The Link Between Morningstar Ratings and Flows
What happens to fund flows after an upgrade or downgrade?

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Executive Summary

Past studies have found a link between fund flows and the Morningstar Rating for Funds (also called the star rating). This study sought to determine a link between the Morningstar Analyst Rating and flows. Launched in November 2011, the Morningstar Analyst Rating is a fundamentals-driven rating based on our fund analysts' assessments of a mutual fund, including People, Process, Parent, Price, and Performance. We found that there is a link between the analyst rating, and flows but not as strong as that of the star rating. Specifically, we observed a link between analyst ratings for actively managed funds and flows. For passive funds where fundamentals are generally static, we observed no link between the analyst rating and flows. We looked at U.S. fund rating changes and then tracked flows from three perspectives: total net flows in dollar terms, compared with Morningstar Category peers over the same period, and compared with a fund's own history prior to the ratings change.

Key Takeaways

▶ For all active funds with upgrades, inflows were about $2 million in the first month after their upgrade on average, a cumulative $13 million after six months, up to $46 million after 12 months, and up to $157 million after 36 months. Downgraded funds showed outflows of $20 million in the first month after their downgrade, $88 million in the six months after, $146 million over 12 months, and $429 million in net outflows over the entire 36 months.

▶ Downgrades showed a greater link. A likely reason is that many downgrades happen in response to manager changes, which represents a clear call to action, whereas upgrades generally reflect gradual proof of concept rather than an event-driven change.

▶ Downgrades to Neutral or Negative ratings had particularly strong links to equity fund flows.

▶ For context, active funds collectively have been in outflows for the past decade, and passive funds have been in inflows. We saw steady inflows for both upgraded and downgraded passive funds, though upgrades had stronger inflows.

▶ We ran additional tests to see if funds going in and out of Gold, Silver, and Bronze Morningstar Analyst Ratings led to different flow patterns. Such changes could be a greater call to action since each Morningstar Medalist level is equivalent to a recommendation, but Neutral and Negative ratings are not. For upgrades, the link was strong for equities, rather weak for bond funds, and weakest of all for allocation funds.

▶ We ran the same tests on star rating changes and Morningstar Quantitative Ratings. Star ratings showed a stronger link than analyst ratings and quantitative ratings showed a weaker link.

▶ Our study covered the 12-year period that ended in 2022 just before the Analyst Rating and Morningstar Quantitative Rating merged into the newly minted Morningstar Medalist Rating.

▶ In November 2019, Morningstar adjusted the analyst rating to rate each fund's share class separately based on fees. This resulted in a slew of downgrades of higher-priced share classes. Analysts have continued to rate funds based on People, Process, and Parent, but fees and the performance potential for each category were measured systematically to arrive at the final overall rating based upon the qualitative and quantitative measures.

Methodology

Calculating the Data

To measure the link between flows and ratings changes, we used an event study methodology. That is, for each ratings change, we calculated the aggregate flows and organic growth rate over the ensuing one-, three-, six-, 12-, 24-, and 36-month time periods. We ran this for all U.S.-domiciled open-end funds and exchange-traded funds, for all three ratings (Morningstar Analyst Rating, Morningstar Quantitative Rating, and star rating) at the share class level, as ratings differ across funds depending upon share class fees.

The study assessed flows on a monthly basis, as our daily flow data is limited and the exact publishing date for each rating varied. The star rating typically published on the third business day of the month, the Morningstar Quantitative Rating typically published on the fourth Tuesday of the month, while the Morningstar Analyst Rating could appear anytime in the month.

To better gauge the immediate impact of a rating change, the start of the collection period varied by rating type. For the star rating and analyst rating, we collected flows at the start of the month of the rating change, while we collected the flows in the month following a rating change for the quantitative rating.

The study only calculated aggregate flows and organic growth rates for the collection period (the following one, three, six, 12, 24, and 36 months) if the new rating stayed the same over that entire time. For example, if we upgraded the fund to 4 stars in February, but then downgraded it to 3 stars in July, the flow data for the February upgrade was only collected for the one- and three-month periods.

Exhibit 1 Example of Flow Collection Periods
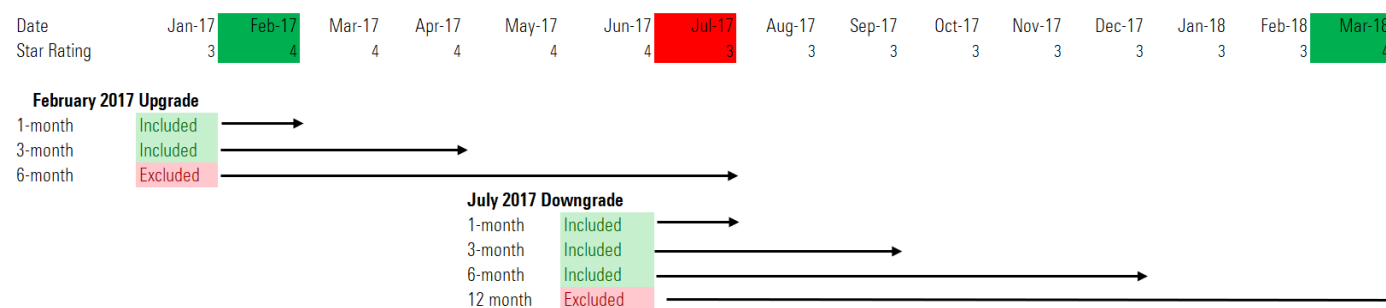
Source: Morningstar Direct. Data as of Dec. 31, 2022.

If an analyst rating were marked as Under Review for a month, it was only included in the study if the rating in the following month was different than the preceding month. For example, if a fund were rated Silver in February, and then went Under Review in March, but the Silver rating was reaffirmed in April, the fund was not included in the study. If the rating did change, the collection period started in the month the fund went Under Review.

Exhibit 2 Under Review Example

Date	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
Analyst Rating	Silver	Silver	Under Review	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

March 2022 Under Review

1-month	Included
3-month	Included
6-month	Included

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Funds that were added to coverage or dropped from coverage were not included in the study. Only true upgrades and downgrades were analyzed.

Analyzing the Output

Upon initial analysis, we noticed that there were some extreme outliers for the organic growth rate data. The main cause of this issue was new funds with small asset bases. This caused the denominator in the organic growth rate calculation to be quite small and created a few huge growth rates. This led to a distribution of growth rates that was capped on the down side at negative 1 but was incredibly large on the positive side.

To avoid this issue, all organic growth rates were winsorized by their collection period. That is, for each collection period, the top and bottom 3% of the organic growth rates were removed and replaced with the new minimum and maximums (that is, the 4th and 97th percentile values). The aggregate flow data was not winsorized.

Each Morningstar rating was assessed separately. We started by looking at the entire universe of each rating type and then slowly slicing that data into different groups. The major groups we looked at were actively versus passively managed funds and across asset classes (equity, fixed income, and multi-asset). For the analyst rating, we also homed in on upgrades/downgrades to certain rating levels. More specifically, we looked at upgrades from non-Medalists to Medalists, and downgrades from Medalists to non-Medalists.

For each universe or group, we used five main methods to assess the results, three looking at the organic growth rate and two looking at aggregate flows.

