



Shorts and Derivatives in Portfolio Statistics

Morningstar Methodology Paper
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Version History

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April 2007	Updated to reflect roll-out date change from May 2007 to August 2007. Content otherwise unchanged.
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December 2006	Updated to reflect impact of swaps and options.
October 2006	Original document with information about futures, forwards, and short positions.

Introduction

Morningstar has a rich tradition of holdings-based analysis of mutual funds and other investment portfolios. The portfolio holdings provide insight into the manager's strategy and help investors determine if an investment might be appropriate for them. The holdings for a fund also determine the Morningstar Category, which in turn is the peer group for the Morningstar Rating™.

Most portfolios hold fairly conventional securities, such as long positions in stocks and bonds. Other portfolios use other investment strategies or securities, such as short positions or derivatives, to reduce transaction costs, enhance returns, or reduce risk. Some of these securities and strategies behave like conventional securities, while others have unique return and risk characteristics.

Morningstar completed a multi-phase initiative to incorporate the impact of short positions and derivatives into a portfolio's descriptive statistics. These enhanced statistics provide a more comprehensive look at all the positions in the portfolio. This document outlines these initiatives and the resulting changes to the portfolio statistics. It also provides recommendations for Morningstar's clients and internal divisions for what data to display given different space and format constraints.

The first phase of this project involved collecting data in a way that allowed for identification and proper valuation of holdings. The document entitled *Morningstar's Standardized Global Portfolio Template* describes how short positions and derivatives should be reported in the portfolio files that custodians and investment managers send to Morningstar.

The second phase of this project involved recalculating current and historical portfolio statistics to better capture the exposures provided by these instruments. This document describes how the portfolio statistics changed and gives examples of the types of funds affected.

Short Positions

Most portfolios take long positions in securities. Long positions involve buying the security outright and then selling it later, with the hope that the security price rises over time. In contrast, short positions are taken to benefit from anticipated price declines. In this type of transaction, the investor borrows the security from another investor, sells it and receives cash, and then is obligated to buy it back at some point in the future. If the price falls after the short sale, the investor will have sold high and can now buy low to close the short position and lock in a profit. However, if the price of the security increases after the short sale, the investor will experience losses by buying it at a higher price than the sale price.

The strategy of selling securities short is prevalent in specialized portfolios, such as long-short, market-neutral, bear-market, and hedge funds. Most conventional portfolios do not typically short securities, although they may reserve the right to do so under special circumstances. Funds may also short derivatives, and this is sometimes more efficient than shorting individual securities.

Short positions produce negative exposure to the security that is being shorted. This means that when the security rises in value, the short position will fall in value and vice versa. Morningstar's portfolio statistics will capture this negative exposure. For example, if a fund has many short stock positions, the percent of assets in stocks in the asset allocation breakdown may be negative.

Funds must provide their broker with cash collateral for the short position, so funds that short often have a large cash position, sometimes even exceeding 100% cash.

Futures and Forwards

Futures

By entering into a futures contract, the buyer (long position) has an obligation to purchase a specific underlying asset at an agreed-upon price at a specific date in the future. The seller of the futures contract takes a short position in the asset and agrees to sell it according to those terms. Futures were originally introduced to help producers lock in prices for a commodity, and now they are also available on financial products like foreign exchange rates, bonds, equity indexes, and interest rates. They can be used for speculation or for hedging risk.

The price change on a futures position is similar to the price change on the underlying asset, with some differences due to various market effects. Futures positions are marked-to-market daily on the exchanges where they are traded. This means that the gains/losses are settled with all parties, and the market value of each contract is then reset to zero.

Because the futures position provides the investor with long or short exposure to a specific underlying asset, Morningstar will classify the position based on the characteristics of the underlying asset. For example, if a mutual fund has a long position in the 10-year U.S. Treasury Note futures contract, Morningstar will count that position as bond exposure for the fund's asset allocation breakdown and as US Treasury exposure for the fund's bond sector breakdown.

Futures contracts are reported to Morningstar with a market value that represents the economic exposure of the contract. This is based on the current market price of the contract, the contract size, and the number of contracts owned by the portfolio. This is accompanied by a cash offset position of the same size but with the opposite sign. (So, a long futures contract is accompanied by a short cash position and vice versa.) Long futures are modeled this way because investors can theoretically obtain the same exposure by borrowing money and purchasing the underlying asset. The cash offset also brings the market value back to zero for the position.

Futures contracts are popular, because they don't require as much money upfront as an outright purchase of the underlying asset. Futures contracts are also typically easier to transact than physical securities, because transactions are settled in cash. Futures contracts can also help managers hedge their position. For example, a manager could sell a futures contract on an asset they own if they expect prices to fall, thereby limiting losses while avoiding capital gains from selling the actual asset.

