MSCI

Research Insight

Bringing the Best of DB to DC Fund Options

The Role of Index-Based Global Equities in Defined Contribution Plans and Wealth Management

P. Brett Hammond

Juliana Bambaci

Summary

Individual investing has become a prominent part of the investment landscape. Whether for retirement, wealth management, estate planning, or other purposes, the enormous growth of individually-directed assets has stirred increased interest in and attention to the way individuals try to set and meet investment goals. Unfortunately, most individuals fare less well than institutional investors when it comes to the choices they make and, most important, their ability to achieve overall financial security.

In response, defined contribution (DC) plans and wealth management advisors are turning to lessons from institutional investing, including its emphasis on low expenses, long-term returns, appropriate funding levels, and liability driven investment (e.g., income replacement), in an effort to significantly improve outcomes for individuals.

As a part of this trend, defined contribution plans and advisors are increasingly recognizing the benefits of adopting a ***global investment framework*** by selecting a global index such as the MSCI ACWI Investable Market Index (IMI)—a global equity index consisting of developed and emerging markets countries across the large, mid, and small cap size segments—to guide asset allocation and construction of the target date and core fund lineup. Such a framework, which is based on an advanced and well-documented methodology, is designed to include the full range of investable stocks across all countries, regions, sectors, styles, and sizes. Consequently, it can help investors gain access to the global investment opportunity set as well as avoid key dysfunctions associated with many fund lineups, including benchmark misfit and underperformance.

To implement a global approach, defined contribution plans and wealth management advisors are beginning to use a compact family of indexes that add up to the global investment opportunity set. For example, a sponsor or advisor can select funds based on a comprehensive fund-of-funds approach—say, funds based on MSCI USA IMI, MSCI Emerging Markets IMI, and MSCI World ex USA IMI—that together add up to MSCI ACWI IMI. Alternatively, they could also select an array of funds that reflect subcomponent indexes of these three MSCI Indexes. For fund lineups that already include some domestic and international funds but still have significant gaps in coverage, a completion approach could add indexes so that the resulting lineup includes full global representation. And for fund lineups that contain domestic and international overlaps as well as gaps, an approach that eliminates those disparities would also meet the objective of providing a truly global set of options for investor portfolios.

Plan sponsors and advisors can also use indexes to monitor and evaluate funds. Like other institutional investors, plan sponsors and advisors can set investment goals through the use of clear, explicit benchmarks and then compare each individual fund choice against its benchmark—or even compare the entire equity portfolio against the broad global index. Further, since performance and fees vary by mandate—as represented by a benchmark or index—sponsors and investors can better compare funds that compete to offer a specific mandate.

Of course, plan sponsors and advisors are also increasingly turning to simple ways to “nudge” individual investors toward an appropriate asset mix through the use of target date funds and model portfolios. These tier one or default options, which are increasingly available to individuals by choice or default, offer many, though not all, of the features emphasized in institutional investing, including preset multi-asset class allocations where changes are automatically geared to an investor’s age and regularly rebalanced. Through a global investment framework and clearly defined indexes, the plan sponsor, advisor, and individual investor can express long-term investment goals, understand how the asset allocation of a target date or customized asset allocation fits with these goals, and evaluate funds in light of their ability to track or exceed the appropriate blended mix of underlying benchmarks.

With the adoption of an adequate savings strategy, a guaranteed income component, expert advice, and appropriate investment tools, the evidence shows that defined contribution plans and advisors can improve an investor's chances of achieving an adequate retirement income that lasts a lifetime, wealth that doesn't dry up at the wrong moment, and/or a potential legacy that means something to those who benefit from it.

