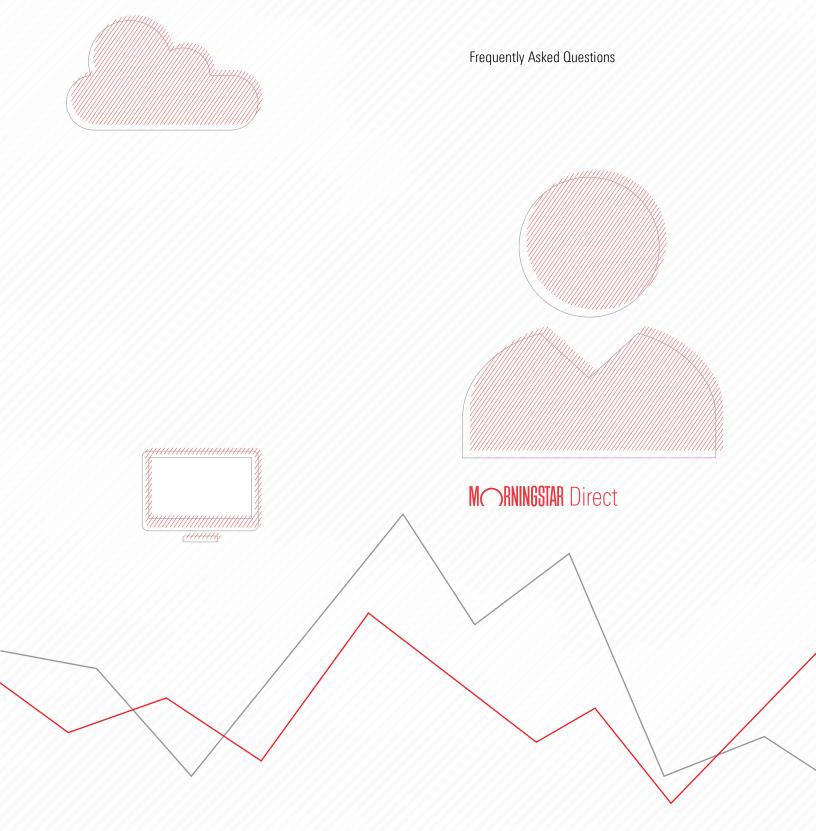
Asset Flow Forecasts



Copyright © 2021 Morningstar, Inc. All rights reserved.

The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; (3) is not warranted to be accurate, complete or timely; and (4) does not constitute advice of any kind. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Any statements that are nonfactual in nature constitute opinions only, are subject to change without notice, and may not be consistent across Morningstar. Past performance is no guarantee of future results.

Contents

Overview	5	
Data Questions		6
Overview How is the asset flow data derived? Rather than net flow data, can gross flow data be seen to break out sales vs. redemptions?	6	
What is excluded from the asset flow numbers? Does the flow data reflect survivorship bias? Can I upload my own custom data within the application? My firm merged with (or acquired) another firm, but the two firms still appear as separate entities on the	6 7	
list; why is it not merged together under one brand name?	7	
General Questions about Using Asset Flow Forecasts		8
Overview	8 9	
set of competitors does not seem to be reflected in Asset Flow Forecasts? Can my competitors see what I am seeing in Asset Flow Forecasts? Is Asset Flow Forecasts an add-on to Morningstar Direct? How can data for multiple fund families be seen?	11 11	
Questions about the Overview Tab		12
Overview		
aggregated to the Brand level be seen across regions and fund types?	12	
Questions about the Market Tab		13
Overview On the Market - Overall page, what data is reflected		
in the Top Countries and Top Regions groupings?		
what percentage of new asset flows is seed capital?	13 :a? . 13	
Questions about the Competitor Tab		14
Overview	14	

Questio	ns about the SWOT Tab	15
	Overview	15 16 16 17 18
Questio	ns about the Predictive Tab	
	Overview How often do the flow factors change? Has Morningstar studied the accuracy of the model over time? Is the Morningstar Quant Rating part of the model? Are any of the predictive scores rolled up to the firm level? How is the Morningstar Category Forecast calculated? When viewing the Flow Attribution data, how is the Factor Contribution (%) value calculated? On the Predictive tab, why don't all pages show all funds?	19 19 19 19 19 19 20
Questio	ns about the Flow Factors Tab	21
	Overview How do I interpret the information on this tab? What does the size of the bubbles represent?	21
Questio	ns about the Sales Activity Tab	
	Overview Why don't I see the Sales Activity tab? What is the data source for this tab?	22
Questio	ns about the Product Details Tab	23
	Overview	23
	On the Product Details tab, how is Growth Rate (%) calculated?	23

