# FUND CLASSIFICATION ROADMAP

A COMPARATIVE GUIDE TO LIPPER'S AND MORNINGSTAR'S U.S. FUND CLASSIFICATION SYSTEMS

### INTRODUCTION: THIS DOCUMENT EXAMINES THE SPECIFIC DIFFERENCES BETWEEN THE LIPPER FUND CLASSIFICATION MODEL AND THE MORNINGSTAR CATEGORIES.

All mutual funds are assigned to a particular Lipper classification/objective and a Morningstar category. While there is much overlap between the two models, there are also some fundamental differences that could result in a fund being classified differently by the two investment company tracking firms.

Morningstar categories are holdings-based, while Lipper's classifications use a combination of holdings-based and prospectus language-based models. Both Lipper and Morningstar define a fund's stated prospectus investment strategy as its "objective." However, Lipper's holdings-based groupings are called classifications, while Morningstar's are called categories. In practice, Lipper uses a combination of objectives and classifications in its products.

In aggregate, all open-end funds fall into one of the 151 Lipper classifications and objectives (Lipper uses a few additional investment objectives for closed-end funds and funds underlying variable insurance products [VIPs]). In contrast, the same universe of mutual funds is categorized by 71 unique Morningstar categories.

All of the information in this document has been derived from publicly available information located at:

Lipper: http://www.lipperweb.com/services/lipperclassifications.asp Morningstar: http://www.morningstar.com

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# EXECUTIVE SUMMARY:

#### **U.S. DIVERSIFIED EQUITY FUNDS**

- Lipper's classification model includes a multi-cap market capitalization for funds that do not meet the qualifications of either large-, mid-, or small-cap. Morningstar does not have a similar market capitalization.
- Lipper has distinct investment classifications for Equity Income funds and S&P 500 Index funds.

#### GENERAL DOMESTIC EQUITY FUNDS

- Lipper's model includes an equity market-neutral classification for funds that seek to generate consistent returns in both up and down markets by selecting positions with a net market exposure of zero.
- Lipper also includes a diversified leveraged classification to classify funds that seek to generate returns of more than 100% of the returns of a stated benchmark using any combination of futures contracts, other derivatives, and leverage.

#### SECTOR EQUITY FUNDS

- Lipper has 20 distinct objectives for sector equity funds while Morningstar has only nine.
- Lipper has separate investment objectives for sector equity funds that invest solely in domestic securities and those that invest in both domestic and international securities.
- Lipper has a separate investment objective for commodities funds.

#### **MIXED-EQUITY FUNDS**

- Target date funds are grouped into five-year time periods under both the Lipper and Morningstar classification models.
- Lipper's mixed-equity target allocation conservative and moderate classifications are more conservative than Morningstar's with respect to the proportion of assets invested in equity relative to fixed income. Lipper also has a growth allocation classification while Morningstar has a world allocation category.

#### WORLD EQUITY FUNDS

- Lipper's classification model includes a multi-cap market capitalization in addition to large-, mid-, and small-cap.
- Lipper's classification model includes a core style for international small/mid-cap funds in addition to growth and value.
- Lipper has seven unique global equity classifications that are assigned based on the market capitalization and investment styles of the underlying securities in the portfolio, while Morningstar includes all of these funds in a single category called world stock.

#### TAXABLE FIXED INCOME FUNDS

- In addition to short and intermediate fixed income time periods, Lipper's model has a short-intermediate period for funds that hold securities between the two periods.
- Morningstar and Lipper use different maturity/duration periods when classifying fixed income securities.
- Morningstar's U.S. government fund categories are further divided by Lipper into the U.S. government, U.S. Treasury, and mortgage-backed investment objectives, depending on the specific types of government securities in which the fund invests.

#### MUNICIPAL DEBT FUNDS

- Similar to taxable fixed income, Lipper includes a shortintermediate municipal debt grouping in addition to short and intermediate maturity/duration periods.
- Single-state municipal debt funds that are not represented by a separate category are classified by their durations/ maturities by Morningstar. Lipper, however, tends to classify these funds by the specific states in which the funds invest.

#### MONEY MARKET FUNDS

- Morningstar does not report on money market funds in its publications or websites.
- Lipper has 17 unique investment objectives for money market funds. There are separate objectives for retail money market funds and institutional funds. There are nine objectives for single-state municipal money market funds. Morningstar has only two money market categories.





# INVESTMENT OBJECTIVE MAPS:

The diagrams on the following pages are designed to graphically represent the Lipper and Morningstar classifications/categories. Individual Lipper classifications/objectives are underlined and listed beneath green borders. Morningstar categories are represented by gray boxes. By locating the appropriate Lipper classification or Morningstar category into which a particular fund falls, the user can easily determine the counterpart where the fund is likely to be classified under each classification model.

### FIGURE 1 UNITED STATES DIVERSIFIED EQUITY (USDE) FUNDS



### FIGURE 2 GENERAL DOMESTIC EQUITY FUNDS









### FIGURE 4 MIXED-EQUITY FUNDS





### FIGURE 5 WORLD EQUITY FUNDS



KEY:

Morningstar Category

LIPPER CLASSIFICATION/OBJECTIVE













Morningstar Category

LIPPER CLASSIFICATION/OBJECTIVE





### FIGURE 8 MONEY MARKET FUNDS

Taxable Money Market

| Money Market                     |
|----------------------------------|
| U.S. Government MM               |
| U.S. Treasury MM                 |
| Institutional Money Market       |
| Institutional U.S. Government MM |
| Institutional U.S. Treasury MM   |

| Tax-Free | Monev  | Market | _ |
|----------|--------|--------|---|
| IUX IICC | rioncy | market |   |

Tax-Exempt Money Market Institutional Tax-Exempt MM California Tax-Exempt MM Connecticut Tax-Exempt MM Massachusetts Tax-Exempt MM Michigan Tax-Exempt MM New Jersey Tax-Exempt MM New York Tax-Exempt MM Ohio Tax-Exempt MM Pennsylvania Tax-Exempt MM Other States Tax-Exempt MM

**KEY**:

Morningstar Category

 $Lipper\ Classification/Objective$ 





### APPENDIX I: UNITED STATES DIVERSIFIED EQUITY FUNDS

#### **GENERAL NOTES**

There are 14 Lipper United States Diversified Equity (USDE) fund classifications to nine Morningstar categories. Some of the differences arise from Lipper's inclusion of three multi-cap classifications. This market capitalization is assigned to funds that do not meet the qualifications for classification in one of the other market capitalizations. Lipper also has several specialty USDE classifications for funds that meet certain specific investment criteria. There are no Morningstar counterparts for these Lipper groupings.