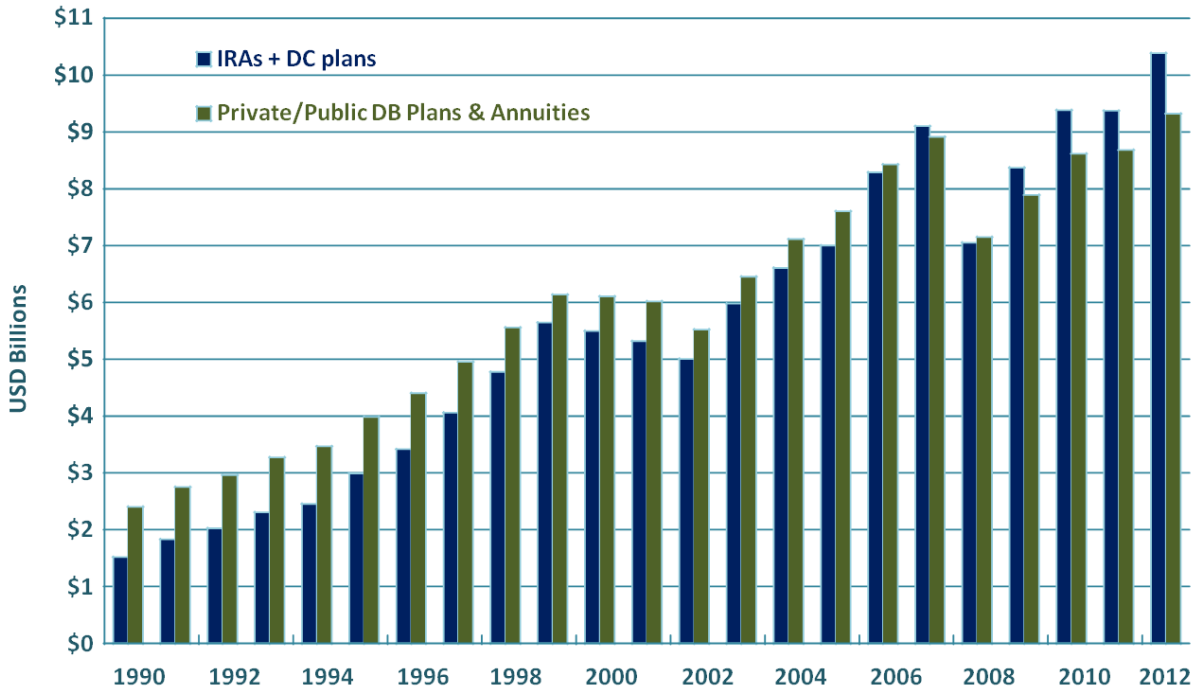
This paper is organized in the following sections: Section I lays out the challenge of individual investing, including its triumph and its tragedy. Section II outlines the heroic approach to individual investing, including the key areas where plan sponsors and advisors are adopting lessons from other institutional investors to help individuals avoid specific pitfalls. Section III shows why institutional investors are moving toward the global investment framework for equities. Section IV examines how investors are implementing the global investment framework, showing how to improve target date funds, model portfolios, and core fund lineups through simple index-based approaches that, when added together, represent the full global investment opportunity set. Section V offers a conclusion and implications for plan sponsors and advisors.

Section I – The Individual Investor Challenge

The Triumph of Individual Investing

The age of the individual investor is upon us. While institutions around the globe—sovereign wealth funds, defined benefit (DB) pensions, and endowments—continue to play a prominent role in investment markets and set the standard for investment practice, the importance and visibility of individual investing has grown significantly.

Exhibit 1: US Retirement Assets (1990 – 2012)