Exhibit 3 Method of Testing the Data

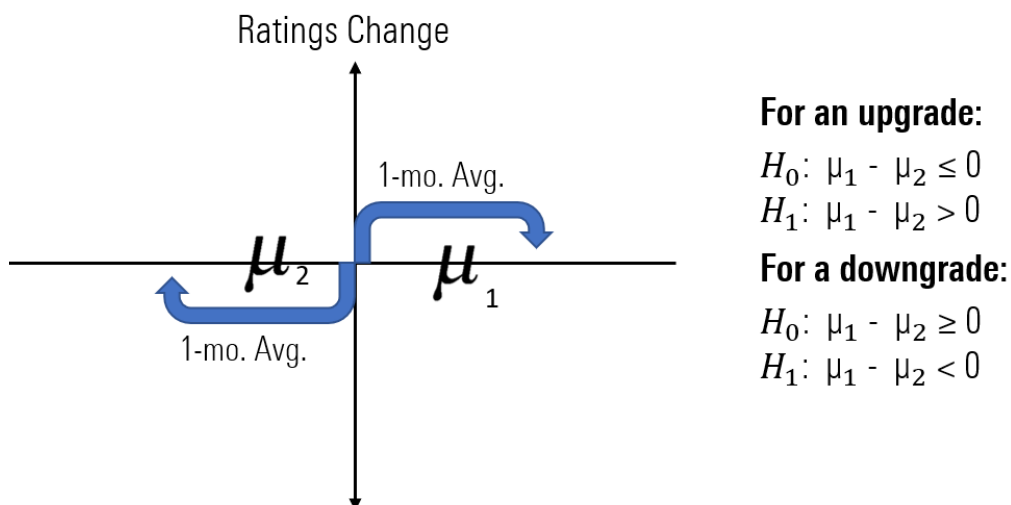|	Organic Growth Rate	Aggregate Flows
Simple Stats	X	X
vs. Fund History	X	X
vs. Peer Group	X	

The first method just looked at several simple statistical measures such as average, median, and the percentage greater than or less than 0. This was done for both the organic growth rates and aggregate flows, as the results could differ slightly.

To assess if there were a link between ratings changes and flows, we looked to see if the average and median numbers were positive for upgrades and negative for downgrades. For the percentage of funds greater than 0, we were looking for more than 50% for upgrades and less than 50% for downgrades. While this method is very simple and intuitive, it lacks context around timing and peers that the other methods helped gauge.

The second method compared the flows or growth rate post-ratings change to pre-ratings change. This method was a better indicator of the change in flows following a rating change. It better assesses if a fund starts getting inflows or outflows after a rating change, or if the flows were already trending in that direction.

Similar to how the post-ratings change buckets were calculated for both aggregate flows and organic growth rates, we collected this data on flows pre-ratings change. The same methodology was used to calculate these pre-ratings change collection periods as the post-ratings change collection periods (that is, if there was another rating change five months prior to the subject rating change, the pre-rating change flows were only collected for the one- and three-month periods). This was done for both aggregate flows and organic growth rates.

Similar statistical measures (average, median, and percentage greater than 0) were calculated for the pre-ratings change periods and compared with the post-ratings change data over various universe splices. To assess if the change in flows post-ratings change was significantly different than the pre-ratings change flows, we conducted a difference in means t-test, using a 5% significance level.

Exhibit 4 Fund History T-Test

Ratings Change

1-mo. Avg.

μ_2 μ_1

1-mo. Avg.

For an upgrade:
H_0: $\mu_1 - \mu_2 \leq 0$
H_1: $\mu_1 - \mu_2 > 0$

For a downgrade:
H_0: $\mu_1 - \mu_2 \geq 0$
H_1: $\mu_1 - \mu_2 < 0$

Source: Morningstar Direct. Data as of Dec. 31, 2022.

The final method we employed assessed the flows post-ratings change relative to a similar peer group. That is, for an upgraded fund, did it receive greater inflows (or less outflows) than peers at that point in time? And for a downgraded fund, did it receive greater outflows (or less inflows) than similar peers?

To determine a fund's peer group, we looked at its current Morningstar Category (as of December 2022) and then divided that category into passively and actively managed funds. With the recent large differences in flows for passively and actively managed funds, we only wanted to assess a fund relative to its true peers. Unfortunately, only looking at a fund's ending category resulted in some bias for funds that had changed categories throughout the sample period.

This difference in growth rate calculation was measured at the specific point in time of each rating change. For example, if a fund's star rating was upgraded in March 2017, that fund's growth rate in March was subtracted from its peer group's growth rate in March 2017 for the one-month collection period. This calculation was only done for the organic growth rate, as this way both the fund and its peer group were scaled.

Finally, like the "versus fund history" calculation, we collected several statistics over various spliced sections for each rating. To assess if the post-ratings change flows were significantly different than its peer group, we conducted a one-tailed t-test, using a 5% significance level.

Exhibit 5 Peer Group T-Test

Ratings Change

1-mo. Fund Growth Rate

1-mo. Cat. Growth Rate
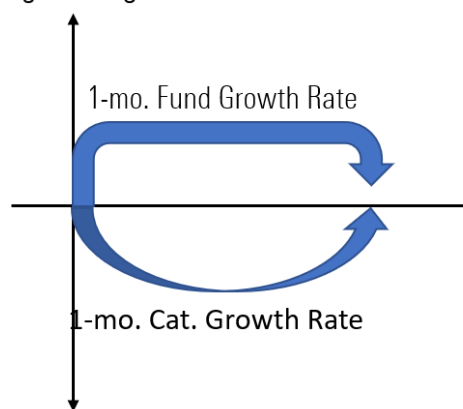
For an upgrade:
$H_0:\ \mu_1 \leq 0$
$H_1:\ \mu_1 > 0$

For a downgrade:
$H_0:\ \mu_1 \geq 0$
$H_1:\ \mu_1 < 0$

$\boldsymbol{\mu_1}$ **= Fund Growth Rate – Peer Growth Rate**

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Active vs. Passive

We found a strong link between active fund rating changes and flows, but much less of a link with index fund rating changes. For all active funds with upgrades, inflows were about $2 million the first month after the upgrade on average, a cumulative $13 million after six months, up to $46 million after 12 months, and up to $157 million after 36 months. On the flip side, downgraded funds showed outflows of $20 million in the first month, $88 million in the six months after, $146 million over 12 months, and $429 million in net outflows over the entire 36 months.

For context, active funds collectively have been in outflows for the past decade, and passive funds have been in inflows. We saw steady inflows for both upgraded and downgraded passive funds after the change, though upgrades had stronger inflows after the upgrade.

This data makes sense as active funds' fundamentals change more often than passive ones'. Many passive rating changes are due to subtleties like slight changes in competitor fees.

Exhibit 6 Average Active Fund Flows Following a Rating Change
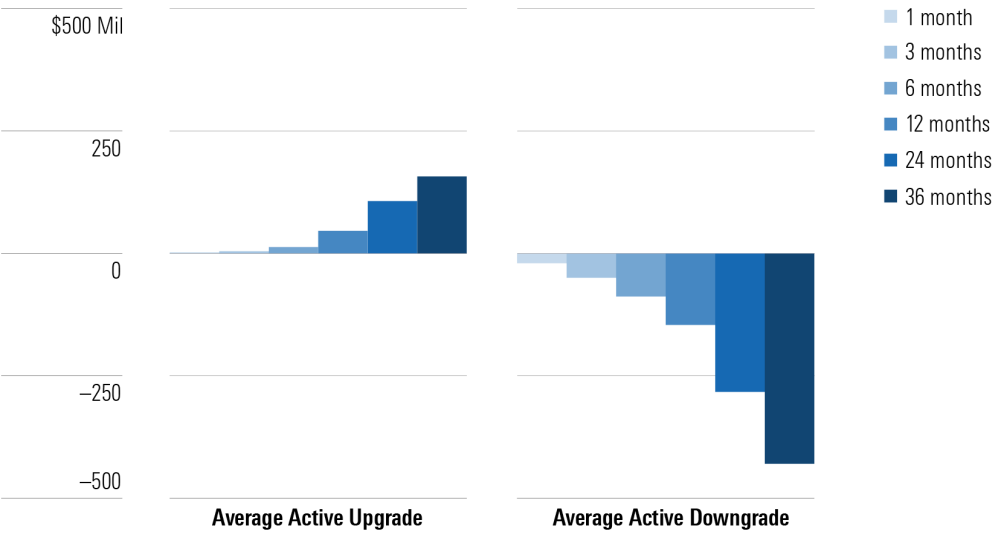
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Active funds, however, change managers and strategies, blow up, post big short-term returns that alter their risk/reward profiles, bump up against capacity constraints, and more. Wise active investors choose more stable funds that don't change much, but such adjustments do happen across the thousands of funds we rate.