Frequently Asked Questions about Asset Flow Forecasts

This document provides answers to certain frequently asked questions about using Asset Flow Forecasts. The answers here are informational, not procedural. For instructions on how to use Asset Flow Forecasts in a variety of workflows, please see the Quick Start guide. The questions and answers are organized into the following main sections:

Overview

- ► Data Questions (page 6)
- General Questions about Using Asset Flow Forecasts (page 8)
- Questions about the Overview Tab (page 12)
- Questions about the Market Tab (page 13)
- Questions about the Competitor Tab (page 14)
- Questions about the SWOT Tab (page 15)
- Questions about the Predictive Tab (page 19)
- Questions about the Flow Factors Tab (page 21)
- Questions about the Sales Activity Tab (page 22)
- Questions about the Product Details Tab (page 23)

verview Market Competitive SWOT /	nalyzer Predictiv	e Flow Facto	rs Sales Activit	y Product	t Details		t (Dov	vnload) (Filters V
und Flows Research			AUM SWOT			(Competitors	Your Brand
itle	Date				Share Classes	Funds	$\overline{)}$	
idia Domestic Fund FlowsJune 2021	Aug 06 2	021	Gifted	Laggar	de .	Best in	Class	Vulnerable
ustainable Investing Landscape for Indian Fund Investors	Aug 06 2	021	Contenders	Underp		Stars	01035	Anomalies
sia ETF RoundupJuly 2021	Aug 05 2	021	11					¥
lorningstar Direct Japan Asset Flows UpdateAugust 2021	Aug 05 2	021	Share Class N				Share Class	
ustainable Fund Flows Slow in Q2	Jul 29 20	21	39 \$	170.53 Bil			213	\$ 753.00 Bil
lobal Sustainable Fund Flows: Q2 2021 in Review	Jul 27 20	21		Share Class	Net Assets	Share Class	Net Assets	
.S. Sustainable Fund Assets Reach a New Milestone in 2021's Secon	d Quarter Jul 26 20	21		52	\$ 6.64 Bil	112	\$ 7.61 Bil	
iquid Alternatives Funds: Is There Any Hope?	Jul 22 20	21		02	1 0.01 0.1		1.01 5.	
und Flows 2021 🕟	Jul 22 20	21		Share Class	Net Assets	Share Class	Net Assets	
Iorningstar Direct Asset Flows Commentary: EuropeJune 2021	Jul 22 20	21		103	^{\$} 22.38 Bil	69	^s 25.52 Bil	
Iorningstar Direct European ETF Asset Flows Update02 2021	Jul 21 20	21						
undInvestor: Tax Bills May Follow at These Funds	Jul 20 20	21		t Assets			Share Class	Net Assets
Iorningstar U.S. Fund Flows: A Record First Half of the Year	Jul 15 20	21	166 \$ 1	320.40 Bil			57	\$ 347.65 Bil
e		E F	Time period for Flow	Score is 3 Years.				As of Jun 30, 2021
			For more info ple	ase go to SWOT	Analyzer.			
			-					
Aorningstar Category Overview								
		Тор	Bottom					
		top						
Retur	n (%)		Flow (\$Mil)					2 Month Growth

Data Questions

This section provides answers to the following general questions about the data displayed in Asset Flow Forecasts:

- ► How is the asset flow data derived? on page 6
- Rather than net flow data, can gross flow data be seen to break out sales vs. redemptions? on page 6
- ► What is excluded from the asset flow numbers? on page 6
- Does the flow data reflect survivorship bias? on page 7
- ► Can I upload my own custom data within the application? on page 7, and
- My firm merged with (or acquired) another firm, but the two firms still appear as separate entities on the list; why is it not merged together under one brand name? on page 7.

Morningstar uses a cash flow methodology taking all funds' reported AUM data and then backs out any marketing appreciation/depreciation while also accounting for any distributions paid during the period. This allows for an Estimated Net Flow value based on the change in AUM from one time period to another, which is the data forming the basis of Asset Flow Forecasts.

No, Morningstar does not have access to the data needed to break out sales vs. redemptions. The net effect of both can be observed, but not isolated given how this data is calculated (see above).

When aggregating total assets or flows for top universes, regions, countries, and categories, fund-of-funds and feeder funds are excluded, so assets and flows recorded in these investments are not counted as duplicates.