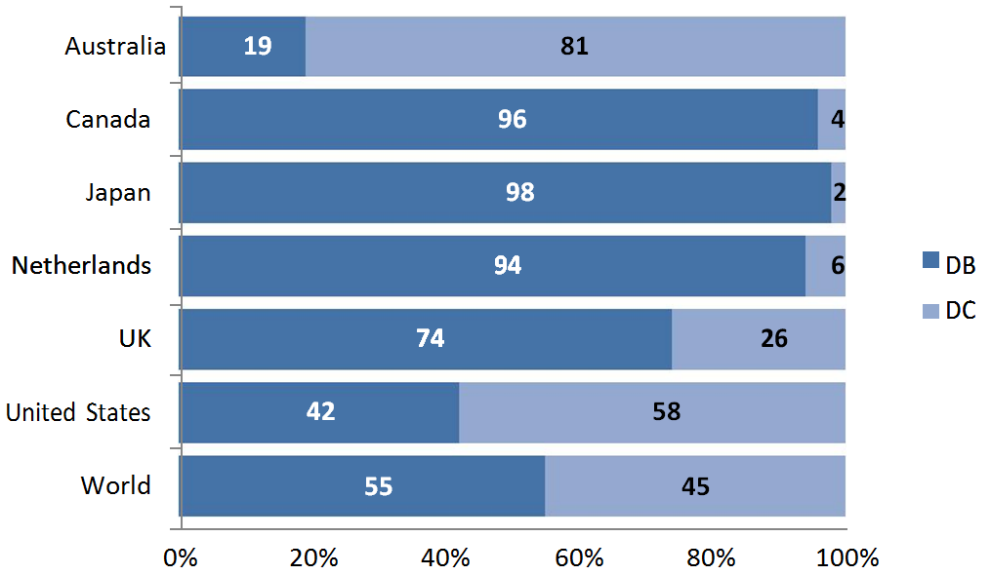


Source: Investment Company Institute

At least three major forces are driving the growing prominence of individual investing. First, defined contribution (DC) pension plans are on the rise. Defined contribution pensions, including employer-sponsored as well as independent individual retirement savings (such as individual retirement accounts—IRAs—and non-tax advantaged savings), are attractive alternatives to private sector employers facing defined benefit plan underfunding. They are also attractive to governments hamstrung by defined benefit and pay-as-you-go plan liabilities. And, in contrast to defined benefits, they are attractive to individuals who can argue that they "own" the assets in their defined contribution plans. Encouraged by national public policies in countries throughout the world, defined contribution pensions have grown as a proportion of all retirement wealth. In the US alone, individually-directed retirement assets first surpassed total defined benefit and annuity assets in 2007, growing to nearly $11 trillion in 2012, or more than half of all retirement assets.

Other countries have encouraged individual investing through major defined contribution pension legislation. Defined contribution pensions are ubiquitous among major government and private sector pensions in Korea, Thailand, Singapore and other Asian countries. Building on previous industry programs, Australia's 1992 superannuation guarantee stimulated growth in individually-directed retirement savings in that country, while in 2007 New Zealand established the "Kiwisaver" defined contribution supplemental plan. The UK inaugurated its national NEST defined contribution pension plan program in 2006, and Denmark and Sweden are also notable for their national defined contribution pension plans. In Latin America, Chile led the way in using defined contribution pensions as the core national retirement plan and other Latin American countries have followed suit.

Exhibit 2: Defined Benefit Plan vs. Defined Contribution Plan in Selected Countries (2012)



Source: Towers Watson

Second, despite the recent global recession, households in many countries around the world save more than in the US (where 3.5% of disposable income was saved in 2011).[1] At the top of heap, China is now not only the world's second largest economy, but its households in aggregate save more than their US

[1] Organization for Economic Development, 2013. It should be noted that it is difficult to make comparisons among national savings rates.

counterparts (approximately $3 trillion versus $2.5 trillion in 2010),[2] at a much higher rate (over 35% of income), and have been doing so for many years. Savings rates are also high in India, Turkey, and many other developing countries. The result of this long-term trend is a large increase in individually-directed assets in many countries.

Third, individual investing has been affected, not just by the overall growth of income and wealth, but also by their distribution. While investing styles and asset allocation varies among countries, individual ownership of equities, mutual funds, and other securities is heavily weighted toward those in the upper income, upper wealth categories. In recent years, income and wealth gains have largely accrued to those same categories, enhancing the investment ability of those in the upper brackets. As a result, individual wealth management has become an increasingly influential part of the investing landscape.