Exhibit 7 Average Passive Fund Flows Following a Rating Change
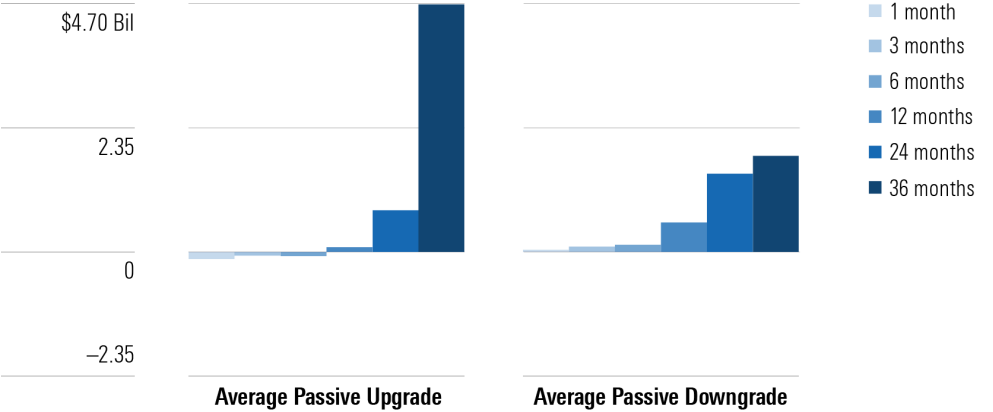
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Flows by Asset Class

In our tests, we further spliced active strategies into equities, fixed-income, and allocation funds. This clarified that the link between ratings changes and flows is strongest with a subset of active funds. For equity funds, the pattern was strong from one to 36 months compared with peers. For bond funds, the

pattern was pretty similar, though downgraded funds' outflows were milder by the two- or three-year mark.

Below are equity fund flow tests showing aggregate net flows for upgrades and downgrades plus growth rates compared with a fund's past history as well as its category peers. The table shows the strongest links were for rating changes compared with a fund's peer group over the ensuing period. However, downgrades versus a fund's history prior to the rating change also show a strong link.

Exhibit 8 Active Equity Analyst Ratings — Aggregate Flows, Organic Growth Rate

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(2,887,994)	(12,927,361)	(21,586,572)	(31,375,061)	(87,648,162)	(83,516,397)
	Count	1,441	1,387	1,300	1,106	647	314
	vs. Fund History	13,090,947	16,062,090	17,809,792	18,826,044	74,105,248	211,645,748
	P-Value	0.1115	0.1317	0.1734	0.2802	0.1772	0.0626
Downgrades	Average	(14,451,488)	(41,538,002)	(81,460,208)	(151,173,741)	(309,982,680)	(502,278,679)
	Count	2,310	2,275	2,211	1,948	1,219	562
	vs. Fund History	2,434,023	2,833,187	2,902,688	(5,493,944)	(6,462,842)	2,287,970
	P-Value				0.3859	0.4425	
		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.01%	1.01%	3.23%	11.48%	35.76%	49.96%
	vs. Fund History	-0.18%	0.28%	0.22%	-2.17%	-21.33%	-26.36%
	P-Value		0.2742	0.4125			
	vs. Peer Group	0.35%	2.11%	5.24%	15.22%	43.37%	60.32%
	P-Value	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.62%	-4.24%	-7.89%	-12.37%	-19.03%	-29.67%
	vs. Fund History	-0.13%	-0.18%	-1.32%	-3.68%	-15.91%	-42.52%
	P-Value	0.1428	0.2801	0.0158	0.0070	0.0051	0.0002
	vs. Peer Group	-1.34%	-3.30%	-6.14%	-9.22%	-11.90%	-17.72%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004

Source: Morningstar Direct. Data as of Dec. 31, 2022.

The color coding for these charts help signify if the flows were in the right direction - positive for upgrades and negative for downgrades - and if the t-tests ran were significant at a 5% level. The green color coding showed the strongest link, meaning flows or the growth rate was in the right direction and statistically significant, while yellow meant that flows were in the right direction but not statistically significant. Red color coding signified that flows were in the wrong direction, meaning negative flows for upgrades and positive flows for downgrades.

For active bond funds, we see strong links almost across the board, including comparisons with a fund's history and its peers.

Exhibit 9 Active Fixed-Income Analyst Ratings—Aggregate Flows, Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	14,463,912	42,567,783	88,371,185	221,408,169	492,390,318	736,860,485
	Count	630	608	582	523	323	144
	vs. Fund History	19,016,082	50,339,865	66,017,901	162,257,080	285,177,640	94,101,885
	P-Value	0.0393	0.0126	0.0260	0.0047	0.0247	0.3808
Downgrades	Average	(33,336,213)	(69,078,632)	(104,884,704)	(143,672,550)	(274,796,861)	(329,827,327)
	Count	1,259	1,228	1,221	1,158	789	240
	vs. Fund History	(11,637,404)	(33,091,687)	(50,412,450)	(48,647,825)	(174,904,452)	(125,482,724)
	P-Value	0.3035	0.1987	0.1885	0.2515	0.0538	0.1542

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.87%	2.87%	6.28%	18.17%	39.59%	87.24%
	vs. Fund History	0.47%	0.70%	-0.46%	-2.43%	-62.05%	-58.20%
	P-Value	0.0356	0.1720				
	vs. Peer Group	0.53%	1.92%	4.55%	14.41%	33.38%	78.62%
	P-Value	0.0008	0.0001	0.0000	0.0000	0.0000	0.0017
Downgrades	Average	-0.83%	-1.61%	-1.82%	-3.17%	-5.16%	-5.30%
	vs. Fund History	-0.28%	-0.10%	-0.36%	-5.60%	-30.77%	-24.95%
	P-Value	0.0624	0.4193	0.3562	0.0060	0.0023	0.0698
	vs. Peer Group	-1.12%	-2.50%	-4.26%	-8.52%	-15.26%	-9.34%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.1914

Source: Morningstar Direct. Data as of Dec. 31, 2022.

For allocation funds, the link was still there, but a little weaker than with fixed-income or equity funds.

We ran an additional test to see if funds going in and out of the Medalist territory (Gold, Silver, and Bronze ratings) led to any different flow patterns. Such changes could be a greater call to action since each Medalist level is equivalent to a recommendation, but Neutral and Negative ratings are not. For upgrades, the link was strong for equities, rather weak for bond funds, and weakest of all for allocation funds.

Downgrades Show the Greatest Link

Downgrades of Gold-, Silver-, and Bronze-rated funds to Neutral or Negative were another story. In this case, the outflows were strong for all three fund types.

Why would downgrades to Neutral and Negative show the strongest link? The likely reason is that such downgrades are more likely to be event-driven. Manager departures, strategy changes, and investing pitfalls are the sorts of things that spur downgrades and serve as clear calls to action. Upgrades, on the other hand, tend to result from more gradual improvements without a particular event to drive the change. Managers proving themselves over a few years is a gradual process, and each investor might have a different view on when they merit an upgrade. Or it could be a gradual uptick in performance or supporting staff buildup that spurs an upgrade.

Morningstar Quantitative Ratings

The Morningstar Quantitative Rating, which was merged with Morningstar Analyst Rating in May 2023 to create the Morningstar Medalist Rating. didn't show much shift in aggregate dollar flows in reaction to rating changes. This rating was newer and lower profile than the other two ratings, but it did update monthly.

When looking at growth rates, we did see some link between flows and quantitative ratings changes. This mostly happened in the first few months following a rating change. Because the ratings updated monthly, we had fewer instances of a rating change taking hold for the entire three-year period of the study. Also, this rating was only launched in 2017, so there was less data in our sample that could extend to a full two- or three-year collection period.

Star Ratings

The impacts of the Morningstar Rating, or star rating, are more widely examined, and most studies have found a sizable link between the star rating and flows. We found the same link, and it was stronger than the analyst rating link. The star rating is a risk-adjusted return measure reflecting a fund's performance relative to peers over the trailing three-, five-, and 10-year periods. It's updated monthly, so the star rating was more responsive to performance than the analyst rating was and we know that performance has a strong impact on flows. Moreover, the star rating is still more widespread than the analyst rating even though we at Morningstar think the analyst rating (now called the Medalist Rating) is a better gauge of a fund's prospects.

