

DIMENSIONAL FUND ADVISORS

# Managing Investment Risk

MAY 2011

Investing can involve many types of risk, and investors may define or focus on risk in many different ways. This paper discusses aspects of three types of risk—concentration, operational, and implementation—and describes Dimensional’s approach to managing them.

Concentration risk can occur, sometimes surreptitiously, in several ways. The most common way this risk manifests itself is in strategies with a small number of holdings. But concentration risk can also be present in a strategy that samples an asset class, as some index funds do. Even a diversified strategy could become concentrated in a small number of holdings or in a few sectors or countries if the strategy does not control for these risks. It’s important for investors to be aware of what their managers are doing to identify and manage concentration risk while maintaining the objective of the investment strategy.

The 2008 financial crisis, particularly the scandals that were exposed, put a spotlight on operational risk. Many questions were raised about the security of investor assets and independent auditing of investment managers’ systems and processes. More recently, as a wave of financial and political crises have occurred throughout the world, investors have become aware of implementation risk

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for managers investing globally. Directly accessing many different local markets and maintaining the ability to trade efficiently throughout unexpected events are two important examples.

Dimensional works to identify the ways these risks can occur and the potential impact on the firm’s strategies. Detailed here are specific measures the firm uses to help manage these risks and deliver investment solutions for clients.

## MANAGING CONCENTRATION RISK

Broad diversification across a number of areas—securities, industries, countries, and currencies—is a key element in Dimensional’s approach to managing concentration risk. The strategies have guidelines designed to limit the risk of concentration and maintain diversification. The goal is to mitigate this risk while delivering access to the particular asset class in a cost-efficient way that adds value.

Dimensional creates its own equity asset class definitions that generally start with a larger universe of stocks than the indices. This approach gives the firm’s strategies deep access, for example, to small cap stocks or value stocks, and most Dimensional strategies hold hundreds or thousands of individual securities. This diversification is a primary feature in Dimensional’s approach and is designed to prevent a substantial negative impact if any single security has a sharp decline. The strategies maintain broad diversification by limiting investment in individual securities. For instance, non-US multi-country strategies generally limit individual securities to 5% at the time of purchase. The limit guideline varies across strategies depending on the investment objective.

Investing in a large number of countries further diversifies Dimensional’s multi-country strategies, which are designed to provide exposure to developed markets or emerging markets worldwide. Across all strategies, Dimensional currently invests in twenty-four developed markets and twenty emerging markets. The breadth of this country exposure provides the benefits of diversification while minimizing country-specific risk in the relevant strategies.

Controlling for country-specific risk has been particularly important historically when investing in emerging markets. Many emerging market countries have experienced greater volatility and political risk than developed market countries. Dimensional currently uses a market capitalization weighted method in its emerging markets strategies and targets a maximum of 15% at the time of purchase across the eligible countries. This approach allows Dimensional’s strategies to maintain country weights that are similar to the natural market weights, with the advantage of minimizing the risk of significant concentration in a few countries.

Currency diversification is another practice that is particularly important in emerging markets strategies, because some of these markets have experienced significant currency volatility. Generally, Dimensional does not hedge

foreign currencies in its equity strategies. (Some strategies do offer a separate hedged class to suit client preferences.) This approach, combined with strategies investing across many countries, creates diversified currency exposure and is designed to reduce the chance of any adverse impact from a significant change in the value of a country’s currency.

Concentration risk can also develop from an equity strategy’s industry exposure. Dimensional aims to reduce this risk in many equity strategies by capping industry groups at approximately 25%. This approach allows the firm’s equity strategies to focus on targeting the dimensions of higher expected returns, rather than any industry or sector, and maintain broad diversification.

Dimensional addresses the risk of broad sector-level concentration as well—a practice that is particularly relevant in value strategies. In addition to the industry group guideline, the firm’s equity strategies employ sector cap targets. Dimensional’s value strategies generally use a single break point to define value stocks. In multi-country value strategies a break is set for each country and updated regularly. Over time, this practice will lead to some sectors being underweight or overweight relative to their natural market weights and create a sector rotation effect that can enhance returns. However, if any sector were to become sharply value tilted, its weight in a strategy could become substantial and create a sector bias. Dimensional uses a dynamic sector-weighting method with the aim of reducing this risk. Sectors are typically capped at their approximate weight in a broadly diversified, sector-neutral universe plus an additional 10%. It is important to emphasize that this is a guideline. Portfolio managers evaluate the benefits of staying within the cap along with the associated transaction costs. This approach allows the strategies to deliver the benefits of sector rotation and maintain diversification while aiming to reduce the risk of sector concentration.

As in the equity strategies, diversification is a key risk control element in Dimensional’s fixed income strategies. In the strategies, individual issuers in the upper, high-quality investment grade tier are generally limited to a maximum of 3% at the time of purchase. Issuers in the lower investment grade tier are generally limited to a maximum of 1% at time of purchase. These guidelines help the strategies deliver the benefits of diversification and help reduce concentration risk. Currently, the firm’s fixed income strategies cannot purchase bonds below investment grade, and several strategies purchase only high-quality bonds. To address

liquidity risk, Dimensional focuses on liquid fixed income securities that can be traded efficiently. The duration and credit quality of bonds held in the strategies are monitored regularly in an attempt to reduce the chance of style drift and ensure the strategies remain focused on their objective.

### MANAGING OPERATIONAL RISK

Dimensional is a global firm and coordinates operational risk management across all offices. With offices in several countries, the firm must adhere to regulatory requirements in multiple jurisdictions, such as the regulations of the Securities and Exchange Commission and the Financial Industry Regulatory Authority in the US.

Dimensional's portfolio compliance group provides comprehensive daily oversight both pre- and post-trade. The group maintains a detailed audit trail and an error correction policy in the event of issues identified post-trade. This oversight ensures the strategies are adhering to regulatory requirements and the stated investment objectives. The group also conducts an annual compliance review examining elements such as supervisory controls and any impact from changes in regulations.

The Dimensional funds, like other regulated investment companies, appoint independent firms to provide services. This separation helps protect shareholders because these firms are working on their behalf. In the US, Dimensional utilizes two qualified bank custodians—Citibank and BNY Mellon—to maintain possession of the securities owned by shareholders. Custodians are required by law to segregate mutual fund securities from other assets. An independent firm—BNY Mellon—calculates daily net asset values for the funds. Each year, an independent auditor examines certain control objectives and activities and issues a report following the Statement on Auditing Standards (SAS) Number 70 Type II. The SAS 70 is an auditing standard developed by the American Institute of Certified Public Accountants.

### MANAGING IMPLEMENTATION RISK

Dimensional employs a team approach using portfolio management and trading processes that do not rely on specific individuals. This approach can substantially diminish implementation risk. The firm has historically experienced low turnover among its investment professionals. In the event of a departure, the team approach significantly minimizes the potential of any negative impact.

Dimensional invests directly in most countries, including many emerging market countries, through the local exchanges. To help reduce the risks in direct market access, the firm conducts rigorous analysis and requires a minimum market capitalization and ample liquidity before approving an exchange for trading. Additional requirements are set for the emerging market countries where Dimensional invests directly, including a good legal system, fair treatment of foreign ownership, and a reliable settlement system. In some emerging markets that do not meet the firm's requirements for direct investment, alternative means of investment are used, such as depositary receipts traded on the US or UK exchanges. This practice allows the strategies to gain exposure to the performance of equities across many countries while avoiding potential risks in some of the local exchanges.

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