The following types of portfolios use futures contracts:

- ▶ Many bond funds use futures contracts on treasury securities or interest rates (e.g., Eurodollar, Libor). The futures can either be a substitute for owning bonds outright, or they can be used to fine-tune the fund's duration based on current forecasts. Funds buy these futures when interest rates are expected to fall (bond prices rise) and vice versa.
- ▶ Precious-metals or other commodity funds may use futures contracts to get exposure to a commodity, rather than buying the physical asset and storing it.
- ▶ International funds may buy or sell futures contracts on currencies to hedge the fund's currency exposure. Currency contracts may also be used for speculation.
- ▶ Index funds can purchase futures contracts on equity indexes to get exposure to a specific market. Some index funds do not buy any securities outright, getting all of their index exposure through futures, while others use futures to supplement their physical securities.
- ▶ Funds that need to keep cash on hand to meet redemptions might use short-term futures contracts to gain market exposure for those assets, rather than earning interest on cash.

Forwards

Forward contracts are very similar to futures contracts in that they also represent the obligation to buy or sell a specific asset on a specific future date. The key differences between forwards and futures are as follows:

- ▶ Forward contracts are not traded on an exchange and are instead privately negotiated between two parties. This means that the size of the contract can vary based on what the customer needs.
- ▶ Forward contracts are not marked-to-market on a daily basis. This means that the market value is not zero but instead represents the cumulative gains/losses since the start of the contract. All gains/losses are settled when the contract expires.

Forward contracts are reported to Morningstar with a market value that represents the economic exposure of the contract. Forwards also have offsetting cash positions. The difference between the economic exposure and the offsetting cash position is the accumulated gains/losses on the contract.

Forward contracts are popular, because they can be customized to the exact terms and conditions that the portfolio needs. Forward contracts are most often used for currency hedging in global portfolios. A portfolio can better manage its foreign currency risk with forward contracts whose expiration dates match when the fund needs protection, rather than by using futures with standard expiration dates.

Options

Options are contracts that allow the holder to profit if the price of the underlying asset moves in a certain direction. Call options give the holder (the long position) the right, but not the obligation, to buy an asset at a predetermined strike price and profit when the asset price is higher than the strike price. Put options give the holder the right to sell an asset at a specific strike price and profit when the market price of the asset is below the strike price. The parties that write options take a short position and have the obligation to sell or buy the asset from the long position if the option is exercised. Options can be used for speculation or for hedging.

Options are available on a wide range of assets, including stocks, stock or bond indexes, stock or bond ETFs, interest rates, currencies, volatility, futures (called futures options) and even swaps (called swaptions). Most options trade on exchanges. The market price of an option is based on the volatility of the asset, the current trading price of the asset, time to expiration, interest rates, and strike prices. Warrants are a type of call option that is issued by the company, usually as part of a bond offering.

Morningstar will classify options and warrants based on the exposures provided by the underlying asset. In theory, it is possible to create a portfolio of the underlying asset and cash that replicates the performance of the option. Valuing an option like a replicating portfolio better captures the size of the position's exposure than using the market price of the option. Morningstar has requested that funds report this amount—the delta-adjusted exposure—for the option or warrant plus the accompanying cash position as the replicating portfolio. These two positions net out to the market price of the option, but they count as different types of exposure in our portfolio statistics. Some funds are not accustomed to reporting delta-adjusted exposure and so statistics for these funds will reflect option market values.

Options are not used widely in mutual funds or other investment products.

- ▶ There are some closed-end funds that follow a covered call (also known as “buy write”) strategy where they buy the underlying stock and sell a call option on the same stock, thereby locking in some income but capping the upside potential.
- ▶ Some bear-market funds use options to get short exposure to an index, rather than shorting individual stocks.
- ▶ Other funds may use options opportunistically to hedge a sensitive position, e.g., buying a protective put on a stock whose price is expected to fall.
- ▶ Some funds purchase futures options or swaptions when futures and swaps are a regular part of their investment strategy. If option prices are attractive, this positions them well for the next time a futures contract or swap expires and needs to be renewed.
- ▶ Other funds may sell options (particularly out-of-the-money ones) to generate income.

Swaps

Swaps are risk-shifting, over-the-counter agreements that allow one party to trade one type of exposure for another. Each party agrees in advance to trade one set of payments (e.g., fixed or floating interest rates on a predetermined notional amount) for a different set of payments for a set amount of time. Mutual funds and other managed products negotiate the terms of the swap privately with investment banks or other investors.