Past Studies Found a Link With Flows and Star Ratings

Studies by Morningstar and outside authors found a strong connection between flows and star ratings. A 2015 paper by Lee Davidson and Timothy Strauts "What Factors Drive Investment Flows?" (Link) found strong inflows to 5-star funds and progressively greater outflows for funds rated 4 stars down to 1 star.

A follow-on study in 2018 by Madison Sargis and Elena Zistakis, "What Factors Drive Flows?," (Link) likewise found a connection between stars and flows, but showed that the link had decreased since the 2015 paper was published. The authors suggested the growth of passive investing was responsible.

Outside Morningstar, studies still found an association. A 2001 paper by the Federal Reserve Bank of Atlanta, called "Star Power: The Effect of Morningstar Ratings on Mutual Fund Flows," (Link) found that an initial 5-star rating spurred unusually high inflows.

Diane Del Guercio and Paula A. Tkac used an event study to find, "The initiation of a 5-star rating results in average abnormal flow of $26 million, or 53% above normal expected flow for these funds, over the six months following the initial rating. We find that the strong positive flow response is unique to funds earning an initial 5-star rating."

A 2020 study, "Ratings-Driven Demand and Systematic Price Fluctuations," found that star ratings were linked to flows and further that this had a real-world impact on security prices (source: Itzhak Ben-David, Jiacui Li, Andrea Rossi, and Yang Song (Link)).

How You Can Apply This Information

For fund managers, the data suggest a rating change may signal an uptick in inflows or outflows moving in sync with the rating change. This seems particularly noteworthy for downgrades of active funds where outflows happened more rapidly than inflows at upgraded funds.

For fund investors, flows can be good, bad, or neutral. Generally, they don't have much of an impact on performance. Rapid flows in either direction are a problem, especially for less-liquid asset types like small-cap stocks or high-yield bonds.

The data suggest that there isn't often a big move in flows after a rating change, so buying after an upgrade or selling after a downgrade isn't likely to be hurt by too many investors doing the same thing. As downgrades tended to be followed by a greater reaction, it's possible that a downgrade in a less-liquid space could happen before a time of challenging outflows. However, that's unlikely to happen.

In short, don't worry too much about trading in reaction to a Morningstar Medalist Rating change. Star rating changes were associated with greater flows, so trades based on star rating changes might face headwinds when they are for funds trading in less-liquid spaces. **M**

Appendix

About the Sample

We sampled the 12-year period from January 2011 through December 2022 (although the Morningstar Quantitative Rating was only launched in 2017). Only U.S. domiciled open-end funds and ETFs were included in the study. Money market funds and funds of funds were excluded. Obsolete funds were included in the study to avoid survivorship bias, but funds that are currently closed to new investors or all investors were excluded.

One flaw of the sample is that we do not have point-in-time historical data on fund closures. So, if a fund were closed to investors during the entire 10-year period, but reopened in December 2022, it would have been included in the study.

Exhibit 10 provides a rough overview of the sample:

Exhibit 10 Sample Overview
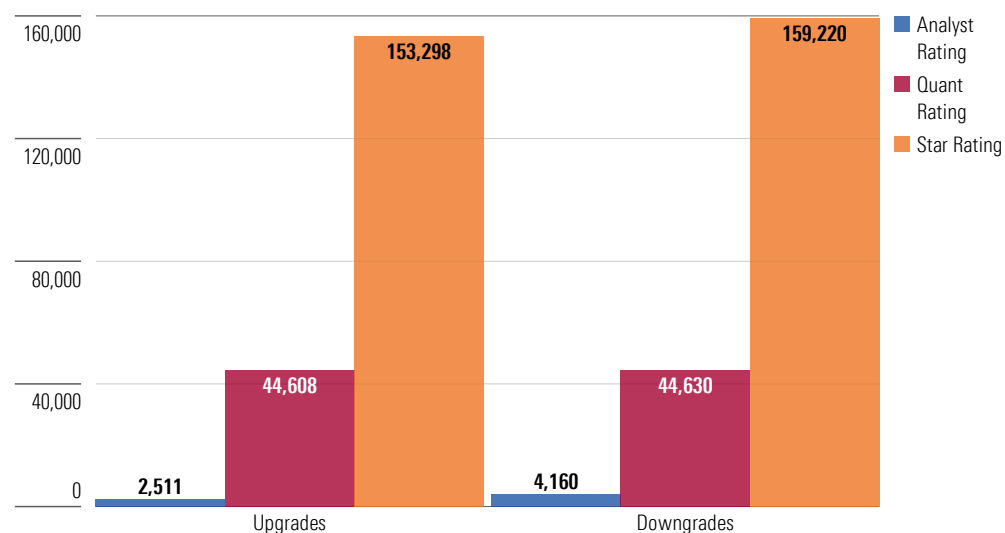
Source: Morningstar Direct. Data as of Dec. 31, 2022.

How to Interpret the Results

We looked at flows by asset class, rating type, and even different types of upgrades and downgrades to the analyst rating in an attempt to tease out different flow patterns.

As mentioned in the methodology, we ran five main tests on the data for various splices of each rating type. To summarize the results, we included abbreviated tables for some of those samples we analyzed. To better understand how to interpret the results, an example for one universe (all analyst ratings) is below.

Exhibit 11 How to Interpret the Results

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-4,992,439	103,912	7,722,386	49,036,891	161,528,800	306,706,375
	Count	2,465	2,383	2,255	1,956	1,179	545
	vs. Fund History	4,658,413	13,850,620	14,630,008	42,269,437	134,022,135	258,414,968
	P-Value	0.3158	0.1459	0.2085	0.0822	0.0388	0.0315
Downgrades	Average	-18,826,760	-46,084,861	-82,692,304	-129,724,572	-245,989,312	-400,519,559
	Count	4,144	4,055	3,975	3,597	2,337	925
	vs. Fund History	-5,069,567	-6,378,911	-15,362,832	-13,021,344	-44,494,685	-37,451,276
	P-Value	0.2653	0.3240	0.2304	0.2304	0.1961	0.3006
		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.22%	1.59%	4.28%	13.26%	39.57%	78.64%
	vs. Fund History	0.00%	0.27%	-0.44%	-3.88%	-28.90%	-23.39%
	P-Value	0.4946	0.2305				
	vs. Peer Group	0.36%	1.93%	4.93%	14.04%	39.97%	80.73%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.37%	-3.37%	-5.79%	-8.71%	-11.85%	-21.53%
	vs. Fund History	-0.20%	-0.18%	-0.91%	-4.31%	-28.72%	-39.42%
	P-Value	0.0209	0.2407	0.0319	0.0001	0.0000	0.0000
	vs. Peer Group	-1.27%	-3.10%	-5.67%	-9.14%	-12.64%	-15.20%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002

Source: Morningstar Direct. Data as of Dec. 31, 2022.

There are two charts for each universe: one for aggregate flows and one for organic growth rates. While we ran several statistical measures such as average, median, percent greater/less than 0, and others, for these tables we included only the average and the count values (the count values were excluded from the organic growth rate table, as the values were the exact same as the aggregate flow count values for each universe). Their interpretation is fairly simple: For upgrades, we wanted to see positive values that were increasing as we moved to longer collection periods, and for downgrades we wanted to see negative values that also increased. Referring to the above example, the average growth rate in the 12 months following an analyst rating upgrade was 13.26%, which was greater than the shorter collection periods and less than the longer collection periods.

The next section is slightly more complex as it compares the flows following a rating change with the flows beforehand. This test was run for both the aggregate flow and organic growth rate data, and the output is in the "vs. Fund History" row along with the "p-value" row below it. Like the average values, we were looking for positive and increasing values for the "vs. Fund History" row for upgrades, while negative and increasing values for downgrades. However, here, we also ran a difference in means t-test to determine if these values were significant at a 5% value. The row below it shows the p-value for that

test. In the above example, the average fund had a growth rate that was 4.31% lower in the 12 months following an analyst rating downgrade relative to the growth rate 12 months prior, which was significant.