This exclusion applies to the following tabs:

- ► Overview Morningstar Category Overview widget
- ► Overview Shutdown Forecast 24 Months probability widget
- ► Market Overall

M RNINGSTAR

- ► Market Company
- ► Market New Launches
- ► Market Upcoming Launches, and
- ► Competitive Fund Flows.

In other tabs, funds-of-funds and feeder funds are not excluded. Money Market Funds are not excluded, but they can be excluded or selected separately by using the Investment Type drop-down field in the filter panel to the right.

How is the asset flow data derived?

Overview

Rather than net flow data, can gross flow data be seen to break out sales vs. redemptions?

What is excluded from the asset flow numbers?

The Morningstar Fund Flow Model uses the global, survivorship-bias-free mutual fund database from Morningstar. In the U.S., the fund flow data set begins in 2003, but because of data availability, the ex-U.S. sample does not begin until 2008.	Does the flow data reflect survivorship bias?
No, data cannot be uploaded, but if a need exists to access the platform data outside of Asset Flow Forecasts, please contact your Customer Success Manager.	Can I upload my own custom data within the application?
The two child brands still appear as separate brands as long as the products are rebranded in the Morningstar data collection database. For this to change the fund company notifies the Morningstar Data collection team with details on new names, effective dates, and so on.	My firm merged with (or acquired) another firm, but the two firms still appear as separate entities on the list; why is it not merged together under one brand name?

General Questions about Using Asset Flow Forecasts

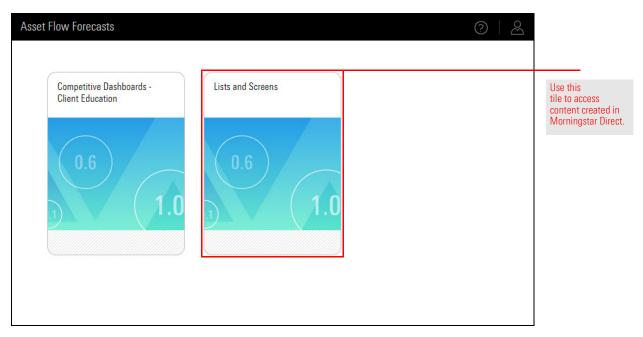
This section answers the following general questions about using Asset Flow Forecasts:

- ► Where do the available Lists and Screens come from? on page 8
- ► How can the full list of available investment types be seen? on page 9
- ► Why does data for separate accounts sometimes not show? on page 10
- Why is it that a firm added to the set of competitors does not seem to be reflected in Asset Flow Forecasts? on page 10
- ► Can my competitors see what I am seeing in Asset Flow Forecasts? on page 11
- ► Is Asset Flow Forecasts an add-on to Morningstar Direct? on page 11, and
- ► How can data for multiple fund families be seen? on page 11.

The Lists and Screens tile on the landing page allows clients to access the content created in Morningstar Direct. This includes lists and search criteria, as well as screens created from the web access point of Morningstar Direct.

Where do the available Lists and Screens come from?

Overview



To see all investment types currently being displayed, click the Investment Type drop-down field in the filter panel to the right.

How can the full list of available investment types be seen?

C < Cownload (Filters ∨	
Assets Flows Measure Percentage Amount Percentage Include Obsolete	
Active/Passive	
Domicile All V	
Global Broad Category Group	
Global Category All V	
Investment Type	Use this field to limit whit types of investments are reflected in the interface.
Done	
 All 529 Portfolio Closed-End Fund Collective 	

Unlike other managed investments, separate accounts typically report asset data on a quarterly basis, rather than monthly. When the previous calendar month-end is not also a calendar quarter end (March 31, June 30, September 30, December 31), then separate account data may not show by default in Asset Flow Forecasts.

Why does data for separate accounts sometimes not show?

To account for this, use the **Account icon** on the header to change the **Global Settings** and set the **As of Date** to **Last Quarter End**.

Pote: If data is still missing for the investments being considered, try changing the As of Date to Last Quarter End -1.