The result of these trends is a sea change in many countries as individuals are increasingly responsible for their own lifetime financial security. The question that many have asked is whether individuals are equipped for that responsibility.

The Tragedy of Individual Investing

In fact, individuals generally do not do as well as institutions when it comes to achieving long-term financial security. Although investors in all categories have struggled in recent years as market declines and low interest rates have eroded funding ratios, individuals have been more likely than institutions to be "underfunded," if we define underfunded in terms of individual lifetime financial security. Moreover, few individual investors are aware of just where they stand when it comes to their personal funding status. Those who are aware overwhelmingly report that they are inadequately funded for retirement (Natixis Global Asset Management, 2012; Mercer, 2009). Moreover, most don't really have any idea of how to begin to fix the problem (TIAA-CREF, 2010).

Academic research also paints a negative picture of individual retirement savings adequacy. While total global household savings have risen in many developed countries, led by the US, savings rates have declined over the last several decades (ECB/OECD, 2004). In the US, research on lifetime savings and investments is projecting that baby boomers are likely to live less well in retirement—relative to their current working income—than their parents and that a majority of tomorrow's retirees will live primarily on Social Security payments and whatever labor income they can continue to earn (Butricia et al., 2011). Research also suggests that the problem may only get worse, as tomorrow's retirees are less likely to be covered by a defined benefit plan. In contrast, in some other countries, notably Australia, Canada, Brazil, Chile, the Netherlands, Denmark, Sweden, Norway, and China, retirement savings adequacy is already good or is improving (Australian Centre for Financial Studies and Mercer 2013). But even in some of these countries there is a gap between current resources and future needs. In many countries, individuals will need to adjust their spending to a more limited resource outlook that may not include full inflation protection, for example.

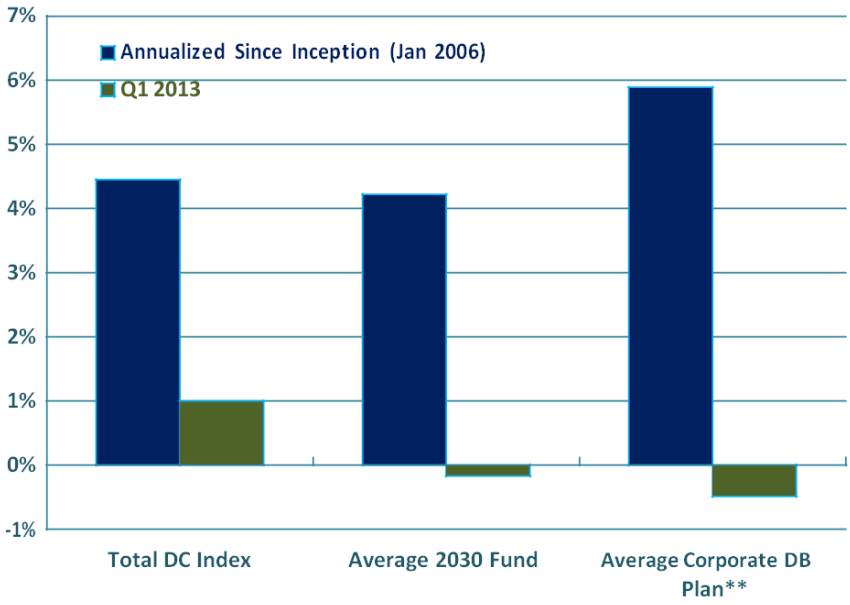
Analysts have offered a number of reasons for the poor outcomes projected for many individuals. These include lower savings rates, ranging from almost nonexistent among those at the bottom of the household income scale to low, even among those with higher incomes (Ameriks and Mitchell, 2008); higher fees paid by individual investors in defined contribution pension plans and retail investments that eat into returns (Bauer et al., 2010); poor asset allocation and fund selection (Iyengar, 2010); various

[2] International Monetary Fund; World Development Indicators of the World Bank; United Nations System of National Accounts. It should be noted that it is difficult to make comparisons among household savings rates because of differences among countries in (1) consumption of government services (2) ratio of income taxes versus taxes on production (e.g., VAT) and, most of all, (3) the ratio of public to private pension schemes (ECB/OECD 2004). For example, the latter component effectively lowers the household savings rate in the U.S. relative to many other countries.