To make the results easy to interpret, we color-coded the results to signify if the values were in the right direction (positive for upgrades and negative for downgrades) and if they were significant (p-value less than 5%). A key to the color coding is below (this color coding applies to both t-tests).

Exhibit 12 T-Test Key

T-Test Key

Value is in the right direction and significant
Value is in the right direction, but not significant at 5% level
Value is in the wrong direction

Source: Morningstar Direct. Data as of Dec. 31, 2022.

The final test compared the flows following a rating change to the subject fund's relevant peer group at the same point in time. This test was only conducted for the organic growth rate data, and the output can be found in the "vs. Peer Group" row and "p-value" row below it. Like the versus fund history test, we were looking for positive values that were increasing for upgrades and negative values that were getting more negative for downgrades, that were significant at a 5% level. Looking at the above example again, the average fund saw a 9.14% decrease in flows relative to their peers in the 12 months following an analyst rating downgrade.

Analyst Rating Results

Exhibit 13 All Analyst Ratings—Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-4,992,439	103,912	7,722,386	49,036,891	161,528,800	306,706,375
	Count	2,465	2,383	2,255	1,956	1,179	545
	vs. Fund History	4,658,413	13,850,620	14,630,008	42,269,437	134,022,135	258,414,968
	P-Value	0.3158	0.1459	0.2085	0.0822	0.0388	0.0315
Downgrades	Average	-18,826,760	-46,084,861	-82,692,304	-129,724,572	-245,989,312	-400,519,559
	Count	4,144	4,055	3,975	3,597	2,337	925
	vs. Fund History	-5,069,567	-6,378,911	-15,362,832	-13,021,344	-44,494,685	-37,451,276
	P-Value	0.2653	0.3240	0.2304	0.2304	0.1961	0.3006

Looking at the entire analyst-rated universe, there was a solid link between flows and an analyst rating change. The average flows following an upgrade were positive and increasing over longer collection periods, while flows following a downgrade were negative and getting more negative. When comparing the flows after the ratings change with the flows prior, there was still a decent link, but at most time periods, it was not statistically significant.

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 14 All Analyst Ratings—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.22%	1.59%	4.28%	13.26%	39.57%	78.64%
	vs. Fund History	0.00%	0.27%	-0.44%	-3.88%	-28.90%	-23.39%
	P-Value	0.4946	0.2305				
	vs. Peer Group	0.36%	1.93%	4.93%	14.04%	39.97%	80.73%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.37%	-3.37%	-5.79%	-8.71%	-11.85%	-21.53%
	vs. Fund History	-0.20%	-0.18%	-0.91%	-4.31%	-28.72%	-39.42%
	P-Value	0.0209	0.2407	0.0319	0.0001	0.0000	0.0000
	vs. Peer Group	-1.27%	-3.10%	-5.67%	-9.14%	-12.64%	-15.20%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002

When looking at growth rates for this universe, the link was still strong, but more so for downgrades than upgrades. Upgraded funds still saw inflows, but relative to their flows before the upgrade, they were less steep, implying that these funds were already receiving inflows prior to their upgrade. For downgrades, the link was strong across all tests and statistically significant at almost every period.

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 15 All Active Analyst Ratings — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	2,378,847	4,407,190	13,087,101	46,261,908	106,919,104	157,072,008
	Count	2,330	2,248	2,123	1,831	1,085	527
	vs. Fund History	13,301,147	25,070,125	31,903,463	57,441,956	138,308,971	168,463,017
	P-Value	0.0343	0.0110	0.0186	0.0169	0.0181	0.0856
Downgrades	Average	(20,305,358)	(49,682,661)	(88,110,991)	(146,202,033)	(283,026,455)	(429,725,721)
	Count	4,047	3,958	3,880	3,513	2,288	913
	vs. Fund History	(2,165,039)	(8,518,110)	(14,635,898)	(17,143,081)	(54,937,977)	(41,761,798)
	P-Value	0.3852	0.2543	0.2249	0.2587	0.1139	0.2493

When only looking at actively managed analyst-rated funds, the link between flows and analyst ratings was even stronger than the entire analyst-rated universe. The tests for both upgrades and downgrades showed a strong link; however, when compared with the fund's previous flows, the test for downgraded funds was not statistically significant.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 16 All Active Analyst Ratings — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.26%	1.64%	4.37%	13.74%	41.51%	77.92%
	vs. Fund History	0.01%	0.32%	-0.28%	-3.69%	-30.55%	-27.01%
	P-Value	0.4569	0.2042				
	vs. Peer Group	0.41%	2.09%	5.24%	15.19%	43.70%	80.75%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.41%	-3.46%	-5.91%	-8.91%	-12.16%	-21.68%
	vs. Fund History	-0.20%	-0.18%	-0.91%	-4.37%	-29.15%	-39.29%
	P-Value	0.0199	0.2383	0.0342	0.0001	0.0000	0.0000
	vs. Peer Group	-1.27%	-3.10%	-5.67%	-9.14%	-12.64%	-15.20%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002

The organic growth rate data for this universe still showed a strong link between flows and ratings changes; however, the results were quite similar to those of the entire analyst-rated universe.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 17 All Passive Analyst Ratings — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(132,215,375)	(71,553,638)	(78,560,117)	89,684,848	791,864,125	4,687,668,113
	Count	135	135	132	125	94	18
	vs. Fund History	(144,923,184)	(178,610,368)	(278,511,714)	(207,667,733)	53,068,567	3,791,389,034
	P-Value					0.4633	0.0298
Downgrades	Average	42,862,797	100,720,228	138,618,292	559,386,359	1,483,418,514	1,821,582,636
	Count	97	97	95	84	49	12
	vs. Fund History	(126,974,243)	79,871,684	(44,438,774)	191,745,244	405,151,904	779,541,011
	P-Value	0.2042		0.4517			

There was relatively no link between passively managed analyst-rated fund flows and analyst rating changes. While there are several possible reasons the relationship broke down for passive strategies (see Key Takeaways section), the sample size was much smaller here.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 18 All Passive Analyst Ratings — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.42%	0.75%	2.78%	6.30%	17.20%	99.87%
	vs. Fund History	-0.20%	-0.49%	-3.01%	-6.13%	-7.88%	39.02%
	P-Value						0.1594
	vs. Peer Group	-0.52%	-0.70%	0.08%	-2.68%	-2.67%	80.27%
	P-Value			0.4782			0.0132
Downgrades	Average	0.31%	0.18%	-0.78%	-0.04%	2.50%	-9.66%
	vs. Fund History	0.00%	-0.04%	-0.86%	-1.49%	-8.64%	-43.83%
	P-Value	0.4964	0.4875	0.3376	0.3497	0.1007	0.0352
	vs. Peer Group	-0.67%	-2.48%	-5.61%	-9.81%	-13.29%	-36.87%
	P-Value	0.0381	0.0012	0.0000	0.0000	0.0018	0.0285

Looking at the organic growth rate data, there was still a relatively weak link between flows and ratings changes; however, downgrades showed a mediocre link. The likely cause of the difference for downgrades in aggregate flows and growth rates was that growth rates were not skewed by large outliers.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 19 All Equity Analyst Ratings — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(14,086,481)	(21,758,473)	(36,304,503)	(29,013,245)	(43,338,632)	(16,517,025)
	Count	1,559	1,505	1,415	1,216	730	327
	vs. Fund History	(682,438)	43,570	(8,571,608)	2,481,371	25,031,374	195,244,377
	P-Value		0.4990		0.4747	0.3986	0.0904
Downgrades	Average	(14,451,488)	(41,538,002)	(81,460,208)	(151,173,741)	(309,982,680)	(502,278,679)
	Count	2,390	2,355	2,289	2,016	1,254	572
	vs. Fund History	(5,536,776)	5,695,085	(1,354,955)	4,003,158	30,694,123	(17,604,650)
	P-Value	0.2142		0.4627			0.4177