Competit	ive Dashboa	ards - Client Ed	ucation				Cha	ad Lowry (2 🖻
Overview	Market	Competitive	SWOT Analyzer	Predictive	Flow Factors	Channels	Chad Lo	wry Settings	ai
Fund Flows R	esearch			AUM SW	DT		Sign Ou	ıt	n
Title Global Sustainable Fi	und Flows, Q2 20	20	Date 🔺	Gifted	Sha Laggard	are Classes ds	Funds Best in Clas	52	Vulnerable
European Sustainabl Sustainable Funds Co Second Quarter			Jul 30 2020 Jul 30 2020	Contenders Share Class		erformers	Stars	Share Class	
Thailand Fund Indust Morningstar Fund I Canada ESG Funds	ry Review - 0.2 21 Settings	020	Jul 29 2020	19	\$ 202.09 Bil) Save	are Class	179 Net Assets \$ 12,23 Bil	\$ 580.50
Flowmageddon: It Weekly Wrap: Wha Rule Means for ESI	As of Date	5.1	~				are Class	Net Assets	
	Last Month Last Month Last Month						cha	e the Accour inge the As o bal Settings	of Date in th
	Last Quart Last Quart	<mark>er End</mark> er End (-1 Quarte	r)						
	Currency US Dollar		\vee						

This could result from one of the following reasons:

- 1. After adding or removing a competitor, be sure to click **Done** to make the data reflect this change.
- Be sure you have not added the firm you're looking for under Brand within the Gear icon. If you've added a firm here, it will combine it with the focus firm of your application. In that case, you won't be able to add it as a competitor firm. Simply remove it from the Brand section and you will once again be able to add it as a competitor.
- 3. The same goes if you added a firm as a competitor. In that case you can't also make it part of your Brand.

Why is it that a firm added to the set of competitors does not seem to be reflected in Asset Flow Forecasts? The dashboards are built using data Morningstar collects and synthesizes. If you and your competitor have both been provisioned on the default version of the dashboard with the same list of competitors and use the same calculation benchmarks, then technically they would see the same views as you do.

No, the platform is not an add-on to Morningstar Direct. Note that you can pull in any list, search criteria, or screen saved in Morningstar Direct to populate within certain tabs in Asset Flow Forecasts. Additionally, a set of funds being analyzed in Asset Flow Forecasts can be saved as a list to be opened in Morningstar Direct

The Settings icon appears in the top-right part of any tab pulling in your brand and competitors, and the Settings menu allows clients to add additional firms to either the Brand or Competitors setting. clients can either add up to 50 firms to the Brand setting, or up to nine firms as Competitors.

Can my competitors see what I am seeing in Asset Flow Forecasts?

Is Asset Flow Forecasts an add-on to Morningstar Direct?

How can data for multiple fund families be seen?

🔒 🕴 Competitive Das	shboards - Client E	ducation							v 🤉 🖄	~
Overview Market	Competitive	SWOT Analyzer	Predictive	Flow Factors	Channels	Sales Activity	Product Details	کې (Downl		
Overall Amer	ican Funds	New Launches	Upcomi	ing Launches			Settings		2	
Top Investment Types				p Category Groups			Brand American Funds		>	Use the Setting
Collective Investment Trusts	2,627,547,285 M		E	quity	2,770,499,7	54 M	Competitors		>	icon to select u
Separate Account	93,683,537 M	1	F	ixed Income	52,022,8	96 M	2 Selected			to 50 firms.
Models	80,009,932 M		A	llocation	12,494,4	8 M	Parent Company		>	
Open-End Fund	29,329,833 M		N	Aoney Market	7,434,0	20 M	Morningstar		>	
Exchange-Traded Fund	6,214,958 M		N	liscellaneous	1,312,6	46 M			TK.	
Money Market Fund	4,072,525 M		۵	Iternative	927,1	55 M		Time Period		
Insurance Product Fund	2,478,857 M		P	roperty	308,7	22 M		3 Years	\vee	
VA Subaccount	933,798 M		C	ommodities	303,1	23 M		Data Type		
Closed-End Fund	929,274 M		L	Inclassified	216,4	94 M		Assets	Flows	
UK LP SubAccounts	195,700 M		C	onvertibles	104,5	95 M		ASSEIS	FIOWS	
Top Regions			То	p Global Categories				Measure Amount	Percentage	
United States	2,825,458,034 M			IS Equity Large Cap Value	2,737,229,1	17 M			DZOIELE	
Eurozone	8,954,643 M			IS Fixed Income	45,113,1	72 M		Active/Passive		
Asia Emerging	2,517,526 M		G	ilobal Equity Large Cap	10,226,6	45 M		All	\vee	
United Kingdom	1,597,273 M		N	Inderate Allocation	8,973,6	19 M			•	
Canada	1,588,829 M		L	IS Equity Large Cap Blend	6,204,8	10 M		Domicile		
Europe ex-Euro	1,441,246 M		L	IS Money Market	5,024,5	91 M		All	\vee	
Latin America	1,339,229 M		L	IS Equity Large Cap Growth	3,988,9	26 M				
Australasia	1.299.031 M		E	quity Miscellaneous	3.472.8	53 M		Global Broad Ca	tegory Group	