#### LIPPER

Under the Lipper USDE classification model methodology, valuation/ investment style is measured using the S&P 1500 SuperComposite as a proxy for the United States equity market. Each individual stock is compared in relation to the S&P 1500's portfolio characteristics with respect to capitalization and valuation. Capitalization breakpoints are determined by first compiling a list of all common stocks traded on the NYSE, AMEX, and NASDAQ (excluding non-U.S.-domiciled stocks and ADRs). The securities are then sorted in descending order by market capitalization. The average market capitalization of the 316th and 317th largest stocks, rounded to the nearest \$100 million, is set as the large-cap floor. The small-cap ceiling is reviewed periodically by Lipper and is currently fixed at a market capitalization of \$3.8 billion.

With respect to investment style/valuation, Lipper uses price/ earnings, price/book, and three-year sales-per-share growth in determining a specific security's valuation. All three measures are given equal weights in the Lipper model. If a fund's valuation falls into the border regions (the fund has a z-score between either +0.10 and +0.30 or -0.10 and -0.30), Lipper will examine price/sales and price/operating cash flow to make a final determination. Both Lipper capitalizations and investment styles are determined by a three-year weighted average using three unique investment portfolios (60% current portfolio, 30% last fiscal-year portfolio, 10% last fiscal-year portfolio minus one year.)

Lipper's model includes multi-cap classifications for funds that do not concentrate 75% or more of their assets within a particular market capitalization; Morningstar does not have multi-cap market

FIGURE 1 MARKET CAPITALIZATION







Figure 1 displays the percentage of total market capitalization that is represented by each segment of the market. For example, large-cap stocks (as defined by Lipper) represent 81% of the total domestic equity market while small-cap stocks represent only 9% of total market capitalization. The multicap dashed line representation for the Lipper capitalization pie illustrates that funds with a multi-cap capitalization typically have a weighted-average market capitalization equivalent to smaller large-cap or mid-cap stocks; however, 75% of the assets are not concentrated in any particular capitalization.

Figure 2 displays the total number of securities that are represented by each market capitalization. For example, large-cap stocks (as defined by Lipper) represent 7% of the total number of stocks in the domestic market. In other words, were an investor to choose a stock at random, there is a 7% chance that it would be a large-cap stock.

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### APPENDIX I: (CONTINUED)

capitalization categories. Most of Lipper's multi-cap funds are classified as large-cap funds under the Morningstar methodology, although a handful fall into the mid-cap categories.

Lipper places all pure index S&P 500 funds with a low advisory fee (less that 50 basis points) into a unique investment objective -S&P 500 Index funds (SPSP). Funds that track the S&P 500 Index but do not meet the advisory fee criteria are placed into the large-cap core classification.

#### MORNINGSTAR

Morningstar's capitalization model is based on the "70%-20%-10% rule" when determining market capitalizations of each stock. Seventy percent of the total market capitalization is considered large-cap, the next 20% is considered mid-cap, and the remaining 10% is small-cap. This results in a larger number of stocks (and therefore funds) being classified as large-cap (relative to Lipper). Both the large-cap floor and the small-cap ceiling are lower in the Morningstar model than they are in the Lipper model. This means that there are more equity securities considered to be large-cap under the Morningstar model and more securities considered to be small-cap under the Lipper model. Please see Figures 1 and 2 for a graphical representation of this.

Morningstar investment styles/valuations are determined by:

- Price ratios
- Dividend yields

**IPPER** 

 Growth rates of earnings, sales, book value, and cash flows (See Figures 3 and 4).

From these six measures, Morningstar calculates growth and value scores based on five measures each (please see Glossary definitions.) The value score is then subtracted from the growth score to determine an overall combined score. Securities are then sorted in descending order by their composite score. The securities at the top of the list are the most growth-oriented while the securities at the bottom of the list are the most value-oriented. Finally, the top third of securities are assigned a growth investment style, the bottom third are assigned a value investment style, and the middle third are given a core style. There are no absolute values that determine valuation. Valuation is measured in relation to the other securities within a particular market. (Note: Morningstar fund categories use the term "blend" rather than core. Stocks, however, use the term "core.")

After capitalizations and valuations have been determined, Morningstar creates its style box for each fund, which represents a view of the most recent portfolio holdings available. While the style box is determined solely by the fund's most recent holdings, the category is assigned based on all available portfolios. Each portfolio, in this usage of the term, is a holdings profile for the fund at a particular point in time. For example, a fund's portfolio holdings as of December 31, 2006, would be a separate and distinct portfolio from the fund's portfolio holdings as of March 31, 2007.

There is no unique category for the subset of USDE funds that invest in the securities that comprise the S&P 500 Index. These funds are considered large blend (LB) under the category model.

There is also no separate equity income category for the subset of USDE funds that seek relatively high current income by specifically seeking stocks with high dividend yields. These funds are typically classified as large value (LV) by Morningstar and typically fall on the far left side of Morningstar's style box.