Looking at aggregate flows for equity analyst-rated funds, there was little to no relationship between flows and ratings changes. Both upgraded and downgraded funds averaged outflows following a rating change.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 20 All Equity Analyst Ratings — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.04%	0.97%	3.10%	10.84%	32.62%	50.12%
	vs. Fund History	-0.18%	0.25%	0.01%	-2.49%	-20.23%	-21.58%
	P-Value		0.2807	0.4977			
	vs. Peer Group	0.29%	1.88%	4.78%	13.53%	37.22%	59.40%
	P-Value	0.0024	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.56%	-4.11%	-7.67%	-12.04%	-18.60%	-29.42%
	vs. Fund History	-0.12%	-0.16%	-1.28%	-3.67%	-15.81%	-42.48%
	P-Value	0.1541	0.2962	0.0158	0.0057	0.0043	0.0001
	vs. Peer Group	-1.32%	-3.28%	-6.12%	-9.23%	-11.92%	-18.04%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003

The relationship was much stronger when looking at organic growth rates rather than aggregate flows, especially for downgraded equity funds.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 21 All Fixed-Income Analyst Ratings — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	14,006,821	49,660,355	107,463,143	237,149,380	623,970,482	1,138,676,875
	Count	647	625	599	538	334	149
	vs. Fund History	19,199,451	47,255,967	65,354,331	148,945,122	387,914,380	426,849,530
	P-Value	0.0417	0.0200	0.0385	0.0094	0.0063	0.1257
Downgrades	Average	(26,646,363)	(56,459,781)	(91,417,635)	(128,712,492)	(263,069,537)	(225,991,052)
	Count	1,276	1,245	1,238	1,174	803	242
	vs. Fund History	(6,289,048)	(31,833,773)	(45,538,168)	(52,858,264)	(203,663,213)	(58,397,308)
	P-Value	0.3909	0.2118	0.2274	0.2596	0.0446	0.3648

For analyst-rated fixed-income funds, there was a strong relationship between flows and ratings changes. Both upgrades and downgrades saw flows in the right direction and increasing in magnitude over time; however, the relationship was slightly weaker over longer periods, although this could have resulted from a much smaller sample size.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 22 All Fixed-Income Analyst Ratings — Organic Growth Rate

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.84%	2.87%	6.39%	18.22%	41.10%	91.67%
	vs. Fund History	0.43%	0.59%	-0.60%	-2.70%	-59.73%	-59.46%
	P-Value	0.0448	0.2104				
	vs. Peer Group	0.84%	2.87%	6.39%	18.22%	41.10%	91.67%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002
Downgrades	Average	-0.80%	-1.55%	-1.75%	-2.99%	-4.76%	-5.12%
	vs. Fund History	-0.28%	-0.12%	-0.40%	-5.47%	-30.29%	-25.41%
	P-Value	0.0588	0.4024	0.3388	0.0064	0.0023	0.0638
	vs. Peer Group	-0.80%	-1.55%	-1.75%	-2.99%	-4.76%	-5.12%
	P-Value	0.0000	0.0000	0.0063	0.0215	0.0844	0.3138

The organic growth rate data showed similar results, a strong pattern for both upgrades and downgrades, but the relationship weakened over longer collection periods.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 23 All Multi-Asset and Alternative Analyst Ratings — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	2,285,900	7,732,808	18,317,137	17,870,787	118,900,138	41,930,246
	Count	259	253	241	202	115	69
	vs. Fund History	221,261	12,935,020	21,804,462	(12,947,964)	74,003,645	(48,977,057)
	P-Value	0.0387	0.2244	0.2268		0.2765	
Downgrades	Average	(14,273,126)	(38,058,154)	(75,218,536)	(129,603,146)	(188,860,426)	(278,382,050)
	Count	478	455	448	407	280	111
	vs. Fund History	560,271	1,283,081	(3,737,279)	16,123,589	75,454,173	91,804,760
	P-Value			0.4252			

For all multi-asset and alternative analyst-rated funds, there was a minor relationship between flows and ratings changes. The average flows after an upgrade and downgrade were in the right direction; however, when compared with its flows prior to the rating change, the relationship was weak.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 24 All Multi-Asset and Alternative Analyst Ratings — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.28%	2.16%	5.95%	14.61%	79.26%	185.72%
	vs. Fund History	0.00%	-0.46%	-3.02%	-15.86%	3.81%	16.12%
	P-Value					0.4508	0.4238
	vs. Peer Group	0.28%	2.16%	5.95%	14.61%	79.26%	185.72%
	P-Value	0.1842	0.0130	0.0019	0.0010	0.0002	0.0024
Downgrades	Average	-1.94%	-4.54%	-7.35%	-8.72%	-1.94%	-16.63%
	vs. Fund History	-0.34%	-0.38%	-0.50%	-4.13%	-76.64%	-49.06%
	P-Value	0.1498	0.3193	0.3786	0.1366	0.0032	0.0146
	vs. Peer Group	-1.94%	-4.54%	-7.35%	-8.72%	-1.94%	-16.63%
	P-Value	0.0000	0.0000	0.0000	0.0005	0.3968	0.0104

Similar to equity funds, the relationship between flows and ratings changes was stronger when looking at organic growth rates, especially for downgrades.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 25 All Active Equity Analyst Ratings — Aggregate Flows

As we found that the link between flows and ratings changes was stronger for actively managed strategies than passive, we re-ran the asset class breakdowns for actively managed strategies only.

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(2,887,994)	(12,927,361)	(21,586,572)	(31,375,061)	(87,648,162)	(83,516,397)
	Count	1,441	1,387	1,300	1,106	647	314
	vs. Fund History	13,090,947	16,062,090	17,809,792	18,826,044	74,105,248	211,645,748
	P-Value	0.1115	0.1317	0.1734	0.2802	0.1772	0.0626
Downgrades	Average	(14,451,488)	(41,538,002)	(81,460,208)	(151,173,741)	(309,982,680)	(502,278,679)
	Count	2,310	2,275	2,211	1,948	1,219	562
	vs. Fund History	2,434,023	2,833,187	2,902,688	(5,493,944)	(6,462,842)	2,287,970
	P-Value				0.3859	0.4425	

The relationship for active equity analyst-rated funds was stronger than all active analyst-rated funds. While both upgraded and downgraded funds averaged outflows following a rating change, the outflows after a ratings change were less than the outflows prior to the change for upgrades, implying that outflows slowed after an upgrade, but this relationship was not statistically significant.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 26 All Active Equity Analyst Ratings — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.01%	1.01%	3.23%	11.48%	35.76%	49.96%
	vs. Fund History	-0.18%	0.28%	0.22%	-2.17%	-21.33%	-26.36%
	P-Value		0.2742	0.4125			
	vs. Peer Group	0.35%	2.11%	5.24%	15.22%	43.37%	60.32%
	P-Value	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-1.62%	-4.24%	-7.89%	-12.37%	-19.03%	-29.67%
	vs. Fund History	-0.13%	-0.18%	-1.32%	-3.68%	-15.91%	-42.52%
	P-Value	0.1428	0.2801	0.0158	0.0070	0.0051	0.0002
	vs. Peer Group	-1.34%	-3.30%	-6.14%	-9.22%	-11.90%	-17.72%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004

The relationship between flows and ratings changes did not change much when removing the passively managed equity funds from this universe. The link was still strong for the organic growth rate data.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 27 All Active Fixed-Income Analyst Ratings—Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	14,463,912	42,567,783	88,371,185	221,408,169	492,390,318	736,860,485
	Count	630	608	582	523	323	144
	vs. Fund History	19,016,082	50,339,865	66,017,901	162,257,080	285,177,640	94,101,885
	P-Value	0.0393	0.0126	0.0260	0.0047	0.0247	0.3808
Downgrades	Average	(33,336,213)	(69,078,632)	(104,884,704)	(143,672,550)	(274,796,861)	(329,827,327)
	Count	1,259	1,228	1,221	1,158	789	240
	vs. Fund History	(11,637,404)	(33,091,687)	(50,412,450)	(48,647,825)	(174,904,452)	(125,482,724)
	P-Value	0.3035	0.1987	0.1885	0.2515	0.0538	0.1542

