered into a legal agreement to create or redeem shares of the ETF) at their NAV price (see table 1).

Table 1

Fund Types Structural Differences

Characteristic	Exchange-traded funds	Open-ended mutual funds (OEMF)	Closed-end funds (CEF)
Exchange traded	Yes	No	No
Investor access/fund liquidity	Intraday: Secondary market	End of day only (primary processes)	Intraday: subject to market liquidity (secondary market)
	End of day: Primary processes		Intraday: subject to market liquidity (secondary market)
Pricing	Primary market: NAV	Transactions completed following calculation of the fund's end-of-day NAV	Reduced, generally determined at initial public offering (IPO)
	Secondary market: market determined	Transactions completed following calculation of the fund's end-of-day NAV	Reduced, generally determined at initial public offering (IPO)
Shares outstanding	Number of shares can change at end-of-day based on creations and redemptions	Number of shares can change at end-of-day based on purchases and redemptions	Supply of shares is restricted/limited
Holdings transparency	Typically daily	Daily, weekly, monthly frequency	Typically less frequency than OEMF, (i.e., monthly/quarterly)

Source: BlackRock & S&P Global Ratings.

Similar to mutual funds, ETFs provide investors with a wide selection of investment choices, but in a more flexible and cost-efficient manner. A fixed-income ETF will typically seek to track an index that follows an identified market, making it a tool to aid diversification and manage risk. Fixed-income ETFs can invest in local or global sovereign debt, corporate debt, municipal debt, or a combination of all these across investment and noninvestment-grade credit ratings. The fund's sponsor may choose various methods to track the index, such as market capitalization weighting, alternative weighting, or style-based factors.

Fixed-Income ETF Methodology Overview

We have rated fixed-income ETFs since 2002. We employ a multifactor approach to help investors identify the risks of an ETF. First, we use a quantitative approach to assess the credit quality of the portfolio holdings according to our historical transition and default studies. We combine this with a qualitative assessment of the fund sponsors' resources and capabilities. The goal of our analysis is to uncover sources of risk in a fund's portfolio and investment strategies, and to assess the potential impact on its ability to meets its objectives. We utilize our "Fund Credit Quality Ratings Methodology" and "Fund Volatility Ratings Methodology," (both published June 26, 2017, on RatingsDirect) to assess fixed-income ETFs.

FCQR Methodology Overview

An S&P Global Ratings' FCQR, also known as a "bond fund rating," is a forward-looking opinion about the overall credit quality of a fixed-income investment fund. FCQRs, identified by the 'f' suffix, are assigned to fixed-income funds, actively or passively managed, typically exhibiting variable net asset values. Unlike traditional credit ratings (e.g., issuer credit ratings), an FCQR does not address a fund's ability to meet payment obligations and is not a commentary on yield levels.

The FCQR scale ranges from 'AAAf' to 'Df':

- 'AAAf' indicates the credit quality of the fund's portfolio exposure is extremely strong.
- 'Df' indicates the fund's portfolio is predominantly exposed to defaulted assets and/or counterparties.

We determine a fund credit-quality rating (FCQR) for ETFs in four steps:

Step 1) Preliminary FCQR – quantitative assessment

Through a quantitative assessment of the fund's portfolio credit risk, we determine a "credit score" that forms the preliminary FCQR. The assessment reflects the weighted average credit risk of the portfolio of investments and is calculated by the aggregated percentage of investments held at each rating level ('AAA' to 'C') and maturity (less than 31 days, 31-92 days, 93–365 days, and more than 365 days).

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

Table 2

Example: Determining A Fund Credit Score

% of portfolio	Rating	Maturity	Factor	Contribution to score
50	AAA	90 days	2	1
35	AA	180 days	7	2.45
10	A	2 years	130	13
5	CCC	30 days	300,000	1,500.00
Fund credit score				1,516.45

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.

In our example above, the fund credit score of the assets, 1,516, falls between the 'BB+f' threshold of 1,500 and the 'BBf' threshold of 2,865. The preliminary FCQR is 'BBf' because it exceeds the threshold for 'BB+f'.

Table 3

Global Fund Rating Thresholds

Rating	Max score
AAAf	18
AA+f	37
AAf	58
AA-f	91
A+f	120

Table 3

Global Fund Rating Thresholds (cont.)