"money," "wealth," and "return" illusions (Madrian et al., 2012; Bodie, 2008); generational changes in the attractiveness of various asset classes (Ameriks and Zeldes, 2004); cashing out pension balances prematurely (Poterba et al., 1999); and underinvesting in guaranteed retirement income (Beshears et al., 2012; Brown et al., 2008). Many individuals exhibit more than one of these behaviors simultaneously.

In any event, one result that has been well documented is the contrast in returns between individually-directed investments and institutionally-directed investments. Exhibit 3 shows average annualized returns for three types of investments: (1) individually-directed defined contribution accounts; (2) 2030 target date funds where allocations and fund choices are determined by professional investment managers and (3) corporate defined benefit plans.

Exhibit 3: Defined Contribution (DC) and Target Date Funds vs. Defined Benefit (DB) Performance



Source: Callan Associates

Individuals, whether through poor asset allocation, fund selection, or other suboptimal behaviors, persistently underperform institutional investors. More important, many analysts predict that a significant proportion of the next generation of retirees will face income reductions in comparison to what they were accustomed to during their working lives (Butrica et al., 2011). This is the tragedy of individual investing where we might ask how so many things could go wrong for individuals at the same time.

Section II – The Heroic Approach to Individual Investing

In fact, the tragedy of individual investing could be laid to an inappropriate mental model that has grown to dominate individual investor thinking, and that only recently has begun to change. We could call it the *heroic approach,* which is composed of at least four basic investment myths that can be examined in contrast to prudent institutional investment practices. In each case, the heroic approach diverges from the prevailing approach taken by institutional investors when addressing similar investment challenges.

Returns and Wealth over Savings and Income

Institutional investors and wealth managers commonly start the investment process by assessing the future obligations or income needs of an institution or client. They will examine the form of required payments or income streams and the contributions that may be needed to fuel the investments intended to meet these obligations. In contrast, when left to their own devices individual investors are more likely to focus on maximizing wealth through asset returns as the key to future financial happiness and security. The critical issue here is that individuals who focus on returns and wealth don't typically take the time to figure out what savings might be needed to achieve their future goals and how wealth accumulation translates into future income (Brown et al., 2008; Beshears et al., 2012). This peculiar form of money or wealth illusion makes it hard for them to address how much they need to save, how much wealth is enough and whether the wealth they have at retirement will or won't last through the rest of their lifetime.

You Are Your Own Best Investment Manager

Institutional investors will often rely on a variety of internal and external sources of expertise and advice for help in assessing the investment environment and in making key decisions. These might include analysis and views on the macroeconomy and the markets, goal assessment, asset allocation option analysis, manager selection, and performance evaluation. While defined contribution plan sponsors and wealth managers increasingly recognize that individuals cannot be expected to succeed on their own, practices remain inconsistent. On the one hand, 56% of US defined contribution plans now enroll new employees automatically and 78% of such plans offer target date funds as a default investment option (Aon Hewitt, 2011). On the other hand, the use of self-directed brokerage windows continues to grow, from 18% of all defined contribution plans in 2007 to 29% in 2011.

Stick Close to Home

A major investment trend among institutions is diversification, or investing away from the institution's home country or only in the largest capitalization stocks to include a more universal set of investment opportunities.[3] In contrast, while there has been an important movement toward greater diversification, individual investors are much more likely to invest in what they "know." What they "know" can have several dimensions, including but not limited to time (what was the best performing asset class last quarter or last year?) and geography (home country bias). For example, surveys of defined contribution plans in the US show the most common equity "core" funds offered by plan sponsors are large cap domestic equities, small cap domestic equities, international equities and, increasingly REITs (Aon Hewitt, 2011). Unsurprisingly, these are also the asset classes that attract the most individual allocations (Vanguard, 2013).