Just like other derivatives, the performance of swaps can be replicated with a combination of assets. Common swap types include:

- ▶ Interest-rate swaps: One party (the receiver) receives a fixed rate and pays a floating rate (usually LIBOR) to the counterparty. The receiver side of this swap has exposure that is like a long investment-grade bond as well as short cash exposure, and the payer side has the opposite.
- ▶ Asset swaps: These are commonly used to reduce interest-rate exposure on a bond that the fund already owns. The fund pays the fixed-rate coupons from that bond and receives a floating-rate payment in return. The fund retains the credit risk of the bond. The party paying the fixed rate has short bond exposure and long cash exposure.
- ▶ Total-return swaps: These are commonly used to gain exposure to a bond that the fund does not own. The fund pays a floating rate and receives the income and capital gains from the bond in return. This provides the fund with long exposure to the reference bond and short exposure to cash.
- ▶ Credit-default swaps: In these agreements, one party pays fees that are like insurance premiums to the other party, in return for gaining protection against a default on bonds from a third company or entity. If the reference entity does default, the party selling protection will reimburse the party buying protection with the difference between the par value and the post-default market value of those bonds. These swaps provide the seller with long bond-like exposure and short cash exposure, while the party buying protection receives short bond-like exposure and long cash exposure. The exposure is “bond-like,” because it contains credit risk but it does not change the interest-rate risk of either party.
- ▶ Equity swaps: One party (the receiver) receives the total return on an equity index in return for paying a predetermined fixed or floating interest rate. The receiver side of this swap has long exposure to stocks (and all the stock attributes of that equity index) and short exposure to cash.
- ▶ Currency swaps: These contracts help parties manage or hedge their currency risk by swapping fixed or floating rates in one currency for fixed or floating rates in another currency. Both sides of this swap count as cash exposure.

Typically, the terms of the swap are chosen so that the market price of the swap is zero at initiation. Thereafter, the accounting market value is the accumulated gains or losses since the inception of the contract. However, swaps are reported to Morningstar at their bond-equivalent or stock-equivalent value, which is the sum of the notional principal for the contract plus the market value. Offsets (usually cash) are also included to represent the second part of the replicating portfolio. Bond-equivalent and stock-equivalent reporting allows Morningstar to properly measure the size of that position.

Swaps always contain two types of risk: the risks associated with the underlying asset and the risks associated with the counterparty to the contract. Because swaps are so carefully negotiated with strict legal terms and exchange of collateral where necessary, Morningstar will only measure the risk of the underlying asset and will not measure counterparty risk. Swaps will be selectively included in calculations where appropriate. For example, interest-rate swaps provide no country exposure, bond sector exposure, or credit risk, so these swaps will not be included in those calculations. Credit-default swaps provide no interest-rate exposure so those positions will not be included in duration, average maturity, or average price.

Swaps are used by many different types of funds. They are popular because they can be customized to the exact size and terms that the fund requires. Funds may take the long or short side of a swap contract.

- ▶ Bond funds use swaps to manage their duration and to increase/decrease their exposure to different sectors or parts of the yield curve.
- ▶ Equity funds use equity-index swaps as an alternative to buying stocks outright.
- ▶ Global funds use currency swaps to hedge their currency exposure.
- ▶ Some funds buy credit-default swaps to reduce the credit risk on a bond they own, while others sell CDS to earn income when the implied default risk for that entity seems too high (and therefore the CDS is selling for an attractive price).

Portfolio Statistics

Morningstar's goal is to measure the impact of each position on the portfolio and to provide a comprehensive view of the portfolio's exposures. This is an outline of how Morningstar's inventory of data points will be impacted when short positions and derivatives are included in our portfolio calculations in August 2007. Before this effort was undertaken, most derivatives were classified as "Other" and most statistics only reflected the long side of the portfolio. Note that many portfolios do not own any derivatives and do not take any short positions. For these funds, the portfolio statistics will not change much with these enhancements.

Asset Allocation: Long, Short, and Net

Morningstar will calculate both long and short breakdowns for asset allocation. The percent in each asset class is the total long or short market value in that asset class, divided by the total market value in the portfolio. For example, the portfolio below has \$700,000 in long stocks. This is 44.0% of the \$1,590,000 total market value of the portfolio.

- ▶ The long percentages will always be positive numbers and the short percentages will always be negative numbers. These won't necessarily add up to 100% independently.
- ▶ If there are no short positions or derivatives in the portfolio, the long asset allocation breakdown will add up to 100%. If there are short positions and these are fully collateralized, the long positions will typically add up to more than 100%.