### FIGURE 3 MORNINGSTAR GROWTH MEASURES



FIGURE 4 MORNINGSTAR VALUE MEASURES





### APPENDIX II: GENERAL DOMESTIC EQUITY

#### LIPPER

Lipper classifies domestic equity funds with a significant number of short equity positions into four distinct classifications:

- Long/Short Equity (LSE)
- Equity Market Neutral (EMN)
- Dedicated Short Bias (DSB)
- Extended U.S. Large-Cap Core (ELCC)

These classifications are determined by prospectus language that states whether:

- The portfolio manager can take either a net long or net short position depending on market conditions
- He/she is intending to keep the portfolio solely market neutral
- The portfolio is designed to expose the investor to a net short position

Funds that use a combination of both long and short equity positions to invest in a diversified portfolio of U.S. large-cap equities with a target net exposure of 100% long are classified as extended U.S. large-cap core (ELCC) funds. A relatively well-known version of this type of strategy is known as the 130/30, in which the fund invests 130% of assets in long positions and 30% of assets in short positions. However, various strategies may range from 110% long and 10% short to 160% long and 60% short.

Lipper also has a classification for diversified leveraged (DL) funds that seek to generate daily investment results greater than 100% of a stated benchmark index. To achieve these goals, the funds use any combination of futures contracts, other derivatives, and leverage.

Lipper has a "catchall" classification for diversified equity funds with very unique investment strategies that do not fall into one of the above classifications. This classification is called specialty diversified equity (SESE). These funds tend to be very specialized and tend to focus on specific types of equities. One type of mutual fund that would fall into this classification would be a fund that follows an event-driven strategy whereby the fund invests in companies that are involved in mergers, acquisitions, etc.

Morningstar's long-short (LO) category includes all funds whose investment strategies include taking both long and short positions.

There is no distinction as to whether the manager is given the discretion to take a net long/net short position or whether the fund is intended to remain market-neutral. The bear market (BM) category is essentially a one-to-one mapping with the Lipper dedicated short bias classification (DSB).

Morningstar also does not have a category that is similar to Lipper's specialty diversified equity (SESE) classification. Commodities funds are included in Morningstar's natural resources (SN) category; many of the derivative-heavy funds in this Lipper classification fall into the long-short (LO) Morningstar category since derivative-based investment strategies often create net long and short positions. Other funds in this Lipper classification are put into various Morningstar diversified equity categories.

# APPENDIX III: SECTOR EQUITY FUNDS

#### GENERAL NOTES

Lipper has 20 distinct sector equity objectives, while Morningstar has only nine (Table 1). In addition to including distinct objectives for more investment sectors, for sector objectives with a large number of funds, Lipper differentiates between funds that invest solely in domestic securities and funds that invest in both domestic and international securities. Lipper also differentiates between funds that invest in companies engaged in the production/mining of natural resources and funds that invest directly in commodities.

#### LIPPER

Lipper's sector equity objectives tend to be determined by both the specific sector in which the fund invests and whether the fund invests solely in domestic securities or in foreign securities as well.

Funds that invest in real estate investment trusts (REITs) and real estate operating companies (REOCs) are assigned one of three distinct Lipper objectives determined by whether the fund invests solely in domestic securities, in a combination of domestic and foreign securities, or solely in foreign securities as specified in each fund's prospectus. Lipper's three real estate objectives are:

- Real Estate (RE) Real estate funds that invest less than 25% of their assets in foreign real estate securities.
- Global Real Estate (GRE) Funds that invest at least 25% of their assets but less than 75% of their assets in foreign real estate securities.
- International Real Estate (IRE) Funds that invest at least 75% of their assets in foreign real estate securities.





# APPENDIX III: (CONTINUED)

Lipper has both a domestic objective and a global objective for the sectors listed below. The objective is determined by each fund's prospectus language that indicates whether the fund intends to invest in domestic securities only or a combination of domestic and foreign securities:

- Natural Resources (NR)/Global Natural Resources (GNR)
- Financial Services (FS)/Global Financial Service (GFS)
- Health/Biotechnology (H)/Global Health/Biotechnology (GH)
- Science & Technology (TK)/Global Science & Technology(GTK)

For sector equity objectives with a smaller number of funds, Lipper does not differentiate between domestic funds and global funds. These objectives are:

- Telecommunication (TL)
- Utility (UT)
- Consumer Services (CS)
- Consumer Goods (CG)
- Industrials (ID)
- Basic Materials (BM)
- Commodities (CMD)
- Gold-Oriented (AU)

Lipper's sector equity model includes the gold-oriented (AU) objective. This includes all funds investing more than 65% of their assets in gold-related investments. These investments may include gold bullion in addition to gold mining stocks and other precious metals.

Lastly, Lipper has a "catchall" sector objective (specialty & miscellaneous [S]) that captures any fund that limits its investments to a specific industry that is not represented by one of the Lipper sector equity objectives.

#### MORNINGSTAR

Morningstar's categories do not differentiate between global and domestic sector equity funds. Commodities funds are typically included in the specialty-natural resources category.

Morningstar has the following sector equity categories:

- Specialty-Communication (SC)
- Specialty-Financial (SF)
- Specialty-Health (SH)



- Specialty-Natural Resources (SN)
- Specialty-Real Estate (SR)
- Specialty-Technology (ST)
- Specialty-Utilities (SU)

If a fund does not meet the criteria for inclusion in one of the seven Morningstar sector equity categories, it is put into one of the diversified equity categories, based on its capitalization and style characteristics.

Morningstar has a specialty - real estate category and a global real estate (GR) category for real estate funds that invest internationally as well as domestically. The global real estate category is considered world equity under the Morningstar category model.

Morningstar has a direct complement to the Lipper gold-oriented sector equity objective, but this category (specialty-precious metals) is considered world equity under the Morningstar category model.