Optionally, scroll to the bottom of the Overall page on the Market tab to click **Export All Fund Families**.

op Fund Families		Тор	 Fund Families 		•	
1 Wilmington Trust	2,625,846,949 M					
2 Weatherstone	80,943,622 M					
3 High Tower	80,000,000 M					
4 Vanguard	5,445,746 M					
5 American Funds *	5,259,427 M					
5 iShares	2,169,209 M					
7 BlackRock	1,956,746 M					
8 Capital Group	1,645,173 M					
9 JPMorgan	1,594,066 M					
10 PIMCO	1,453,206 M					
American Funds *	5,259,427 M					Clients ma
						need to so
						down to se
						this buttor
				0	Export All Fund Famil	1

Research

Featured Latest

Publications Topics Videos Your Research Alerts Bookmarks

 Lists
 Following Active/Passive Baromete

Fund Flows

Katherine Lynch

Sheryl Rowling

Kevin McDevitt, CFA

Sustainable Investing U.S. Fund Flows Monthly Re

Questions about the Overview Tab

Topics

Moat Investing

4535 documents Yesterday

Fund Flows

9+

9+

9+

9+

9

9+

9+

more dynamic in terms of customization.

This section answers the following questions about the Overview tab:

- What is the source of the content in the Fund Flows Research widget? on page 12, and
- On the Overview tab, can all data aggregated to the Brand level be seen across regions and fund types? on page 12.

The content seen in this widget is identical to that seen in the Fund Flows topic in the Research Portal.

Macro and Markets

1483 documents Yesterday

APAC Manager Research

What is the source of the content in the Fund Flows Research widget?

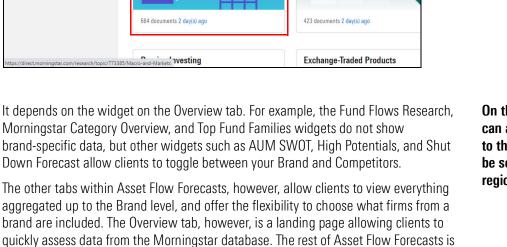
Overview

The content here is what shows

in the Fund Flows Research

widget on the Overview tab

in Asset Flow Forecasts.



On the Overview tab, can all data aggregated to the Brand level be seen across regions and fund types?

Questions about the Market Tab

This section answers the following questions about the Market Tab:	Overview
 On the Market - Overall page, what data is reflected in the Top Countries and Top Regions groupings? on page 13 When considering new fund launches, what counts as a fund? on page 13 For new fund launches, can it be seen what percentage of new asset flows is seed capital? on page 13, and What does the Upcoming Launches page show and what is the source for this data? on page 13. 	
The data in these two groupings is based on each fund's domicile, and not which country or region from which the fund flows themselves originate.	On the Market - Overall page, what data is reflected in the Top Countries and Top Regions groupings?
As reflected on the New Launches page on the Market tab, new funds are counted at the fund level, not the share class level.	When considering new fund launches, what counts as a fund?
No, unfortunately Morningstar is able to see only how much money is coming into the fund (or leaving the fund), and not what kind of money it is or where that money originated.	For new fund launches, can it be seen what percentage of new asset flows is seed capital?
The data on the Market - Upcoming Launches page is most useful outside the U.S. In cases where data is available for funds prior to their inception dates, Morningstar surfaces those funds on this page.	What does the Upcoming Launches page show and what is the source for this data?

Questions about the Competitor Tab

 This section answers the following questions about the Competitor tab: How should the colors on the Competitive tab be interpreted? on page 14, and On the Performance page, how is average excess return calculated? on page 14. 	Overview
On both the Fund Flow and Performance pages of the Competitive tab, red reflects areas of outflows while green indicates areas of inflows. The darker the shade, the more pronounced those inflows or outflows are on a relative basis based on the peers being used for comparison.	How should the colors on the Competitive tab be interpreted?
For every share class, excess return is calculated relative to either the prospectus primary benchmark or category average, based on the selection made in the Global Settings dialog box. (The default value is Morningstar Category Average.)	On the Performance page, how is average excess return calculated?
These excess returns are then asset weighted when rolling them up to the different levels (brand, broad category, and Morningstar Category).	