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

Through our comparable ratings analysis, which is a holistic review of a fund's portfolio credit quality and management strengths and weaknesses (Step 4) with outcomes of positive, neutral, or negative, we may adjust the final FCQR.

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 we do not rate, we determine a credit rating for the purpose of assigning an asset credit factor to the fund credit-quality matrix.

Step 2) Intermediate FCQR – qualitative (management) assessment

We assess a fund's management to determine its ability and willingness to maintain the FCQR. We look at four categories: management and organization, risk management, credit culture, and credit research. We assess each category holistically as strong, adequate, or weak.

If any category is weak, the intermediate FCQR is at least one notch lower than the preliminary FCQR, and may be more than one notch lower if a weakness is significant. 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. When no category is below adequate, the FCQR is unchanged by management. If we assess one or more categories as strong, and none as weak, a fund's management strength may factor in the final step, the comparable ratings analysis.

We typically evaluate management at the fund investment-manager level. We assess management's ability relative to its funds' strategies and its ability to execute in each category of the management assessment.

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.

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 manage the counterparty and credit risks of the fund's investments consistent with the current fund credit profile. Notably, we do not assess credit culture or credit research of funds that are passively managed against an index. This reflects our view that passively managed funds track the profile of the underlying index rather than specific credit-quality thresholds.

Credit research reflects the depth and quality of a manager's credit analysis. We review the processes for credit evaluation, approval, and monitoring, and examine the purpose, focus, and consistency of its credit policies. We evaluate the credit process by reviewing the credit research team, analysts' sector and industry experience, independent analysis, and resources and tools.

Step 3) Portfolio risk assessment - potential adjustment to intermediate FCQR

In assessing portfolio risk, we look at concentration risk, counterparty risk, liquidity, and fund credit score cushion. We assess each as neutral or negative. In our liquidity assessment, if a fund is passively managed (such as ETFs), we assess whether it has sufficient liquidity to enable portfolio rebalancing without being forced to liquidate illiquid assets.

Step 3a) Rating sensitivity tests - potential adjustment to intermediate FCQR

We also perform rating sensitivity tests, if applicable. They measure the potential change in the preliminary FCQR given three scenarios that measure a fund's concentration risk to the largest obligor, the lowest-rated obligor, and obligors on CreditWatch negative.

Step 4) Comparable ratings analysis

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

Final FCQR

The combination of the preliminary FCQR and intermediate FCQR result in the final FCQR.

FVR Methodology Overview

FCQRs are accompanied by fund volatility ratings (FVRs) to communicate our opinion about certain risks not addressed by FCQRs. An FVR is a forward-looking opinion about a fixed-income investment fund's volatility of returns relative to that of a reference index denominated in the base currency of the fund. For example, the reference index for a bond fund denominated in U.S. dollars would be composed of U.S. government securities.

FVRs reflect our expectation of a fund's future volatility of returns to remain consistent with its historical volatility of returns. The FVR scale ranges from 'S1+' to 'S5'. A rating of 'S1+' reflects funds with the lowest volatility whose asset maturities typically do not exceed one year. A rating of 'S5' reflects funds with the highest volatility, as well as additional portfolio and management risks such as high concentration risks or high leverage.

We determine FVRs in four steps, which include quantitative and qualitative assessments of a fund and its investment manager.

Step 1) Preliminary FVR – quantitative assessment

We assess the historical volatility and dispersion of fund returns relative to reference indices. In the primary assessment, we compare the standard deviation of monthly returns. And in the supplemental assessment, we compare the distribution of the monthly returns of the fund to those of reference indices. Step one results in the preliminary FVR.

Step 2) Intermediate FVR – portfolio risk assessment

We assess portfolio risk. We assess four primary portfolio risk indicators: duration, credit exposure, liquidity, and the combined impact of derivatives, leverage, foreign currency, and concentration. We evaluate these indicators and subindicators to determine whether the combination of these will lead to lower or higher volatility than what we observed in the preliminary FVR.

Step 3) Qualitative (management) assessment – potential adjustment to intermediate FVR

We assess management as per the FCQR. Steps two and three result in the intermediate FVR.