There was little change in the link between flows and ratings changes when removing the passively managed strategies from the fixed-income analyst-rated universe. The relationship was still strong.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 28 All Active Fixed-Income Analyst Ratings—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.87%	2.87%	6.28%	18.17%	39.59%	87.24%
	vs. Fund History	0.47%	0.70%	-0.46%	-2.43%	-62.05%	-58.20%
	P-Value	0.0356	0.1720				
	vs. Peer Group	0.53%	1.92%	4.55%	14.41%	33.38%	78.62%
	P-Value	0.0008	0.0001	0.0000	0.0000	0.0000	0.0017
Downgrades	Average	-0.83%	-1.61%	-1.82%	-3.17%	-5.16%	-5.30%
	vs. Fund History	-0.28%	-0.10%	-0.36%	-5.60%	-30.77%	-24.95%
	P-Value	0.0624	0.4193	0.3562	0.0060	0.0023	0.0698
	vs. Peer Group	-1.12%	-2.50%	-4.26%	-8.52%	-15.26%	-9.34%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.1914

Similar to the aggregate flow data, the relationship was still strong for actively managed fixed-income analyst-rated funds.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

We did not include the tables for all actively managed multi-asset and alternative analyst-rated funds, as our sample only included actively managed analyst-rated funds in this asset class. These tables were identical to the multi-asset and alternative tables above (Exhibit 23 and 24). There was a minor relationship between flows and ratings changes, but the link was stronger when looking at the organic growth rate data.

Exhibit 29 All Active Upgrades to Morningstar Medalists — Aggregate Flows

This universe consisted of any fund whose initial rating was a non-Medalist (Neutral or Negative rating) that was upgraded to a Medalist (Bronze, Silver, or Gold rating). In theory, this type of upgrade should trigger greater flows than an upgrade to a fund that is already a Medalist. However, the results are in line with the larger group of all upgrades.

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	1,200,138	(3,354,336)	(4,711,139)	(1,886,295)	10,240,656	(75,943,186)
	Count	1,009	977	928	808	466	240
	vs. Fund History	(84,969)	7,861,685	5,739,419	2,860,285	16,758,460	56,516,151
	P-Value		0.2351	0.3563	0.4580	0.4043	0.3169

In theory, this type of upgrade should trigger greater flows than an upgrade to a fund that is already a Medalist. However, the results are in line with the larger group of all upgrades.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 30 All Active Upgrades to Morningstar Medalists — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.19%	1.15%	3.79%	14.71%	46.04%	70.76%
	vs. Fund History	0.03%	-0.10%	-0.86%	-1.27%	-36.08%	-31.40%
	P-Value	0.4459					
	vs. Peer Group	0.43%	1.85%	5.06%	16.66%	48.28%	74.35%
	P-Value	0.0006	0.0000	0.0000	0.0000	0.0000	0.0002

Like the aggregate flow data, this data showed a minor link between upgrades and inflows, but it was largely in line with the broader group of upgrades. Again, this link was strongest when comparing with funds in their peer group.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 31 All Active Downgrades to Non-Medalists — Aggregate Flows

This universe consisted of any fund whose initial rating was a Medalist (Bronze, Silver, or Gold rating) that was downgraded to a non-Medalist (Neutral or Negative rating).

		1-month	3-months	6-months	12-months	24-months	36-months
Downgrades	Average	(11,919,663)	(28,340,795)	(54,542,760)	(96,456,764)	(186,108,399)	(365,579,108)
	Count	2,140	2,099	2,077	1,952	1,425	642
	vs. Fund History	(1,829,761)	(449,923)	(4,673,805)	(4,477,981)	13,603,448	(10,531,351)
	P-Value	0.2264	0.4652	0.2820	0.3790		0.4404

We would expect downgrades to Neutral or Negative to have greater impact on flows than other downgrades because funds are moving from recommended status to not recommended levels. The aggregate dollar flows above show steadily growing outflows across all time periods, but when compared with their history, it was not statistically significant.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 32 All Active Downgrades to Non-Medalists — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
	Average	-1.59%	-3.71%	-6.64%	-11.27%	-14.98%	-24.71%
	vs. Fund History	-0.24%	-0.03%	-0.92%	-6.70%	-35.46%	-56.75%
Downgrades	P-Value	0.0351	0.4662	0.0898	0.0000	0.0000	0.0000
	vs. Peer Group	-1.40%	-3.33%	-6.36%	-11.41%	-16.02%	-16.90%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003

The organic growth rate data showed a very strong relationship between downgrades to non-Medalists and outflows. Across all tests, we saw outflows that grew as time went on.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Morningstar Quantitative Rating Results

Exhibit 33 All MQRs — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
	Average	2,050,456	6,442,372	10,079,243	17,130,093	26,963,286	128,928,526
	Count	44,010	26,073	15,871	7,540	2,074	489
Upgrades	vs. Fund History	(38,664)	2,182,085	3,458,220	7,813,073	8,960,455	136,886,020
	P-Value		0.0228	0.0679	0.0469	0.2150	0.0003
	Average	842,571	997,436	(2,330,021)	(2,600,135)	(5,145,013)	(18,735,237)
	Count	44,084	28,013	18,066	9,388	3,005	1,243
Downgrades	vs. Fund History	554,423	525,095	(4,038,808)	4,506,753	6,042,246	(2,961,852)
	P-Value			0.1354			0.4162

Looking at all Morningstar quantitatively rated funds, there was a minor relationship between flows and ratings changes. Following an upgrade, funds on average received inflows, and downgraded funds saw outflows over longer periods. However, these flows relative to their previous flows were largely not significant.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 34 All MQRs — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
	Average	0.34%	2.56%	7.61%	22.90%	69.61%	130.93%
	vs. Fund History	-0.06%	0.76%	2.25%	4.36%	-60.12%	-33.11%
Upgrades	P-Value		0.0000	0.0000	0.0002		
	vs. Peer Group	0.40%	2.46%	7.83%	22.87%	67.30%	123.16%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Average	-0.12%	0.26%	1.65%	7.73%	17.08%	34.98%
	vs. Fund History	-0.17%	-0.29%	-0.58%	-4.09%	-87.05%	-79.54%
Downgrades	P-Value	0.0000	0.0113	0.0410	0.0001	0.0000	0.0004
	vs. Peer Group	-0.05%	0.67%	2.46%	8.28%	15.96%	35.93%
	P-Value	0.25852					

Looking at the organic growth rate data, this relationship was slightly stronger but still inconsistent. The downgrade data was quite perplexing, as on average they saw minor inflows, but those results looked great relative to their past. Compared with their peers, though, they were poor.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 35 All Active MQRs — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	1,186,257	3,486,322	5,037,194	4,820,180	1,366,075	28,465,422
	Count	38,059	22,589	13,734	6,443	1,712	300
	vs. Fund History	(127,470)	1,326,757	2,030,228	4,340,698	(5,772,996)	40,182,403
	P-Value		0.0725	0.1284	0.1116		0.0527
Downgrades	Average	87,849	(978,637)	(4,484,006)	(6,333,597)	(9,335,681)	(20,044,189)
	Count	39,039	25,125	16,325	8,581	2,768	1,153
	vs. Fund History	267,984	178,468	(895,935)	3,883,082	5,754,640	(1,860,356)
	P-Value			0.2690			0.4255

In dollar terms, flows showed little movement in response to Morningstar Quantitative Rating changes.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 36 All Active MQRs — Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.26%	2.23%	7.07%	21.55%	66.27%	152.86%
	vs. Fund History	-0.05%	0.79%	2.52%	5.18%	-51.44%	-3.54%
	P-Value		0.0000	0.0000	0.0001		
	vs. Peer Group	0.26%	2.23%	7.07%	21.55%	66.27%	152.86%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-0.23%	-0.09%	0.90%	6.45%	15.00%	36.88%
	vs. Fund History	-0.18%	-0.33%	-0.75%	-3.94%	-85.68%	-79.48%
	P-Value	0.0000	0.0072	0.0145	0.0002	0.0000	0.0008
	vs. Peer Group	-0.05%	0.67%	2.46%	8.28%	15.96%	35.93%
	P-Value	0.0000	0.1562				