Products and clients can derive a net asset allocation by adding together the long and short percentages for each asset class. For example, 44.0% long stock and -1.3% short stock produce a net 42.7% stock position. The net asset class percentages may be either positive or negative, but all of the net percentages will always add up to 100% for asset allocation.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	700,000	-20,000	44.0%	-1.3%	42.7%
% Bond	500,000	-40,000	31.4%	-2.5%	28.9%
% Preferred	0	0	0.0%	0.0%	0.0%
% Convertible	0	0	0.0%	0.0%	0.0%
% Cash	950,000	-500,000	59.7%	-31.4%	28.3%
% Other	0	0	0.0%	0.0%	0.0%
Total	2,150,000	-560,000	135.2%	-35.2%	100.0%

Total market value 1,590,000

Some Morningstar products combine % Preferred and % Convertible into the % Other group for display purposes.

Asset Allocation: Derivatives Impact

If a fund owns derivatives, those positions will be classified according to the exposures provided by the underlying asset.

- ▶ % Stock includes futures on individual stocks and stock indexes, options on stocks and stock indexes and stock ETFs, and equity index swaps.
- ▶ % Bond includes futures or options on bonds and long-term interest-rates, options on bond ETFs, and most swaps (interest-rate swaps, asset swaps, credit default swaps, etc.) and most swaptions.
- ▶ % Cash includes futures, forwards, or options on short-term interest rates and currencies. This also includes the cash offsets for most derivative contracts.
- ▶ % Other includes futures or options on things like commodities, weather, or volatility.

Asset Allocation: Display

Because products and clients have various space constraints in displaying this information, Morningstar recommends the following display options.

- ▶ One Set: Where space is limited to one set of data, the net asset allocation should be shown and properly labeled.
- ▶ Two Sets: Where space permits, show the long and short asset allocations side by side.
- ▶ Three Sets: Where space permits, show the long, short, and net breakdowns together.

Because a pie chart graphic does not work with percentages greater than 100 and negative numbers, Morningstar now presents asset allocation data in a table format with a bar chart.

Portfolio Breakdowns: Long and Short

Morningstar will calculate other breakdowns in a similar manner as asset allocation, with both long and short breakdowns provided. The percent in each segment is the long or short market value in that segment, divided by the total market value of the portfolio. Each portfolio will have the following long and short breakdowns available if the portfolio has sufficient assets (stock or bond) in each area to perform the calculation.

- ▶ Market capital breakdown (% giant, % large, % mid, % small, % micro)
- ▶ Style Box breakdown (% large value, % large blend, % large growth, etc.)
- ▶ Stock sector breakdown (% software, % hardware, % media, etc.)
- ▶ Stock type breakdown (% cyclical, % distressed, % high yield, etc.)
- ▶ Regional exposure (% Euro zone, % Latin America, % Asia developed, etc.)
- ▶ Country exposure
- ▶ Bond sector breakdown (% asset-backed, % corporate, % mortgage pass-thru, etc.)
- ▶ Muni state exposure (% CA, % NY, % MA, etc.)
- ▶ Muni sector breakdown (% general obligation, % utilities, % health, etc.)
- ▶ Maturity range (%1-3 year, % 3-5 year, % 5-7 year, etc.)
- ▶ Coupon range (coupon 0-1%, 1-2%, 2-3%, etc.)

All percentages are based on the total market value in the portfolio, even if the specific statistic is based on a subset of the portfolio. For example, market cap breakdown describes the equity portion of the portfolio. But, the percentages will be based on total market value, not total equity market value. (Before these changes were implemented, Morningstar's statistics were based on the subset of the portfolio with that characteristic.)

As with asset allocation, the long and short percentages won't necessarily add up to 100 separately. Also, the net statistics won't necessarily add up to 100. The net statistics will add up to the amount of the portfolio used in that calculation. In the example on the next page, the fund has 60% stock (and all stocks have market cap assignments), so the long market cap breakdown percentages (90%) and the short percentages (-30%) add up to 60%. If not all stocks had market cap assignments, the total would sum to a number above or below 60% (depending on whether the stocks missing market cap assignments were long or short).

Morningstar will calculate the long and short breakdowns this way in our central database:

Market Cap Breakdown	Long \$	Short \$	Long %	Short %
% Giant	500,000		50.0%	0.0%
% Large	250,000		25.0%	0.0%
% Mid	50,000	(200,000)	5.0%	-20.0%
% Small	50,000	(100,000)	5.0%	-10.0%
% Micro	50,000		5.0%	0.0%
Total	900,000	(300,000)	90.0%	-30.0%
Non-stock assets	400,000			
Total market value	1,000,000			

Portfolio Breakdowns: Derivatives Impact

If a fund owns derivatives, those positions will be classified according to the exposures provided by the underlying asset. For example,

- ▶ If a fund owns a stock option, that position will count as exposure to that stock's sector for the sector breakdown calculation (and so forth for other calculations).
- ▶ If a fund owns an S&P 500 futures contract, Morningstar will apply a proportional share of the market cap breakdown for the S&P 500 index to the market cap breakdown for the fund (and so forth for other calculations). This approach is similar to how Morningstar calculates portfolio statistics for fund of funds, by drilling down to the statistics of underlying funds.
- ▶ Some bond-like swaps do not provide exposure to every bond-related statistic (e.g., credit default swaps don't provide interest-rate exposure), so those positions will not be included in every calculation.

