Shorts and Derivatives in Portfolio Statistics

Morningstar Methodology Paper
October 31, 2006

Contents

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 is currently undertaking a multi-phase initiative to incorporate the impact of short positions and derivatives into a portfolio's descriptive statistics. These enhanced statistics will 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 addresses shorts, futures, and forwards. The document entitled *Morningstar's Standardized Global Portfolio Template* describes how these positions should be reported in the portfolio files that custodians and investment managers send to Morningstar. In early 2007, Morningstar's statistics will be modified to reflect the economic impact of those positions. This document describes how the portfolio statistics will change and gives examples of the types of funds most likely to be affected.

During the second phase of this initiative, Morningstar will outline the reporting and calculation standards for swaps and options. Portfolio statistics will be modified later in 2007 to capture the economic exposure provided by these swaps and options.

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.

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.

Investors 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 contracts and forward contracts are types of derivatives. Derivatives are based on (derived from) specific underlying assets, e.g. a bond or an equity index, and the performance of the contract depends on the performance of that specific asset.

Futures
By entering into a futures contract, the buyer (long position) has an obligation to purchase the 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.

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 shorts, futures, and forwards are included in our portfolio calculations in early 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 42.8% 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%	42.8%
% 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.

If a fund owns derivatives, those positions will be classified according to the exposures provided by the underlying asset. Morningstar will first classify futures and forwards and will address swaps and options during the second phase of this project. For example, if a fund purchases (sells) a futures contract on the S&P 500 index, Morningstar will count that as long (short) equity exposure for the asset allocation breakdown.

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 is currently reviewing alternative charts and graphs.

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 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 eligible for that calculation. In the example below, 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%.

Morningstar will calculate the long and short breakdowns 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			

If a fund owns derivatives, those positions will be classified according to the exposures provided by the underlying asset (futures and forwards during the first phase of this project and swaps and options later). For example, 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. This approach is similar to how Morningstar calculates portfolio statistics for fund of funds, by drilling down to the statistics of the underlying fund.

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. For example, Morningstar does not collect the maturity dates of the bonds that are deliverable for bond futures contracts (we collect the contract maturity dates instead), and therefore those types of futures positions will not be included in the fund's maturity breakdown.

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 often shown in fund literature as a percent of long equity assets only and as a percent of short equity assets only. For example, 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

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:

- Derivatives will not be included in dividend yield, because the holders of these contracts do not receive stock dividends.
- 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, the position will be included in the calculation of the fund's average coupon. The long futures contract does not receive the coupon, but the futures price 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.
- Derivatives will not be included in the average price statistic, because this calculation requires a par value for the deliverable bonds, which Morningstar does not collect (we collect the number of contracts instead).

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.

- 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, or convertibles. The small "Other" positions are predominately composed of options. (In the second phase of this project, Morningstar will capture the economic exposure of those options instead of classifying them as "other.")

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	225,690,391	-82,130,281	98.3%	-35.8%	62.5%
% Cash	86,531,783		37.7%	0.0%	37.7%
% Other	94,500	-608,602	0.0%	-0.3%	-0.2%
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%	5.7%
% Large	34,403,927	-37,673,159	15.0%	-16.4%	15.2%	45.9%
% Mid	87,482,154	-28,827,728	38.1%	-12.6%	38.8%	35.1%
% Small	56,751,022	-10,381,267	24.7%	-4.5%	25.2%	12.6%
% Micro	41,839,455	-599,551	18.2%	-0.3%	18.5%	0.7%
Total	225,690,391	-82,130,281	98.3%	-35.8%	100.0%	100.0%
Non-stock assets	86,017,681					
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. It also has a large amount of cash collateral to back the short positions. This fund does not own any bonds, preferreds, or convertibles, but it does own some options and swaps, which are now classified as "other." In the second phase of this project, Morningstar will capture the economic exposure of those options and swaps and this will increase the net short stock position.

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	0	-18,875,875	0.0%	-44.3%	-44.3%
% Cash	62,579,000	0	147.0%	0.0%	147.0%
% Other	1,450	-1,134,370	0.0%	-2.7%	-2.7%
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%	52.1%
% Large	0	-7,169,682	0.0%	-16.8%	0.0%	38.0%
% Mid	0	-1,848,756	0.0%	-4.3%	0.0%	9.8%
% Small	0	-14,207	0.0%	0.0%	0.0%	0.1%
% Micro	0	0	0.0%	0.0%	0.0%	0.0%
Total	0	-18,875,875	0.0%	-44.3%	0.0%	100.0%
Non-stock assets	61,446,080					
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. Because the fund only needs to put down a small amount of cash margin on the futures contracts, 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 are accompanied by an equal and offsetting cash position. 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 (i.e. the combined net bond and cash position is positive). This fund also gets stock exposure through swaps and options, so the allocation to stock will be higher when Morningstar starts to account for those derivatives in the second phase of this project.

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	948,462	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	8,061	-7,115	0.8%	-0.7%	0.1%
Total	2,274,797	-1,262,031	224.6%	-124.6%	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	52.2%	0.0%	33.0%	0.0%
% Large	360,257	0	38.0%	0.0%	26.6%	0.0%
% Mid	92,895	0	9.8%	0.0%	23.5%	0.0%
% Small	714	0	0.1%	0.0%	14.8%	0.0%
% Micro	0	0	0%	0.0%	2.0%	0.0%
Total	948,462	0	100.0%	0.0%	100.0%	0.0%
Non-stock assets	64,304					
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. The new statistics will reflect these exposures and risks.

Shorts, futures, and forwards will be addressed according to the specifications in this document, and Morningstar will outline the standards for swaps and options later in 2007.