#### TABLE 1

| Lipper Objective            | Morningstar Category          |
|-----------------------------|-------------------------------|
| Health/Biotechnology        | Specialty – Health            |
| Natural Resources           | Specialty – Natural Resources |
| Science & Technology        | Specialty – Technology        |
| Telecommunication           | Specialty – Communication     |
| Utility                     | Specialty – Utilities         |
| Financial Services          | Specialty – Financial         |
| Real Estate                 | Specialty – Real Estate       |
| Gold-Oriented               | Specialty – Precious Metals   |
| Consumer Services           | None                          |
| Consumer Goods              | None                          |
| Industrials                 | None                          |
| Basic Materials             | None                          |
| Commodities                 | None                          |
| International Real Estate   | None                          |
| Global Real Estate          | Global Real Estate            |
| Global Natural Resources    | None                          |
| Global Financial Services   | None                          |
| Global Health/Biotechnology | None                          |
| Global Science & Technology | None                          |
| Specialty & Miscellaneous   | None                          |



### APPENDIX IV: MIXED-EQUITY FUNDS

#### **GENERAL NOTES**

The Lipper and Morningstar methodologies for mixed-equity funds are very similar. The major differences arise from the specific asset class allocations that are required for each investment classification/ category. Morningstar does not have a growth allocation category. The Morningstar world allocation category is more similar to the Lipper global flexible portfolio objective than to Lipper's growth allocation classification. Most of the Lipper mixed-asset target allocation growth funds fall into the moderate allocation Morningstar category. Also, Lipper has many more distinct fund investment classifications for mixed-asset target date funds.

#### LIPPER

Lipper's mixed-equity classifications and objectives are determined primarily by either the stated investment mix (target allocation funds) or the specific date for which the fund is intending to invest (target date/horizon funds). Additionally, there are three mixedequity objectives-convertible securities (CV), flexible portfolio (FX), and global flexible portfolio (GX). Based on stated prospectus language, Lipper classifies target allocation funds as mixed-asset target allocation conservative (MTAC), mixed-asset target allocation moderate (MTAM), and mixed-asset target allocation growth (MTAG), based on the percentage of assets that are expected to be invested in equity securities in relation to other investments. If a fund has between 20% and 40% in equity, it is classified as mixed-asset target allocation conservative. If it is expected to hold 40% - 60% in equity, it is classified as mixed-asset target allocation moderate. If it is expected to hold 60% to 80% in equity securities, it is classified as mixed-asset target allocation growth (Table 2).

Lipper's classification methodology for target date/time horizon funds divides these funds into groups based on the target date for which the fund invests. Lipper uses nine distinct investment classifications:

Target 2010 (MATA), Target 2015 (MATF), Target 2020 (MATB), Target 2025 (MATG), Target 2030 (MATC), Target 2035 (MATD), Target 2040 (MATH), Target 2045 (MATI), and Target 2050+ (MATE). Please see Table 3.

Typically, these funds are designed to take larger equity positions the farther they are from their target date. A fund with a 2050 horizon would likely hold nearly 100% of its assets in equity securities, while

### TABLE 2

| Conservative      |        |             |
|-------------------|--------|-------------|
|                   | Lipper | Morningstar |
| Equity            | 20-40% | 20-50%      |
| Fixed Income/Cash | 60-80% | 50-80%      |

| Moderate          |        |             |
|-------------------|--------|-------------|
|                   | Lipper | Morningstar |
| Equity            | 40-60% | 50-70%      |
| Fixed Income/Cash | 40-60% | 30-50%      |

| Growth            |        |             |
|-------------------|--------|-------------|
|                   | Lipper | Morningstar |
| Equity            | 60-80% | N/A         |
| Fixed Income/Cash | 20-40% | N/A         |

### TABLE 3

| Lipper                   | Morningstar           |   |
|--------------------------|-----------------------|---|
| Mixed-Asset Target 2010  | Target-Date 2000-2010 | C |
| Mixed-Asset Target 2015  | Target-Date 2011-2015 | 5 |
| Mixed-Asset Target 2020  | Target-Date 2016-2020 | ) |
| Mixed-Asset Target 2025  | Target-Date 2021-2025 | 5 |
| Mixed-Asset Target 2030  | Target-Date 2026-2030 | C |
| Mixed-Asset Target 2035  | Target-Date 2031-2035 | 5 |
| Mixed-Asset Target 2040  | Target-Date 2036-2040 | D |
| Mixed-Asset Target 2045  | Target-Date 2041-2045 | 5 |
| Mixed-Asset Target 2050+ | Target-Date 2050+     |   |

a fund with a 2010 horizon would likely be more focused on fixed income securities.

These funds adjust their asset allocations to less risky assets as the target date approaches (the fund's glide path). However, the specific glide paths vary from fund to fund and complex to complex. The specific allocations between asset classes do not determine the classifications. The various glide paths for each unique fund might result in a substantially different investment allocation within similar target date ranges.

Convertible securities (CV) funds concentrate their investments in convertible bonds and convertible preferred stock. Because of the





# APPENDIX IV:(CONTINUED)

nature of these convertible securities, they act similar to bonds in some respects, while similar to equity in others. They typically carry a fixed income component in the form of a coupon or dividend. They can also be converted to common stock if the conditions are favorable to the investor (if the value of the common stock into which the securities can be converted exceeds the present value of the cash flows from the convertible securities as fixed income instruments).

Funds are assigned to the flexible portfolio (FX) objective if they do not state a percentage that is expected to be invested in each particular asset class.

Global flexible portfolio (GX) funds invest in multiple asset classes, but must invest at least 25% of their assets outside of the United States. There is not necessarily a specified percentage for investments within each particular asset class in the fund's prospectus.

#### MORNINGSTAR

Similar to Lipper, Morningstar divides mixed-equity funds into several types of categories. Funds that seek a certain investment allocation are assigned to one of three allocation categories: conservative allocation (CA), moderate allocation (MA), and world allocation (IH). Funds that seek a target investment horizon are assigned to one of the nine target-date categories. There is also a convertibles category in the mixed-equity broad asset class.