For some contracts, Morningstar may not have enough detailed information on the underlying asset and therefore may not be able to include that position in the fund's statistics.

- ▶ Morningstar does not collect the maturity dates for bonds associated with futures, options, asset swaps, or total return swaps (we collect the contract maturity dates instead), and therefore those types of positions will not be included in the fund's maturity breakdown.
- ▶ If Morningstar does not have licensing rights to the constituent data for an index, derivatives based on that index won't be included when we calculate more detailed breakdowns for the fund. (Morningstar is currently evaluating our licensing agreements as part of this project to ensure adequate coverage).

Portfolio Breakdowns: Display

For display purposes, products or clients may wish to rescale the percentages to add up to 100%. These types of breakdowns are sometimes shown in fund literature as a percent of long equity assets only and as a percent of short equity assets only. Rescaling also makes it easier to compare a fund to an index. By dividing the long percentages on the previous page by 90% and by dividing the short percentages by -30%, you can derive the long-only and short-only breakdowns for our previous example. (Because the rescaled short numbers represent the percent of short assets only, these percents should be expressed as positive numbers.)

Market Cap Breakdown	Long % (% total MV) (provided)	Short % (% total MV) (provided)	Rescaled Long % (% long equity only) (derived)	Rescaled Short % (% short equity only) (derived)
% Giant	50.0%	0.0%	55.6%	0.0%
% Large	25.0%	0.0%	27.8%	0.0%
% Mid	5.0%	-20.0%	5.6%	66.7%
% Small	5.0%	-10.0%	5.6%	33.3%
% Micro	5.0%	0.0%	5.6%	0.0%
Total	90.0%	-30.0%	100.0%	100.0%

Because products and clients have various space constraints in displaying this information, Morningstar recommends the following display options.

- ▶ One Set: Where space is limited to one set of data, the rescaled long percentages should be shown and properly labeled.
- ▶ Two Sets: Where space permits, show the rescaled long and rescaled short breakdowns side by side.

Portfolio Statistics: Long and Short

Morningstar will calculate the following statistics for the long and short sides of the portfolio, as long as there are sufficient assets to support the calculations. These statistics cannot be displayed as net. (For example, a long P/E Ratio of 40 and a short P/E Ratio of 20 cannot be combined to get a net P/E Ratio.) And, because these are not breakdowns, there is no need to rescale percentages to add up to 100%.

- ▶ Equity Style Box, value-growth style score (x coordinate), size score (y coordinate)
- ▶ The five equity style factors for value (often displayed as price ratios, the reciprocal of yield): prospective earnings yield, prospective book value yield, prospective revenue yield, prospective cash flow yield, prospective dividend yield
- ▶ The five equity style factors for growth: forecasted five-year earnings growth, forecasted earnings growth, forecasted book value growth, forecasted revenue growth, forecasted cash flow growth
- ▶ Trailing 12-month price ratios: P/E TTM (earnings yield), P/B TTM (book value yield), P/S TTM (revenue yield), and P/C TTM (cash flow yield)
- ▶ Equity statistics: market capital, DTC, ROA, ROE, net margin, past 3-year earnings growth
- ▶ Bond statistics: average coupon, average price, average weighted maturity
- ▶ Other statistics: % emerging market, % illiquid, % exotic, % inverse floating rate note

Portfolio Statistics: Derivatives Impact

If a fund owns derivatives, those positions will typically be classified according to the exposures provided by the underlying asset and included in the fund-level portfolio statistics. The exceptions are:

- ▶ Most derivatives will not be included in dividend yield, because the holders of these contracts do not receive stock dividends. The exception to that would be an equity swap where the parties agree to pay dividends, too.
- ▶ Derivatives will not be included in the five equity style factors for growth, because those calculations are share-weighted averages based on the number of stock shares held, which is different than the number of contracts held.
- ▶ If the portfolio reports the coupon on the deliverable bonds for a bond futures contract or the coupon on the underlying bonds for an interest-rate option, those positions will be included in the calculation of the fund's average coupon. The derivative contracts do not receive the coupon, but they will behave like bonds at that coupon level. If the portfolio fails to report the coupon on those bonds, the position will not be included in the calculation of the fund's average coupon.

- ▶ Bond futures and options will not be included in the average price statistic, because this calculation requires a par value for the bonds, which Morningstar does not collect (we collect the number of contracts instead). However, Morningstar can include certain swaps in that calculation by comparing the notional value and the bond-equivalent value.