Step 4) Comparable ratings analysis

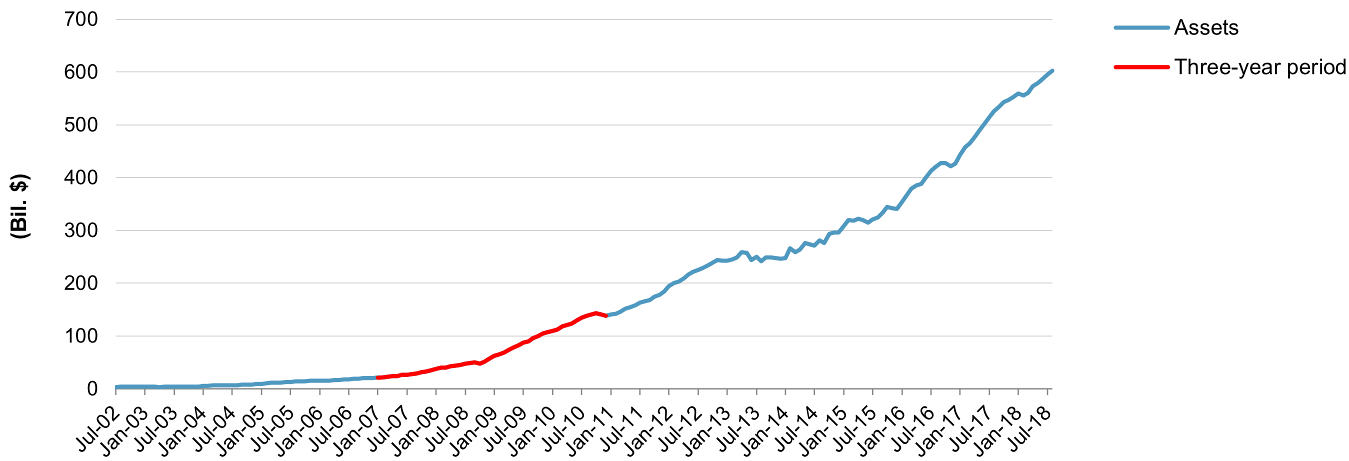
We compare the fund with other similar funds to determine whether a final adjustment of one rating category up or down is warranted to determine the final FVR.

ETF Market Trends

ETFs have continued their momentum by breaking record assets under management each year (see chart 1). We expect this momentum to continue with the rise of low-fee investment offerings. The additional layer of liquidity, ease of access, and lower cost options have helped grow the U.S. bond ETF market to over $600 billion from $3 billion. From 2007-2010, the fixed-income ETF market grew at a compound annual growth rate of 72%, mainly because of regulatory changes. Stricter banking regulations forced dealers to change their market-making role, which led investors to find alternative ways to allocate capital as liquidity in the bond market dried up. ETFs allowed investors to rebalance portfolios or gain broad market exposure without worrying about a lack of liquidity. As assets have reached record levels, bid-ask spreads have remained relatively tight, and secondary trading volume has continued to increase.