The conservative allocation category comprises funds that invest between 20% and 50% in equity securities with the remainder invested in fixed income and cash. The moderate allocation category is assigned to funds that invest between 50% and 70% in equity securities. The world allocation category contains funds that invest in several asset classes, both internationally and domestically. They must have less than 70% of their assets in equity securities and at least 40% of their assets invested outside the United States.

Target date/time horizon funds are assigned to one of nine Morningstar categories based on the specific date for which the portfolio is designed. Target date/time horizon funds are assigned to one of nine Morningstar categories based on the specific date for which the portfolio is designed. The nine categories are target-date 2000-2010, target-date 2011-2015, target-date 2016-2020, target-date 2021-2025, target-date 2026-2030, target-date 2031-2035, target-date 2036-2040, target-date 2041-2045, and target-date 2050+. Similar to Lipper, the specific asset allocations are not

examined in the classification of these funds. Thus, the glide path between asset classes might vary substantially between two funds within the same category.

Morningstar also includes a retirement income category for funds that are designed to provide for investors who are already in retirement. These funds are typically classified as mixed-asset target allocation conservative under the Lipper classification model.

The convertibles category is essentially a one-to-one mapping with the Lipper convertible securities objective. These funds specifically invest in convertible bonds and convertible preferred stock.

# APPENDIX V: WORLD EQUITY FUNDS

#### **GENERAL NOTES**

Lipper uses the terms international and global in its classification nomenclature, while Morningstar uses the terms foreign and world to represent similar investment spaces. Lipper's distinction between global and international funds is prospectus-based, while Morningstar's is holdings-based.

Morningstar has a single category for world stock funds while Lipper divides the funds in this category into nine unique classifications based upon the market capitalizations and the investment style of the underlying securities. Lipper also has the China region objective for which Morningstar has no complementary category.

#### LIPPER

When classifying world equity funds, Lipper first assigns each fund an objective determined by the prospectus language regarding the fund's investment strategy; if the fund is determined to be a diversified global equity or diversified international equity fund, it is assigned a holdings-based classification based upon its specific portfolio characteristics. All world equity funds are assigned to one of 23 unique investment classifications or objectives. There are seven global diversified equity classifications, nine international diversified equity classifications, and seven region-specific world equity objectives.

Similar to the holdings-based classification model used for USDE funds, Lipper's world equity classification model assigns funds



# APPENDIX V:(CONTINUED)

to a classification based on a weighted average for the market capitalization and investment valuation characteristics of the underlying securities that the fund holds. Lipper determines world equity security market capitalizations by the securities' size in relation to the global market as measured by the S&P/Citi World Broad Market Index for global diversified equity funds or the S&P/ Citi World ex-U.S. Broad Market Index for international diversified equity funds.

Under Lipper's model, individual stocks are compared to the S&P/Citi World BMI's portfolio characteristics with respect to capitalization and valuation. When determining the valuation/investment style, equal weighting is given to the following financial ratios:

- Price/Cash flow
- Price/Book
- Three-year sales-per-share growth.

Similar to USDE funds, world equity funds that fall into a border region's particular style weighting (z-scores that fall within either +0.05 and +0.15 or -0.05 and -0.15) are tested using two additional criteria—for international and global funds these are price/sales and price/dividend ratio. Please see the Glossary for a definition of the ratios used in this model.

Lipper has seven global diversified equity classifications and nine international diversified equity classifications. Each fund is assigned one of three market capitalizations (large-cap, multicap, or small/mid-cap) and one of three distinct styles (value, core, or growth). Due to the limited number of available funds, global small/mid-cap diversified equity funds are not further differentiated by their valuations, resulting in two fewer global diversified equity classifications than international diversified equity classifications.

Lipper has a separate world equity objective for funds that specifically invest in emerging/developing economies. The emerging markets (EM) objective requires that the fund intends to invest at least 65% of its assets in emerging market economies.

Lipper also has six regional world equity objectives for funds that concentrate their investments in particular regions. These include:

- Latin American (LT)
- European region (EU)
- Japanese (JA)
- Pacific region (PC)

- Pacific ex-Japan (XJ)
- China region (CH)

The Pacific region objective includes all funds that invest in Pacific economies. The subset of Pacific region funds that are restricted from investing in Japan are assigned the Pacific ex-Japan objective. Funds that are not currently investing in Japan, but still have no restrictions against doing so are still given the PC objective. The subset of Pacific region funds that invests specifically in China, Taiwan, and Hong Kong are put in the China region objective.

#### MORNINGSTAR

All world equity funds are assigned one of 12 unique world equity categories. Diversified world equity funds that have less than 20% invested domestically fall into one of the five foreign stock categories. Diversified world equity funds with between 20% and 60% invested domestically fall into the world stock category. Unlike Lipper's classification model, this category is not broken down by market capitalization and investment style of the funds.

Morningstar determines the market capitalization for diversified foreign stocks by the security's market capitalization in relation to its macro market (Europe, Asia ex-Japan, etc). Within each macro market, the top 70% of stocks, as measured by market cap, are considered large-cap, the next 20% are considered mid-cap, and the final 10% are considered small-cap. An asset-weighted average of a fund's holdings determines the overall capitalization of the fund. Morningstar measures valuation by price ratios, dividend yields, and growth rates for earnings, sales, book value, and cash flow. Similar to its domestic fund valuations, Morningstar first calculates both a growth and a value score and then subtracts the value score from the growth score to determine the valuation/investment style of the security. Please see the Glossary for ratio definitions.

Outside of diversified world equity categories, Morningstar has a unique category for diversified emerging markets (EM). In order to be assigned to this category, a fund must hold at least 70% of its assets in equity securities, and of those equity securities, at least 50% must be invested in emerging/developing markets.

Morningstar's regional world equity categories are generally a oneto-one mapping with Lipper's world equity objectives.