Portfolio Statistics: Display

Because products and clients have various space constraints in displaying this information, Morningstar recommends the following display options.

- ▶ One Set: Where space is limited to one set of data, the long statistics should be shown and properly labeled.
- ▶ Two Sets: Where space permits, show the long and short statistics side by side.

For example, the long and short statistics for a specific portfolio might look like this:

Portfolio Statistics	Long	Short
Equity Style Box	Mid-Cap Growth	Large Growth
Forecasted Five-Year Earnings Growth	12.0%	9.8%
Forecasted Book Value Growth	5.8%	3.3%
P/E TTM	21.2	24.9
P/B TTM	3.0	3.7

Fixed-Income Survey

Morningstar surveys investment managers for the following statistics, so there may be variation in how these are calculated. These should reflect the net exposure of the portfolio, and the impact of all derivatives should be included in these calculations.

- ▶ Effective duration, effective maturity, credit quality breakdown, % AMT exposure.

Morningstar derives the fixed-income style box and average credit quality from this information.

Portfolio Holdings Detail

Morningstar shows the weight (% net assets) for each individual position in a portfolio. Morningstar uses total market value as a proxy for total net assets, so this is calculated as the market value of the position divided by the total market value of the portfolio.

Long positions will have positive percent weights and short positions will have negative percent weights. All weights in the portfolio will add up to 100%. (Before these enhancements, Morningstar calculated each long position's weight as a percent of all long assets and each short position's weight as a percent of all short assets.)

To narrow the holdings list to show top 10 or top 25 holdings, sort the portfolio by the absolute value of "% net assets" to determine the largest positions, whether they are long or short. For display purposes, show the correct +/- sign. To determine the "% Assets in Top 10," add the absolute value of % net assets for the top 10 holdings. This expresses the size of the biggest bets, whether they are long or short.

For example, a display of "Top 10 Holdings" would be shown as follows. The "% Assets in Top 10" would be the sum of the absolute value of the % Net Assets, or 32.6% in this case.

	Stock	Market Value	% Net Assets
1.	ExxonMobil	-10,784,635	-4.7%
2.	ING Groep	10,449,186	4.6%
3.	Cisco Systems	8,788,100	3.8%
4.	Novartis AG	7,670,376	3.3%
5.	Deutsche Bank AG	7,632,000	3.3%
6.	Tokyo Electron Ltd	-6,401,538	-2.8%
7.	Norfolk Southern	-5,955,800	-2.6%
8.	Tesco	5,942,670	2.6%
9.	Altria Group	5,624,681	2.5%
10.	GlaxoSmithKline PLC	-5,593,046	-2.4%

Specific Examples

Here are some examples of how the statistics will look for various types of portfolios.

Long-Short Fund

This portfolio has a net long stock position. It owns a small amount of stand-alone cash (2.4 million) and has a larger amount of cash collateral to back the short positions (84.1 million). This fund does not own any bonds, preferreds, convertibles, or unrecognized securities.

The long and short asset allocation percentages will be provided, and products or clients can derive the net asset allocation.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	225,784,891	-82,738,883	98.3%	-36.0	62.3
% Cash	86,531,783		37.7%	0.0%	37.7%
% Other	0	0	0.0%	0.0%	0.0%
Total	312,316,674	-82,738,883	136.0%	-36.0%	100.0%
Total market value	229,577,791				

Long and short percentages will be provided for other portfolio breakdowns like market cap breakdown, and these can be rescaled so that long or short percentages add to 100%.

Market Cap Breakdown	Long \$	Short \$	Long % (provided)	Short % (provided)	Rescaled Long % (derived)	Rescaled Short % (derived)
% Giant	5,213,831	-4,648,573	2.3%	-2.0%	2.3%	5.6%
% Large	34,503,927	-37,673,764	15.0%	-16.4%	15.3%	45.5%
% Mid	87,476,154	-28,827,728	38.1%	-12.6%	38.7%	34.8%
% Small	56,751,524	-10,989,267	24.7%	-4.8%	25.1%	13.3%
% Micro	41,839,455	-599,551	18.2%	-0.3%	18.5%	0.7%
Total	225,784,891	-82,738,883	98.3%	-36.0%	100.0%	100.0%
Non-stock assets	86,531,783					
Total market value	229,577,791					

Market-Neutral Fund

This is a market-neutral fund, and it divides its exposure equally between long positions in strong stocks and short positions in weaker stocks. If the broad market is fairly flat, it aims to profit from both the long and short holdings. If the broad market rises, the gains from the long positions should theoretically offset the losses from the short positions; the opposite effects occur when the broad market falls. This portfolio has a moderate amount of stand-alone cash (22.7 million) and a larger amount of cash collateral to back the short positions (49.8 million).