Growth rates did move in sync with rating changes for MQR for some measures. Unlike aggregate flows, there were many growth rate tests that did indicate some link. Also of note, the fund count was massive for the first three time periods but fell from more than 13,000 after six months to less than 1,200 after 36 months. The reason for this is that MQR is updated monthly, and it has only been around since 2017, so only a small amount of rating changes persisted all the way to three years.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 37 All Passive MQRs — Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	7,577,346	25,608,337	42,483,315	89,429,793	148,019,709	288,393,769
	Count	5,951	3,484	2,137	1,097	362	189
	vs. Fund History	549,422	7,725,016	12,952,484	28,342,291	74,530,740	255,120,178
	P-Value	0.4114	0.0851	0.1545	0.1199	0.0650	0.0042
Downgrades	Average	6,682,733	18,188,867	17,867,455	37,098,556	43,799,159	(1,966,101)
	Count	5,045	2,888	1,741	807	237	90
	vs. Fund History	2,749,916	3,370,201	(35,395,549)	9,921,457	(2,136,037)	(21,832,914)
	P-Value			0.1673		0.4835	0.4474

For passive funds, not much of a link exists between MQRs and flows.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 38 All Passive MQRs—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.87%	4.65%	11.08%	30.81%	85.42%	96.12%
	vs. Fund History	-0.09%	0.56%	0.52%	-0.45%	-105.70%	-151.67%
	P-Value		0.0864	0.3097			
	vs. Peer Group	0.87%	4.65%	11.08%	30.81%	85.42%	96.12%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	0.68%	3.34%	8.71%	21.38%	41.37%	10.71%
	vs. Fund History	-0.06%	-0.05%	0.82%	-6.25%	-113.18%	-76.58%
	P-Value	0.31436	0.45678		0.06743	0.00594	0.05553
	vs. Peer Group	0.68%	3.34%	8.71%	21.38%	41.37%	10.71%
	P-Value						

The same was true when looking at organic growth rates.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Star Rating Results

Exhibit 39 All Star Ratings—Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(1,067,595)	573,380	5,444,574	24,300,645	84,494,905	174,483,086
	Count	153,186	80,899	48,308	23,478	7,919	3,271
	vs. Fund History	77,697	3,647,856	12,576,545	38,192,250	95,090,227	187,202,802
	P-Value	0.4156	0.0003	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	(1,677,636)	(7,371,930)	(17,429,925)	(37,236,400)	(75,397,060)	(135,665,856)
	Count	159,084	87,155	53,389	26,379	8,924	3,688
	vs. Fund History	(690,516)	(6,476,273)	(15,665,670)	(38,242,243)	(86,969,784)	(247,504,015)
	P-Value	0.0251	0.0000	0.0000	0.0000	0.0000	0.0000

Across all star ratings, the relationship between flows and ratings changes was very strong. Flows were positive and increasing for upgrades, while downgrades were in outflows that were growing. Relative to the other two rating types, this was the strongest link between flows and ratings changes.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 40 All Star Ratings—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.30%	0.82%	4.19%	16.26%	47.56%	93.63%
	vs. Fund History	-0.08%	1.22%	4.27%	13.98%	24.04%	73.65%
	P-Value		0.0000	0.0000	0.0000	0.0000	0.0000
	vs. Peer Group	-0.16%	1.04%	4.30%	15.71%	46.55%	92.19%
	P-Value		0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-0.32%	-0.76%	-1.45%	-2.03%	-3.24%	-4.62%
	vs. Fund History	-0.20%	-1.12%	-3.27%	-9.80%	-43.52%	-61.04%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	vs. Peer Group	-0.16%	-0.41%	-0.98%	-2.14%	-4.28%	-5.53%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0001	0.0212

Much like the aggregate flow data, the organic growth rate data showed a very strong link. Outside the one-month collection for upgrades, all tests came back in the right direction and statistically significant.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 41 All Active Star Ratings—Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	(2,522,775)	(3,732,240)	(2,698,729)	7,264,555	48,680,421	125,882,959
	Count	139,567	74,063	44,457	21,691	7,316	2,965
	vs. Fund History	(690,516)	3,232,924	11,725,419	39,060,364	101,145,259	199,318,717
	P-Value		0.0001	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	(2,486,024)	(8,918,902)	(19,120,192)	(45,399,087)	(102,014,753)	(179,430,922)
	Count	145,247	80,155	49,358	24,451	8,264	3,409
	vs. Fund History	(360,716)	(4,706,828)	(11,073,427)	(32,486,318)	(90,270,015)	(252,597,952)
	P-Value	0.0710	0.0000	0.0000	0.0000	0.0000	0.0000

When only looking at actively managed star ratings, there was a strong link between flows and rating changes, aside from the one-month collection period.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 42 All Active Star Ratings—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	-0.38%	0.52%	3.69%	15.48%	47.07%	96.11%
	vs. Fund History	-0.09%	1.18%	4.37%	14.36%	26.79%	80.52%
	P-Value		0.0000	0.0000	0.0000	0.0000	0.0000
	vs. Peer Group	-0.16%	1.00%	4.25%	15.85%	47.86%	98.01%
	P-Value		0.0000	0.0000	0.0000	0.0000	0.0000
Downgrades	Average	-0.36%	-0.88%	-1.76%	-2.84%	-5.74%	-7.25%
	vs. Fund History	-0.17%	-1.05%	-3.21%	-9.82%	-45.29%	-63.18%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	vs. Peer Group	-0.12%	-0.33%	-0.99%	-2.13%	-4.95%	-5.99%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0160

The organic growth rate data showed similar results as the aggregate flows. Aside from the one-month upgrade period, there was a very strong link between flows and star rating changes.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 43 All Passive Star Ratings—Aggregate Flows

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	13,847,036	47,221,583	99,453,097	231,088,468	519,020,221	645,396,077
	Count	13,617	6,836	3,851	1,787	603	306
	vs. Fund History	2,880,688	7,905,430	24,356,248	46,889,637	100,542,983	157,725,909
	P-Value	0.1699	0.1684	0.1804	0.1287	0.2407	0.2809
Downgrades	Average	6,807,516	10,342,013	3,266,725	66,283,227	257,888,716	399,083,638
	Count	13,838	7,000	4,031	1,928	660	279
	vs. Fund History	(4,154,915)	(26,758,513)	(74,864,356)	(128,198,784)	(119,683,188)	(276,501,534)
	P-Value	0.0919	0.0092	0.0044	0.0015	0.1756	0.1520

Like the other two ratings, the link between flows and star rating changes was weaker for passively managed funds than for actively managed funds. However, the star rating showed a stronger link for passively managed funds than the other two ratings. As a whole, passively managed funds were in inflows over the sample period, and we saw inflows after both star rating upgrades and downgrades, but greater inflows for upgrades.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 44 All Passive Star Ratings—Organic Growth Rates

		1-month	3-months	6-months	12-months	24-months	36-months
Upgrades	Average	0.49%	4.05%	9.93%	25.71%	53.43%	69.68%
	vs. Fund History	-0.01%	1.72%	3.36%	10.56%	-3.14%	13.46%
	P-Value		0.0000	0.0000	0.0000		0.2659
	vs. Peer Group	-0.26%	1.49%	4.85%	14.02%	30.70%	35.59%
	P-Value		0.0000	0.0000	0.0000	0.0000	0.0110
Downgrades	Average	0.04%	0.66%	2.41%	8.22%	28.06%	27.46%
	vs. Fund History	-0.44%	-1.97%	-4.27%	-10.42%	-23.59%	-35.95%
	P-Value	0.0000	0.0000	0.0000	0.0000	0.0319	0.0310
	vs. Peer Group	-0.59%	-1.33%	-0.85%	-2.25%	4.14%	0.17%
	P-Value	0.0000	0.0000	0.2462	0.0463		

The organic growth rate data showed a similar trend. Passively managed funds were on average in inflows after upgrades and downgrades; however, by comparing those flows with peers or its prior flows, there was a minor link between flows and ratings changes.
Source: Morningstar Direct. Data as of Dec. 31, 2022.

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