# APPENDIX V: (CONTINUED)

Morningstar has the following categories for regional world equity funds:

- Latin America Stock (LS)
- Europe Stock (ES)
- Japan Stock (JS)
- Pacific/Asia ex-Japan Stock (PJ)
- Diversified Pacific/Asia (DP)

Morningstar does not, however, differentiate a unique category for funds that specifically invest in the China region. Also, under the Morningstar classification model, a Pacific/Asia ex-Japan fund may invest in Japan as long as these securities do not exceed 10% of the fund's holdings.

### APPENDIX VI: TAXABLE FIXED INCOME FUNDS

#### **GENERAL NOTES**

Lipper's bond fund objectives are typically differentiated by assetweighted average maturity while Morningstar's are measured by bond duration. Morningstar will also use maturity when duration is unavailable. The specific time periods used are not identical.

Morningstar's U.S. government categories are broken into many Lipper investment objectives, depending on the specific type of government securities in which the fund invests.

#### LIPPER

Lipper has 23 unique taxable fixed income objectives that are typically differentiated by both maturity and type of bonds that the fund holds.

Funds that hold bonds that are issued or backed by the U.S. government or one of its agencies are assigned to one of nine unique investment objectives. U.S. government debt objectives include:

- General U.S. government (GUS)
- Intermediate U.S. government (IUS)
- Short/intermediate U.S. government (SIU)
- Short U.S. government (SUS)

In addition, Lipper has two objectives for the subset of U.S. government bond funds that concentrate their U.S. government securities in Treasury bills, Treasury notes, and Treasury bonds. These are the general U.S. Treasury (GUT) and short U.S. Treasury (SUT) objectives. Lipper has two objectives for the subset of U.S. government funds that concentrate their investments in mortgage-backed securities that are backed by the U.S. government. These are U.S. mortgage (USM) funds and GNMA (GNM) funds. The difference between these two objectives is that GNMA funds specifically invest in GNMA securities while U.S. mortgage funds do not. Lipper also maintains a separate objective for the subset of U.S. government bond funds that invest in Treasury Inflation-Protected Securities (IUT.)

Lipper assigns corporate bond funds to one of five objectives, based on each fund's weighted-average maturity and bond quality. Longterm bond funds are given either the A-rated corporate debt (A) fund objective or the BBB-rated corporate debt (BBB) fund objective depending on the quality restrictions that are specified in the fund's prospectus.

Lipper also has the following taxable fixed income objectives:

- Intermediate investment-grade debt (IID)
- Short/intermediate investment-grade debt (SII)
- Short investment-grade debt (SID)

For both government and corporate debt objectives, a security is considered short if its weighted average maturity is expected to be between one and three years. It is considered short/intermediate if its weighted average maturity is expected to be between one and five

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### TABLE 4

| Lipper             |          |
|--------------------|----------|
|                    | Maturity |
| Long               | 10+      |
| Intermediate       | 5-10     |
| Short/Intermediate | 1-5      |
| Short              | 1-3      |

| Morningstar        |          |          |
|--------------------|----------|----------|
|                    | Duration | Maturity |
| Long               | 6+       | 10+      |
| Intermediate       | 3.5-6    | 4-10     |
| Short/Intermediate | N/A      | N/A      |
| Short              | 1-3.5    | 1-4      |





# APPENDIX VI: (CONTINUED)

years. It is considered intermediate if its weighted average maturity is expected to be between five and ten years, and considered long if the weighted average maturity is expected to be greater than ten years.

The ultra-short obligation (USO) objective is assigned to bond funds that invest in securities with weighted average maturities of less than one year.

Diversified world debt funds are divided into two distinct objectives depending on whether they are designed to invest in both the United States and other economies—global income (GLI)—or whether they are restricted from investing in domestic securities—international income (INI).

The multi-sector income (MSI) objective is assigned to funds that spread their investments among multiple fixed income sectors. These funds typically have a significant portion of their assets invested in non-investment-grade debt securities. Flexible income (FLX) funds are essentially multi-sector income funds that may take small equity positions and may invest in convertible securities. General bond (GB) funds are similar to multi-sector income funds, but tend to invest in higher-grade securites, including government issues and investmentgrade corporate debt.

The high current yield (HY) objective, emerging markets debt (EMD) objective, and loan participation (LP) objective are essentially identical to the Morningstar high yield bond, emerging markets bond, and bank loan categories, respectively.

#### MORNINGSTAR

Morningstar has 15 taxable fixed income categories. These are separated initially by bond type and then by the weighted average duration of the securities that the fund holds. Morningstar also uses the weighted average maturity of the securities in the event that the duration is unavailable. In contrast to the Lipper objectives, Morningstar has only three bond duration lengths: short, intermediate, and long. These are separated such that a weighted average duration of 3.5 years categorizes the fund as short, a weighted average duration of 3.5 to six years is categorized as intermediate, and a weighted average duration of greater than six years is categorized as long.

All U.S. government funds are separated into one of four categories:

- Long government (GL)
- Intermediate government (GI)
- Short government (GS)
- Inflation-protected bond (IP).

Morningstar does not differentiate between funds that invest in U.S. Treasury securities or mortgage-backed securities and other bond funds that invest in general government or agency securities. The inflation-protected bond category is similar to the Lipper inflationprotected objective.

Like government bond funds, corporate bond funds are categorized by the duration of the fund's holdings. There are no distinctions made for the quality of the underlying holdings.

Ultrashort bond (UB) funds are representative of all funds that have weighted average durations of less than one year.

Morningstar also has a category for world bonds (IB); however, there is no category distinction for funds that invest exclusively outside of the United States and for funds that divide their investments between domestic and international markets. Instead, all funds that invest at least 40% of their assets in foreign bond markets are put in the world bond category.

The multisector bond (MU) category is representative of funds that diversify their investments among various fixed income sectors with a significant portion of assets invested in debt instruments that are rated below investment grade. There is significant overlap between this Morningstar category and the Lipper multi-sector income, flexible income, and general bond objectives.