Chart 1

U.S. Fixed-Income ETF Asset Trends

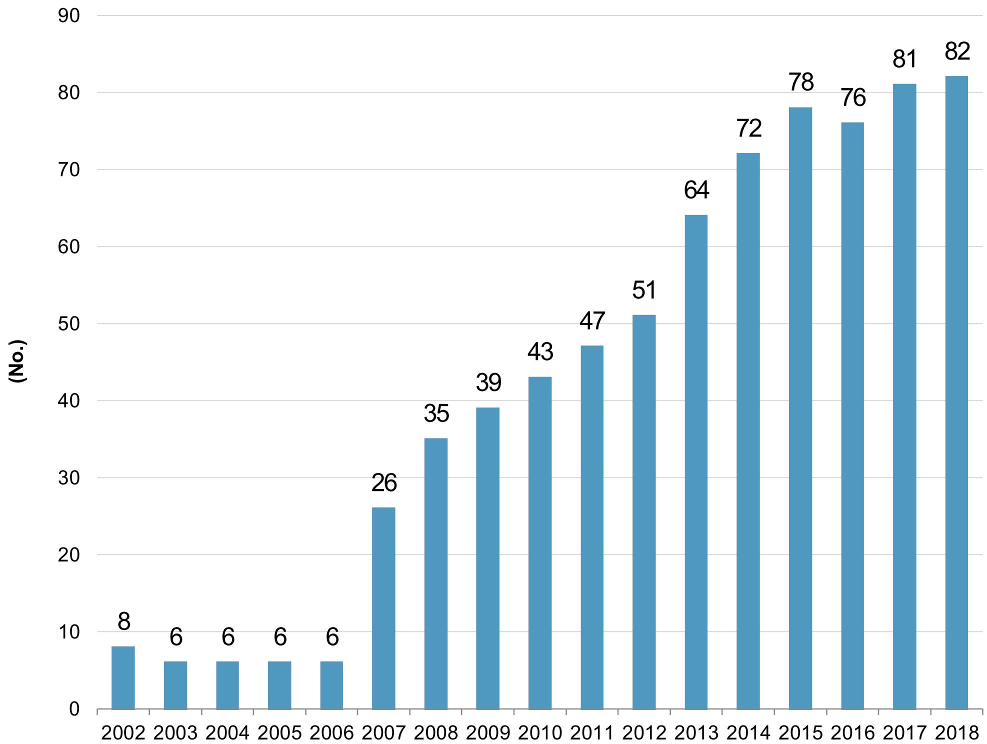


Source: ICI.

We began covering ETFs when the first fixed-income ETF products were launched in 2002. The initial product lineup started with three treasury ETFs and one investment-grade corporate bond ETF. In 2007, the coverage increased to include multiple strategies as demand for fixed-income ETFs grew. Today, we provide ratings to over 80 ETFs with more than $300 billion in market value (see chart 2).

Chart 2

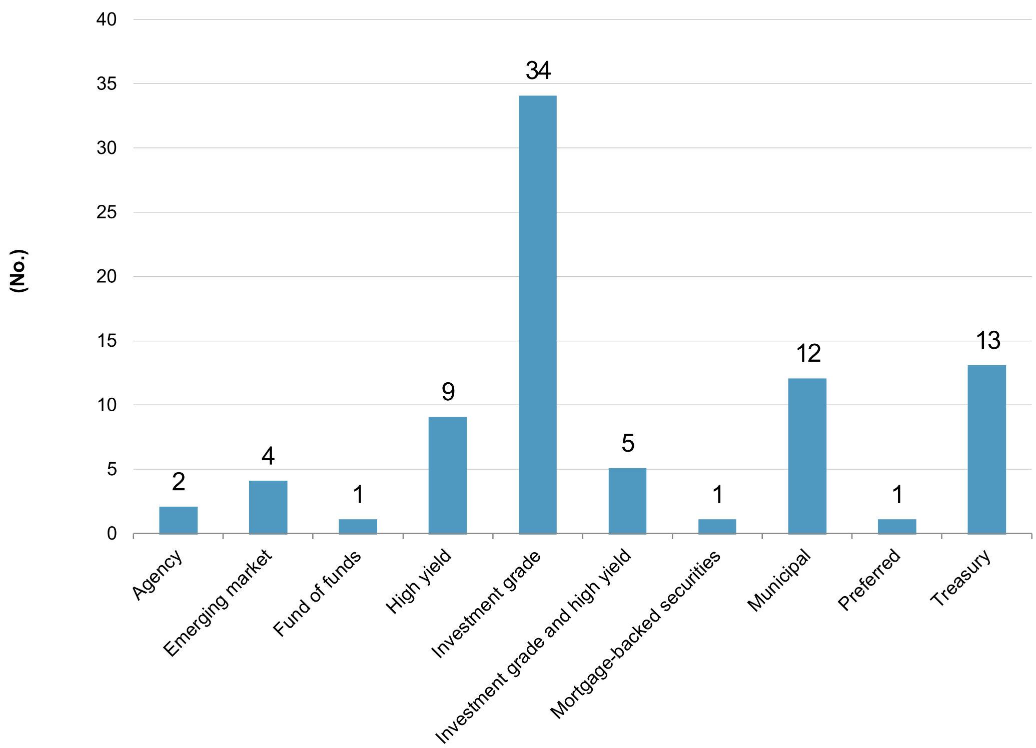
S&PGR Rated Fixed-Income ETFs



As the ETF industry continues to grow, new products are launched using both traditional and innovative solutions. For example, factor investing has grown in popularity by having enhanced weighting schemes aimed to provide superior risk-adjusted returns over time when compared to a market-value weighted index. Other themes that have come to market are ETFs investing in companies with positive environmental, social, and governance characteristics. These are a few of the new strategies that have launched within the investment-grade and high-yield space that we have rated within the past year (see chart 3).