Questions about the SWOT Tab

This section answers the following questions about the SWOT tab:

- ► What does SWOT stand for? on page 15
- ► How are the various sections of the SWOT chart defined? on page 16
- Why do some funds lack flow factor exposures, causing them to not appear on the SWOT chart? on page 16
- ► How are the flow factor and flow score calculated for a fund? on page 17
- ► What is the Expense Ratio Equivalent, and how is it calculated? on page 18, and
- ► Is the data on the SWOT chart at the fund or the share class level? on page 18.

Strength, Weakness, Opportunities, and Threats. The orientation of the chart can be interpreted as follows:

Opportunities	Strength
These funds have strong performance, but weak asset flows. They have the opportunity to see their flows improve based on their performance.	These funds have both strong asset flows, and strong performance.
Weakness	Threats
These funds have both poor asset flows and poor performance. If one or both do not improve, they are likely to be shuttered.	These funds have seen good asset flows, but not because they have exhibited strong performance. If the latter does not improve, the former is soon likely to falter.

Overview

What does SWOT stand for? The groupings depicted in the chart on the SWOT Analyzer tab are explained in the following table:

How are the various sections of the SWOT chart defined?

Funds in this SWOT Category	Exhibit
Stars	Above median flow factor attribute score and above median actual realized flows relative to category peers over the selected time period.
Best in Class	Top quartile flow factor attribute score and top quartile actual realized flows relative to category peers over the selected time period.
Contenders	Above median flow factor attribute score but below median actual realized flows relative to category peers over the selected time period.
Gifted	Top quartile flow factor attribute score but bottom quartile actual realized flows relative to category peers over the selected time period.
Underperformers	Below median flow factor attribute score and above median actual realized flows relative to category peers over the selected time period.
Laggards	Bottom quartile flow factor attribute score and bottom quartile actual realized flows relative to category peers over the selected time period.
Anomalies	Below median flow factor attribute score but above median actual realized flows relative to category peers over the selected time period.
Vulnerable	Bottom quartile flow factor attribute score but top quartile actual realized flows relative to category peers over the selected time period.

To have a flow factor exposure, a fund needs to meet the following criteria:

- ► it must have at least three years of data
- ► it needs to be in the Equity, Fixed Income, or Allocation asset classes, and
- ► it must have at least USD\$100 million in assets, except for funds from the Japan region, which require assets under management of USD\$30 million.

Why do some funds lack flow factor exposures, causing them to not appear on the SWOT chart? The Flow Score value is a security's percentile rank, when compared against its Morningstar Category peers. The bigger the net flow, the higher the flow score. If a security's net flow is the biggest in its category, it will have a flow score of 100.

The Flow Factor Score, in contrast, is a security's percentile rank for the specific flow factor, when compared against its Morningstar Category peers. The scoring order depends on flow factor:

- ► For Excess Return or Morningstar Rating, the bigger value, the higher Flow Factor Score. If a security's Excess Return is the biggest in its category, it will have Flow Factor Score of 100.
- ► For Flow Factors of Expense Ratio, the smaller value, the higher Flow Factor Score. If a security's Expense Ratio is the smallest in its category, it will have Flow Factor Score of 100.

For example, based on the following screen shot, Fidelity Enhanced Income Fund has the following metrics:

Share Class Name:	Fidelity Enhanced Income W Inc Monthly
Ticker: Branding Name:	Fidelity
Morningstar Category:	EAA Fund UK Equity Income
Morningstar Category Forecast Growth 12-Month 9	6. · ·
SWOT Category:	Stars
Excess Return Score:	54.76
Flow Score:	89.22
Flows (Mil):	42.2
Net Assets (Mil):	89.65
Fund Forecast Growth Rate 12-Month %:	
Fund Forecast Uncertainty :	
Morningstar Rating:	****
Expense Ratio Equivalent (%):	0.920
Index Fund:	No
Fund of Funds:	No
Fund Age (Years):	4.25
Excess Return 12 Month (%):	-2.069

How are the flow factor and flow score calculated for a fund?

The relationship between the highlighted items is explained below.

- ► an Excess Return of -2.069 (when compared to the primary prospectus benchmark)
- ► an Excess Return Score of 54.76 (this is the Flow Factor Score)
- ► a net flow of 42.2 million, and
- ► a Flow Score of 89.22.