As discussed earlier, the Morningstar high yield bond (HY), emerging markets bond (EB), and bank loan (BL) categories are virtually identical to the Lipper high current yield, emerging markets debt, and loan participation objectives, respectively.

Finally, Morningstar has a category for currency (CR) funds, for which there is no applicable Lipper objective.





# APPENDIX VII: MUNICIPAL DEBT FUNDS

#### **GENERAL NOTES**

There are 32 Lipper municipal debt objectives in contrast to only 16 unique Morningstar categories. The majority of the differences arise because Lipper has 26 single-state municipal objectives that are represented by only 12 Morningstar categories. Morningstar distinguishes between these funds (for many states) primarily by the weighted average duration of the investments that the fund holds, while Lipper assigns objectives based primarily on the particular state in which the fund invests.

There are no Morningstar categories to differentiate between insured municipal debt funds and those funds that hold securities that are not insured.

The same variances between the Lipper and Morningstar systems for classifying taxable fixed income securities occur in the tax-exempt universe as well. Lipper assigns objectives based on weighted average maturity of the fund's portfolio while Morningstar uses the fund's weighted average duration. Note: The Morningstar durations for municipal debt securities are slightly different from those for government or corporate debt securities (Please see Table 5.)

#### LIPPER

General municipal debt funds are first separated by the weighted average maturity of the fund's underlying securities and assigned to one of four investment objectives:

- General municipal debt (GM)
- Intermediate municipal debt (IMD)
- Short/intermediate municipal debt (SIM)
- Short municipal debt (SMD).

As with government and corporate bond funds, a municipal debt security is considered short if its weighted average maturity is expected to be between one and three years. It is considered short/intermediate if its weighted average maturity is expected to be between one and five years. It is considered intermediate if its weighted average maturity is expected to be between five and ten years, and considered long if the weighted average maturity is expected to be greater than ten years. The Lipper classification model includes a separate investment objective for general municipal debt funds that invest primarily in insured municipal debt securities insured municipal debt (MDI.)



|                    | Lipper   |
|--------------------|----------|
|                    | Maturity |
| Long               | 10+      |
| Intermediate       | 5-10     |
| Short/Intermediate | 1-5      |
| Short              | 0-3      |

| Morningstar        |          |          |
|--------------------|----------|----------|
|                    | Duration | Maturity |
| Long               | 7+       | 12+      |
| Intermediate       | 4.5-7    | 5-12     |
| Short/Intermediate | N/A      | N/A      |
| Short              | 0-4.5    | 0-5      |

The high yield municipal debt objective (HM) is assigned to all municipal debt funds that invest over 50% of their assets in municipal bond issues that are rated as below investment grade.

Lipper has four unique investment classifications for single-state California municipal debt funds depending on the weighted average maturity of the fund's investment portfolio. The final objective is assigned to funds that invest primarily in insured debt securities.

- California municipal debt (CAG)
- California intermediate municipal debt (CAT)
- California short/intermediate municipal debt (CAS)
- California insured municipal debt (CAI).

For single-state municipal debt funds that invest in New York and Massachusetts, Lipper has both a general single-state objective and an intermediate objective. This results in four unique Lipper objectives for these two states.

Lipper also has a general single-state municipal debt objective for each of the following states:

- Arizona (AZ)
- Colorado (CO)
- Connecticut (CT)
- Florida (FL)
- Georgia (GA)
- Maryland (MD)
- Michigan (MI)
- Minnesota (MN)
- Missouri (MO)



# APPENDIX VII: (CONTINUED)

- New Jersey (NJ)
- North Carolina (NC)
- Ohio (OH)
- Pennsylvania (PA)
- Virginia (VA)

Finally, for any single-state municipal debt fund that invests in one of the 33 states that are not represented by a Lipper single-state objective, there are three additional objectives that are designed as a catchall depending on the expected weighted-average maturity of each fund's holdings as specified in the fund's prospectus. These include:

- Other-states municipal debt (OTH)
- Other-states intermediate municipal debt (OST)
- Other-states short/intermediate municipal debt (OSS.)

Any single-state municipal debt fund that limits investments to assets that are insured as to timely payment (exclusive of funds that invest in either California or Florida municipal debt securities as these funds have distinct single-state insured objectives) are assigned to the Lipper single-state insured municipal debt (SSIM) objective.

#### MORNINGSTAR

Morningstar has three general municipal debt categories that are differentiated by the weighted average duration of each fund's holdings. They are separated such that a weighted average duration of less than 4.5 years categorizes the fund as short, a weighted average duration of 4.5 to seven years is categorized as intermediate, and a weighted-average duration of greater than seven years is categorized as long.

Morningstar also has a high yield muni (HM) category that is a oneto-one mapping with the Lipper high yield municipal debt objective. If 50% or more of a municipal debt fund's holdings are given a quality rating of below investment grade, the fund is assigned to this category.

California and New York municipal debt funds are further broken down by their weighted average durations into one of the following categories:

- Muni California Long (MC)
- Muni New York Long (MY)
- Muni California Intermediate/Short (MF)
- Muni New York Intermediate/Short (MN)

Five groups of single-state funds, in addition to the aforementioned California and New York, are represented by their own Morningstar category:

- Massachusetts (MT)
- Minnesota (SM)
- New Jersey (MJ)
- Ohio (MO)
- Pennsylvania (MP)

Finally, all other single-state municipal debt funds are assigned to one of three Morningstar "catchall" single-state categories. Depending on the weighted average duration of the particular fund, it is put into one of the following categories:

- Muni Single State Long (SL)
- Muni Single State Intermediate (SI)
- Muni Single State Short (SS) category.

### APPENDIX VIII: MONEY MARKET FUNDS

Morningstar does not currently report on money market funds in any of its publications or websites. Lipper has 17 unique money market objectives. Lipper has an objective for retail money markets, tax-exempt money markets, U.S. government money markets, U.S. Treasury money markets, and each of their institutional counterparts. Lipper also has nine single-state municipal debt fund objectives including an "other states" objective that includes all single-state municipal money market funds that are not represented by a separate objective.