Chart 3

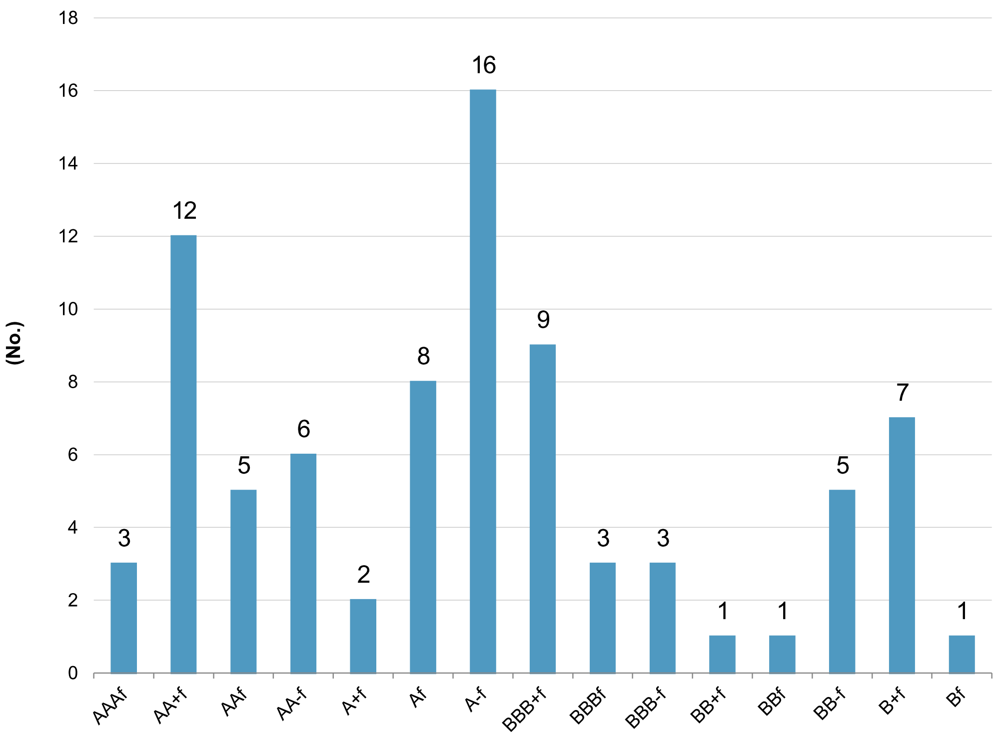
S&PGR Fixed-Income ETF Strategies



Observing the distribution of ETFs (see chart 4), we currently rate 10 distinctive strategies that range from 'AAAf' to 'Bf' in fund credit quality. The most common FCQR distribution is in 'A-f' (strategies composed of investment-grade ETFs) and 'AA+f' (treasury, agency, and mortgage-backed securities strategies). The most popular strategy focuses on investment-grade assets, where 34 ETFs are rated 'AA-f' to 'BBBf'. Of the 15 ETFs rated below investment grade, the strategies are split among high-yield credit, emerging market, preferred bond, and fund-of-funds strategies.

Chart 4

S&PGR ETF Credit Quality Distribution



The 11 strategies for assigned FVRs that exhibit extremely low or low volatility comprise investment-grade, municipal, and treasury ETFs that are invested in high-quality, short-duration securities (see chart 5). Conversely, ETFs that exhibit high volatility of returns have strategies that invest in lower credit quality, such as emerging market and high-yield bonds, or have exposure to higher-duration targets, such as long-dated treasuries and investment-grade debt. As we go down the rating scale, the volatility of returns (measured by monitoring the standard deviations of monthly returns) are, in our view, exposed to more risk factors due to increased duration, lower credit quality, and reduced liquidity.