The Excess Return Score of 54.76 means 45.24% of the peers in the EAA Fund UK Equity Income category have an Excess Return over the selected time period better than -2.069%. The Flow Score of 89.22 means 11.78% of peers in the EAA Fund UK Equity Income category have net flows greater than 42.2 million over this time period.

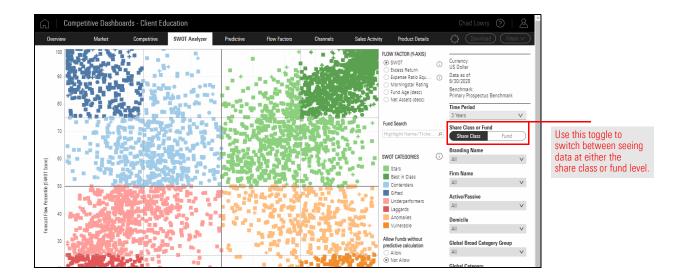
The Expense Ratio Equivalent is a fund's expense ratio based on country of domicile. Different regions have different reporting requirements for mutual fund expenses.For example, in the U.S., the Net Expense Ratio is the most commonly used data point encompassing all fees levied on an investor over the past year, including performance-based fees.

In the United Kingdom and Europe, the Ongoing Charge is the most commonly used data point to express fees levied on investors in the past year. Unlike the Net Expense Ratio, the Ongoing Charge does not include performance-based fees. Therefore, to harmonize net expense ratios of U.K., and Europe-domiciled funds, the performance fees are added back to the Ongoing Charge.

For funds-of-funds, acquired fund expenses are also included. For all domiciles, Morningstar does its best to harmonize fee-reporting differences across geographies. To find an annual report net expense ratio equivalent data point, various annual report net expense ratio equivalent data points are combined.

Clients can see information on the SWOT chart at both the fund and share class level. In the filter panel to the right, use the Share Class or Fund toggle to change this selection. What is the Expense Ratio Equivalent, and how is it calculated?

Is the data on the SWOT chart at the fund or the share class level?



Questions about the Predictive Tab

 This section answers the following questions about the Predictive tab: How often do the flow factors change? on page 19 Has Morningstar studied the accuracy of the model over time? on page 19 Is the Morningstar Quant Rating part of the model? on page 19 Are any of the predictive scores rolled up to the firm level? on page 19, and How is the Morningstar Category Forecast calculated? on page 19. 	Overview
The model is run monthly, and the premium associated with each factor (that is, the level of impact on fund flows a factor has) reflect the current state based on this data. About every six months, the Morningstar Quantitative Research Team determines whether factors should be added or removed from the model based on the current investing environment and what is statistically significant.	How often do the flow factors change?
The fit of the model and some statistics related to it are provided in Appendix D of this methodology document.	Has Morningstar studied the accuracy of the model over time?
This is currently not a factor as there isn't yet enough historical data to include it, but we'll assess further when that history has been reached.	Is the Morningstar Quant Rating part of the model?
Today, the predictive analysis is provided at both the fund and share class level. At some point, this may be expanded to the firm level.	Are any of the predictive scores rolled up to the firm level?
In late 2019, the Morningstar Category Flow model was developed to allow clients to see forecasted growth rates for U.S. Fund categories. For more information, please see the methodology paper.	How is the Morningstar Category Forecast calculated?

On the Flow Attribution page on the Predictive tab, Factor Contribution (%) column is derived by multiplying the value in the Factor Exposure column with the value in the Factor Premia column. Because the Factor Exposure is how much a fund is exposed to a particular factor relative to peers, and the Factor Premia represents the overall impact of a factor from a fund flows perspective, multiplying these together provides a sense of the impact of a factor on a fund.

When viewing the Flow Attribution data, how is the Factor Contribution (%) value calculated?

This data is expressed in monthly %. So for example, if the Fund Age factor is shown to contribute 1.88%, this means on a monthly basis going forward, you can expect a fund's age to contribute 1.88% monthly growth to AUM. The forecasts offer these monthly values looking out one year.