The long and short asset allocation percentages will be provided, and products or clients can derive the net asset allocation. Studying the long, short, and net allocations side by side can help investors better understand this fund's strategy. The stock exposure looks minimal when viewing the net allocation only.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	53,635,326	-51,028,728	71.4%	-67.9%	3.5%
% Cash	72,496,561	0	96.5%	0.0%	96.5%
% Other	0	0	0.0%	0.0%	0.0%
Total	126,131,887	-51,028,728	167.9%	-67.9%	100.0%
Total market value	75,103,159				

Long and short percentages will be provided for other portfolio breakdowns like market cap breakdown, and these can be rescaled so that long or short percentages add to 100%.

Market Cap Breakdown	Long \$	Short \$	Long % (provided)	Short % (provided)	Rescaled Long % (derived)	Rescaled Short % (derived)
% Giant	4,638,205	-4,745,671	6.2%	-6.3%	8.6%	9.3%
% Large	17,073,647	-15,767,876	22.7%	-21.0%	31.8%	30.9%
% Mid	14,786,588	-14,492,158	19.7%	-19.3%	27.6%	28.4%
% Small	16,322,114	-15,155,532	21.7%	-20.2%	30.4%	29.7%
% Micro	814,763	-867,488	1.1%	-1.2%	1.5%	1.7%
Total	53,635,320	-51,028,728	71.4%	-67.9%	100.0%	100.0%
Non-stock assets	72,496,561					
Total market value	75,103,153					

Bear Market Fund

This portfolio has a net short stock position, primarily obtained from short positions in equity index futures contracts and some put options. It also has a large amount of cash collateral to back the short positions. This fund does not own any bonds, preferreds, or convertibles.

The long and short asset allocation percentages will be provided, and products or clients can derive the net asset allocation.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	1,450	-20,010,245	0.0%	-47.0%	-47.0%
% Cash	62,579,000	0	147.0%	0.0%	147.0%
% Other	0	0	0.0%	0.0%	-0.0%
Total	62,580,450	-20,010,245	147.0%	-47.0%	100.0%
Total market value	42,570,205				

Long and short percentages will be provided for other portfolio breakdowns like market cap breakdown, and these can be rescaled so that long or short percentages add to 100%. In this case, there are no long stock positions, so there is no data for long market cap breakdown.

Market Cap Breakdown	Long \$	Short \$	Long % (provided)	Short % (provided)	Rescaled Long % (derived)	Rescaled Short % (derived)
% Giant	0	-9,843,228	0.0%	-23.1%	0.0%	49.2%
% Large	1,450	-7,154,054	0.003%	-16.8%	100.0%	35.8%
% Mid	0	-2,848,756	0.0%	-6.7%	0.0%	14.2%
% Small	0	-164,207	0.0%	-0.4%	0.0%	0.8%
% Micro	0	0	0.0%	0.0%	0.0%	0.0%
Total	0	-20,010,245	0.003%	-47.0%	0.0%	100.0%
Non-stock assets	62,579,000					
Total market value	42,570,205					

Global Fund Hedging Currency Exposure

This global stock fund hedges most of its currency exposure. It enters into numerous short currency forward contracts. If a foreign currency weakens relative to the currency of the portfolio, the stock held in that foreign currency will be worth less when converted back into the currency of the portfolio. The short currency forward contracts profit when the foreign currency weakens, thereby offsetting the losses from the long stock position. This fund has a large cash position to offset those short forward contracts.

The long and short asset allocation percentages will be provided, and products or clients can derive the net asset allocation. Cash instruments and currency forwards are both included in the cash asset class below.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	6,450,137,723	0	86.3%	0.0%	86.3%
% Cash	1,191,239,140	-165,017,845	15.9%	-2.2%	13.7%
% Other	0	0	0.0%	0.0%	0.0%
Total	7,641,376,863	-165,017,845	102.2%	-2.2%	100.0%
Total market value	7,476,359,018				

Long and short percentages will be provided for other portfolio breakdowns like market cap breakdown, and these can be rescaled so that long or short percentages add to 100%. In this case, there are no short stock positions, so there is no data for short market cap breakdown.