Chart 5

S&PGR ETF Volatility Distribution

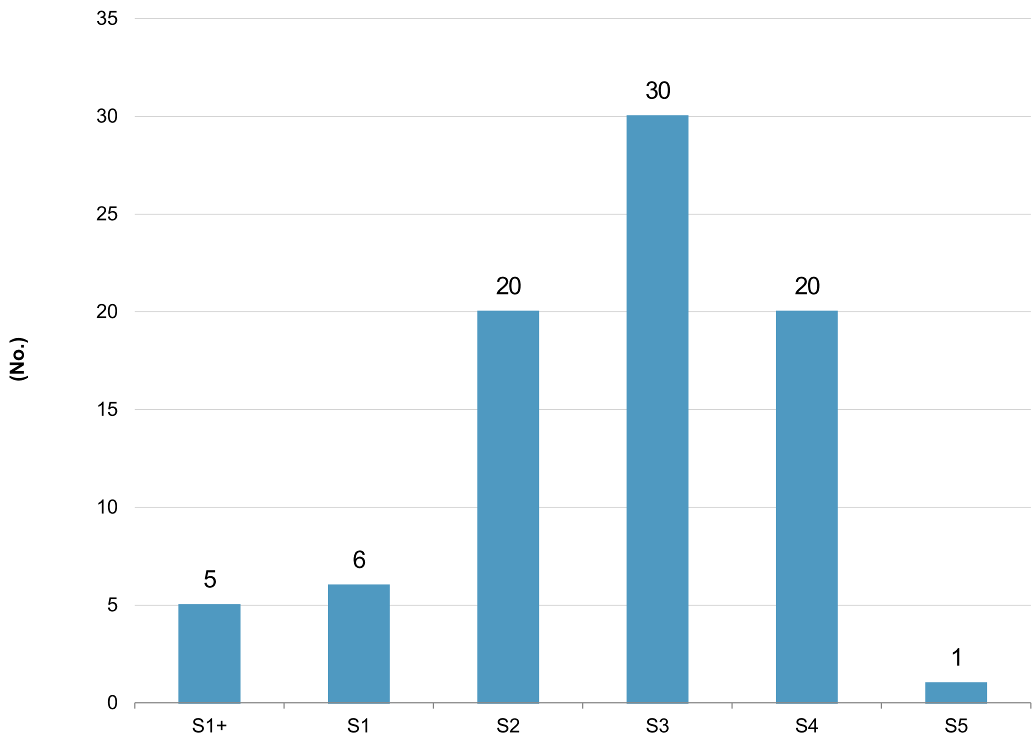


Table 4

Fund Volatility Ratings

	Typical duration profile (years)	Definition*
S1+	0 - 1	Extremely low volatility
S1	1 - 3	Low volatility
S2	3 - 7	Low to moderate volatility
S3	7 - 10	Moderate volatility
S4	10+	High volatility
S5	Risk beyond S4	High to very high volatility

*Level of volatility is benchmarked against a reference index composed of government securities denominated in the base currency of the fund.

Rating Process

Our rating process for fixed-income funds is typically initiated when the fund's sponsor requests a rating. In rating a fixed-income fund, we generally assign an analyst, often in conjunction with a team of fund specialists, to take the lead in evaluating the fixed-income fund's creditworthiness.

Typically, analysts obtain information from published reports, as well as from interviews and discussions with representatives of the fund's management. The analysts use that information to assess the fund's history, investment objectives and strategy, depth and stability of the portfolio-management team, credit risk management, pricing policies, risk preferences, and internal controls. The formulation of our ratings opinions is a well-documented process that is based on a thorough analysis according to the relevant criteria and, we believe, is enhanced by the knowledge, experience, and judgment of our fund credit analysts.

Publication

For public ratings, in most cases, we publish a press release announcing the final rating and the rationale, distribute it to the media, and post it on www.standardandpoors.com. To verify that the information is correct and that no confidential information has inadvertently been disclosed, we may provide the issuer with a copy of the report prior to releasing it publicly. The information in the draft is confidential and should not be disclosed or released prior to its publication. The advance copy time period is based on the domicile of the lead analyst as follows: one full (eight-hour) working day in the EU, and two hours in all other regions. When the lead analyst is based in the EU, the one full working day may not be shortened (and must be one full working day in the country where the issuer is based). However, if the rating is provided on a confidential basis, the rating is not published, and we disseminate the rating only to the rated entity.

Related Criteria And Research

- Fund Credit Quality Ratings Methodology, June 26, 2017
- Fund Volatility Ratings Methodology, June 26, 2017

This report does not constitute a rating action.