Factor Group	Flow Factor		Factor Value	Factor Contribution (%)	Factor Exposure	Factor Premia	
	Growth Forecast	0		0.24			
	Fund Specific	()		-0.67			
	Intercept	1		-0.55			
	Factor Total	1		1.47			
Performance	Morningstar Rating]	*****	0.81	1.00	0.81	The values
Performance	Excess Return TTM	%	8.67	0.43	0.87	0.49	here are the
Performance	Cumulative 12-Month Growth Rate		0.96	0.20	0.48	0.42	product of the
Performance	Cumulative Outflows (Month)		2	0.11	-0.33	-0.32	two columns to the right.
Price	Net Expense Ratio %		1.09	0.06	-0.58	-0.10	to the right.
Process	Fund Size (\$bil)		3.11	0.01	2.07	0.01	
Process	Index Fund		No	0.00	0.00	0.82	
Process	ESG Fund Overall		No	0.00	0.00	0.38	
Performance	Category Average Return 1-Month %		1.10	-0.00	-0.01	0.09	
Performance	Fund Age: Cumulative 12-Month Gro		_	-0.01	-0.54	0.02	
Process	Portfolio Concentration		40.24	-0.02	-0.24	0.07	
Parent	Firm AUM (\$bil)		91.79	-0.05	0.59	-0.09	
Process	Fund Age (Month)		54.00	-0.07	-1.14	0.06	

To have a Flow Factor exposure, a fund needs the following qualifiers:

- ► At least three years of data
- ► Must be in either the Equity, Fixed Income, or Allocation asset class, and
- Must be domiciled in a region for which Morningstar has rolled out a specific flow factor model.

On the Predictive tab, why don't all pages show all funds?

This section answers the following questions about the Flow Factors tab:

- ► How do I interpret the information on this tab? on page 21, and
- ▶ What does the size of the bubbles represent? on page 21.

Competitive Dashboards - Client Education

Competitive

Expense vs. Flow

Market

["]

Overview

Performance vs. Flow

The chart illustrates the relationship between either a fund's flows or growth rate (at the share class level) and one other variable. For example, the default setting is to show the relationship between fund flows and excess return. To what extent is it true for the funds shown that a higher excess return leads to better asset flow or growth?

On any of the pages on the Flow Factors tab, the size of a bubble represents the relative size of the fund as measure by its AUM.

SWOT Analyzer

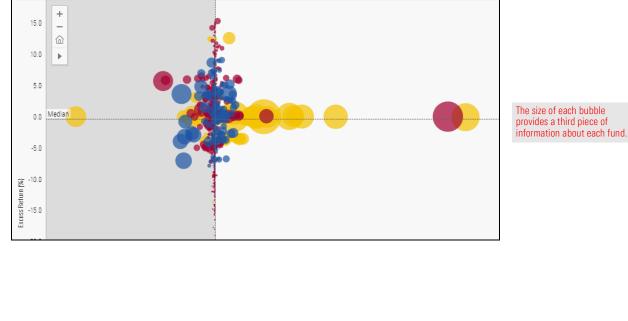
What does the size of the bubbles represent?

Sales Act

Channels

How do I interpret the

information on this tab?



Predictive

Rating vs. Flow

Flow Factors

Overview

Questions about the Sales Activity Tab

 This section answers the following questions about the Sales Activity tab: Why don't I see the Sales Activity tab? on page 22, and What is the data source for this tab? on page 22. 	Overview
For data to show on the Sales Activity tab, your firm needs to use Morningstar Report Portal. Report Portal is an application traditionally used by sales teams to launch custom-branded reports used in the sales process.	Why don't I see the Sales Activity tab?
The Sales Activity tab aggregates a firm's usage data within Report Portal, allowing you to see which of your funds (as well as your competitors' funds) are being used on these reports. This allows a firm to seamlessly assess what these funds look like on a forward and historical basis, and potentially tweak sales strategy or positioning based on the analytics being seen within Asset Flow Forecasts.	What is the data source for this tab?

Questions about the Product Details Tab

This section answers the following question about the Product Details tab:

► On the Product Details tab, how is Growth Rate (%) calculated? on page 23.

For example, if a fund shows a 3-year Growth Rate of 1,881,552%, how can that be correct? Note that the Growth Rate is calculated using the following formula:

$\frac{100\times {\sf EstimatedNetFlowDuringSelectedTimePeriod}}{{\sf NetAssetsAtTheBeginningofSelectedTimePeriod}}$

This same methodology is used in the Asset Flows module found in Morningstar Direct.

Funds launched just about three years ago will show a huge growth over that time period. For Growth Rate at the fund level, the estimated net fund flow and fund size at the beginning is first aggregated, then calculated with the Estimated Fund Flow divided by Aggregated Fund Size. The same process applies to Growth Rate for other aggregate levels, such as Firm or Category.

Overview

On the Product Details tab, how is Growth Rate (%) calculated?