Market Cap Breakdown	Long \$	Short \$	Long % (provided)	Short % (provided)	Rescaled Long % (derived)	Rescaled Short % (derived)
% Giant	2,129,833,541	0	28.5%	0.0%	33.0%	0.0%
% Large	1,716,841,542	0	23.0%	0.0%	26.6%	0.0%
% Mid	1,515,576,605	0	20.3%	0.0%	23.5%	0.0%
% Small	956,741,833	0	12.8%	0.0%	14.8%	0.0%
% Micro	131,143,555	0	1.8%	0.0%	2.0%	0.0%
Total	6,450,137,077	0	86.3%	0.0%	100.0%	0.0%
Non-stock assets	1,026,221,295					
Total market value	7,476,358,372					

Synthetic Index Fund

This portfolio obtains much of its stock exposure from futures contracts on equity indexes. It also gets stock exposure through swaps and options. Because the fund only needs to put down a small amount of cash margin on the futures contracts and swaps, the other cash can be invested in high-quality, liquid, short-term bonds to add incremental yield to the stock index returns. The futures contracts and swaps are accompanied offsetting cash positions. Negative cash in this case does not indicate an unsecured liability or leverage, because the high-quality, short-term bonds are suitable to cover the liabilities of the futures contracts or swaps (i.e., the combined net bond and cash position is positive).

The long and short asset allocation percentages will be provided, and products or clients can derive the net asset allocation.

Asset Allocation	Long \$	Short \$	Long % (provided)	Short % (provided)	Net % (derived)
% Stock	949,408	0	93.7%	0.0%	93.7%
% Bond	498,387	-64,527	49.2%	-6.4%	42.8%
% Cash	819,887	-1,190,389	81.0%	-117.5%	-36.6%
% Other	0	0	0.0%	0.0%	0.0%
Total	2,267,682	-1,254,916	223.9%	-123.9%	100.0%
Total market value	1,012,766				

Long and short percentages will be provided for other portfolio breakdowns like market cap breakdown, and these can be rescaled so that long or short percentages add to 100%.

Market Cap Breakdown	Long \$	Short \$	Long % (provided)	Short % (provided)	Rescaled Long % (derived)	Rescaled Short % (derived)
% Giant	494,596	0	48.8%	0.0%	52.1%	0.0%
% Large	360,257	0	35.6%	0.0%	37.9%	0.0%
% Mid	92,895	0	9.2%	0.0%	9.8%	0.0%
% Small	1,660	0	0.2%	0.0%	0.2%	0.0%
% Micro	0	0	0%	0.0%	0.0%	0.0%
Total	949,408	0	93.7%	0.0%	100.0%	0.0%
Non-stock assets	63,358					
Total market value	1,012,766					

Conclusion

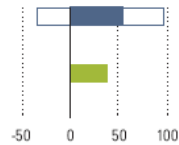
By capturing the effects of shorts and derivatives, Morningstar is able to better illustrate a fund's investment strategy. The short positions and derivatives provide certain exposures to the fund's investors and can increase or decrease the level of risk in the fund.

Appendix A: Asset Allocation Graphical Presentation

Morningstar has modified the presentation of long, short, and net composition information in portfolio and security reports. For all asset allocation data, we now present long/short/net values in table format, and use a bar chart instead of a pie chart.

The clear representation of enhanced short position and derivative statistics provides a more robust view into the strategy and the positions in the portfolio. With this better view, investors will have a more comprehensive picture of the portfolio's exposure to risk. In addition, these statistics make Morningstar data more consistent with what fund companies report on their websites and in their annual reports.

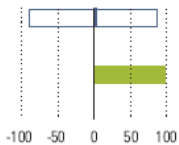
Composition



	Long %	Short%	Net %
Stocks	96	-35	61
Bonds	0	0	0
Cash	39	0	39
Other	0	0	0
Total	135	-35	100

This is the asset allocation for a long-short fund with a net long exposure to stocks. Cash is relatively high because it contains the proceeds from the short sale and the collateral for the broker for these short positions.

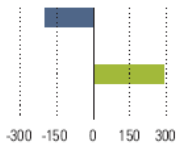
Composition



	Long %	Short%	Net %
Stocks	92	-91	1
Bonds	0	0	0
Cash	99	0	99
Other	0	0	0
Total	191	-91	100

A typical market-neutral fund balances its allocations to long and short stocks. The remaining assets are in cash.

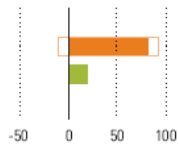
Composition



	Long %	Short%	Net %
Stocks	0	-195	-195
Bonds	0	0	0
Cash	295	0	295
Other	0	0	0
Total	295	-195	100

This bear-market fund offers double the inverse exposure to a stock index. This means that it aims to offer twice the return of the index in the opposite direction. So, if the index falls by 5% one day, this fund aims to earn +10%.

Composition



	Long %	Short%	Net %
Stocks	0	0	0
Bonds	92	-10	82
Cash	18	0	18
Other	0	0	0
Total	110	-10	100

This fund invests in bonds and buys credit default swaps for some bond issuers to protect against default. These derivatives are modeled as short bond exposure and long cash exposure.