There are only two Morningstar money market fund categories (taxable money market [TM] and tax-free money market [TF]) that are determined by the types of money market securities in which the funds invest.

methodologies, please see: http://www.lipperweb.com/services/lipperclassifications.asp and http://www.morningstar.com for the Lipper and Morningstar methodology

documents, respectively.





For complete descriptions of the Lipper and Morningstar fund classification

# GLOSSARY: RATIO DEFINITIONS

#### LIPPER:

**Price/Earnings** = Current Market Price per Share/Earnings per Share

**Price/Sales** = Current Market Price per Share/Net Revenues per Share

**Price/Cash Flow** = Current Market Price per Share/Net Cash Flow (used only for international/global funds)

**Price/Operating Cash Flow** = Current Market Price per Share/ Operating Cash Flow per Share

**Price/Book** = Current Market Price per Share/Book Value of Equity per Share

**Three-Year Sales per Share Growth** = Growth rate in sales/number of shares outstanding over the past three years

#### MORNINGSTAR:

Price/Prospective Earnings = Current Market Price per Share/ Estimated next period earnings per Share. Price/Sales = Current Market Price per Share/Net Revenue per

Share

**Price/Cash Flow** = Current Market Price per Share/Net Cash Flow per Share

**Dividend Yield** = Most Recent Dividend per Share/Current Market Price per Share

**Long-Term Projected Earnings Growth** – Expected increase in net income in future periods

**Historical Earnings Growth** = Calculated growth rate in net income over past periods

**Sales Growth** = Calculated growth rate in net revenues over past periods

**Cash Flow Growth** = Calculated growth rate in net cash flow over historical periods

**Book Value Growth** = Calculated growth rate in book value of equity over historical periods

# KEY TERMS:

**Asset- (Dollar-) Weighted Average** An aggregate measure of central tendency of a group of values, e.g., management fees, total expense ratios, etc., that is similar to a simple average or median, yet accounts for disparate size or impact of certain values within a group. In the fund context, an asset- (dollar-) weighted average is computed by assigning an asset weight based on the total or average net assets (where applicable) of a fund. An assigned weight is based on the proportion of total or average net assets of a fund in comparison to the applicable group's aggregate assets. Expense ratios are multiplied by the weights and summed to create the asset-(dollar-) weighted average (ratio).

**At-Cost Fund** A fund that levies its operating expenses on an at-cost (not-for-profit) basis rather than for a profit. Typically, at-cost funds have very low management fees and total expense ratios. Distribution efforts are primarily targeted to a select group of shareholders, such as employees of a single company. Some examples of at-cost funds are Vanguard-administered funds, Elfun funds (of GE Asset Management), and some State Farm funds.

Average Net Assets (ANA) Average daily net assets of an individual class of a fund's shares (or the entire fund for a single-class fund) over its fiscal period.

**Duration** A measure of a fund's overall likely price volatility given movements in interest rates ("interest rate risk"). The higher a duration number, the longer the terms of the debt obligations purchased by the fund and the more price volatility per unit of interest rate movement.

**Economies of Scale** An economic principle stating that as volume of production increases, the cost of producing each incremental unit decreases. As applied to the fund business, the implication is that as assets increase, the percentage cost of managing and/or servicing those assets decreases.

**Enhanced Index Fund** A fund whose objective is to exceed the total investment performance of a publicly recognized securities market index. Enhanced index funds are actively managed and invest the



### KEY TERMS: (CONTINUED)

majority of their assets in the components of a targeted index; however, they also invest in derivative securities based on the index and may weight their holdings in different proportions than the targeted index.

**Fund of Funds** A fund whose investment objective and policy is to invest primarily in other investment companies. Affiliated funds of funds invest in funds solely within their sponsor's fund family, whereas unaffiliated funds of funds invest in funds outside the sponsor's family.

**Index-Based Fund** A fund that utilizes any index (widely recognized or branded) as its primary filter for selecting securities in which to invest. Index-based funds may invest in nonpublicly recognized indices, multiple indices, derivatives, and a portion or all of the fund may be passively or actively managed.

**Institutional Fund** A fund sold/marketed primarily or exclusively to institutions, pension plans, banks, corporations, organizations, etc. Institutional funds typically have little or no front- or back-end sales charges or 12b-1/non-12b-1 service fees.

**Market Capitalization** A measure of the size of a fund's overall equity holdings (market value) computed by multiplying shares outstanding by market price.

**Maturity** A measure of the overall length of time a fund is a creditor—through bond ownership—before the obligations are paid off (mature).

Mean The arithmetic average of a group of numbers.

**Median** A value in an ordered set of values (sorted from largest to smallest) below and above which there is an equal number of values; or, a value that is the arithmetic mean of the two middle values if there is no one middle number.

**Portfolio** The collective term for all classes of shares of a fund. Lipper sums the assets of all classes of shares to calculate "portfolio" assets and computes contractual management fees on a "portfolio" basis, since management fees are levied on average net assets of all the classes of shares. **Pure Index Fund** A fund whose objective is to match the total investment performance of a publicly recognized securities market index. A fund designated as "pure index" is passively managed and invests a majority of its assets in virtually all the securities of the targeted index, rebalancing regularly to mimic the proportions of the index. The performance of such a fund is likely to track its index very closely.

**Style** All United States diversified equity funds, international funds, and global funds are assigned an investment style based on their holdings. Styles are determined by whether the equity securities should be considered value, growth, or a combination (core).

**Quality** For debt offerings in which the fund has participated, a measure of the overall financial ability of the bond issues to meet debt servicing obligations as determined by an outside rating organization such as Standard & Poor's.

**Z-Score** A statistical measure that quantifies the distance (measured in standard deviations) that a data point is from the mean of the data set.