The "Hot Fund" is the Key to Outperformance

Much of what underlies investment product advertising is that, with a lot of funds to choose from, individual investors believe they can find the "best-of-breed" fund or funds that will produce outsized returns. Institutional investors know that it is very hard to find funds that consistently and persistently outperform the market. A prominent fund rater's research shows that ratings systems can recognize past performance, but can't predict it (Phillips, 2010). In other words, the most accurate thing that can be said about a 5 star fund is that it soon won't be. Its relative performance is very likely to drop

[3] The examples here focus on equities, but can include other asset classes. For example, since 2000, government bond returns and low volatility made this asset class attractive during periods of equity market turmoil. Institutional investors have diversified away from bonds into equities while many individual investors have lagged this trend.

following its peak performance (Phillips, 2010). Instead, expenses are the most important factor in explaining relative fund performance (Wermers, 2000). However, individual investors systematically ignore expenses when considering fund choices, even when expenses are often the *only* difference in historical returns (Madrian et al., 2012). Institutional investors are increasingly turning toward lower-cost passive funds that aim to track rather than outperform their benchmarks. By using passive funds for a portion of their portfolio, an investor who is also interested in active investing can focus on the much smaller number of active funds that are more likely to outperform (Kang et al., 2011).

It is a heroic task for investors hoping to attain financial security to do so largely on their own. It is also heroic to substitute the relatively murky goal of "building wealth" for what is really the ultimate objective—providing for future income and other spending needs. It is almost equally heroic for an individual to believe that they have covered the entire waterfront or universe of investment choices by investing in funds without examining what portion of the appropriate investment universe they truly cover and what it costs them for that investment. In fact, the heroic approach contains the very dangers that lead to the tragedy of individual investing, namely poor decisions and inadequate outcomes.

Beyond the Heroic Approach

Over the past few years, leading defined contribution plan sponsors and wealth management advisors have begun to adopt a variety of institutional investment best practices that encourage individuals to move beyond the heroic approach. For example, a recent analysis of the EBRI/ICI database (covering 47% of all US 401(k) participants in over 64,000 employer-sponsored 401(k) plans, representing 44% of all 401(k) plan assets) indicates that 72% of these plans now offer target date funds (VanDerhei et al., 2012). Allocations to target date funds grew significantly in the past decade from nearly zero to a total of 13% of all 401(k) assets in 2011. In 2011, participants in their 20s allocated over 40% of their assets to target date funds. In addition, an increasing proportion of the largest plans and plan participants enjoy automatic plan enrollment, a minimum contribution rate, and a default investment fund, usually a target date fund (Vanguard, 2013). Finally, the use of managed accounts, investment advice, and the use of lower-cost passive index funds is on the rise among plan sponsors and independent advisors (VanDerhei et al., 2012). While the largest plans and advisors and the youngest investors are leading the way in adopting many of these features, there is evidence that their use continues to spread.

If defined contribution plans and wealth managers are largely responsible for progress in moving beyond the heroic approach, what additional elements might plan sponsors and advisors consider adopting from the world of institutional investing?

An important and currently underutilized tool in DC plans are high-quality equity indexes that can be used more explicitly than they are now to improve individual investors' investment processes and potentially even their outcomes. Plan sponsors and wealth managers can use indexes to (1) adopt a global investment framework that can help provide individuals with access to a full set of investable opportunities around the world and (2) select and evaluate target date and core funds that avoid "benchmark misfit," such as unintentional gaps and overlaps that can hurt individual portfolio performance.

Section III – The Global Investment Framework

Financial benchmarks have existed for over a century—at least in some form. However, over the past 40 years critical advances in index practice have encouraged institutional investors to increase their reliance on indexes as the common link and basis for the most important practical steps in the investment process. In particular, an investable benchmark is a practical tool used by investors at every

stage of the investment process, including (but not limited to) policy portfolio creation, asset allocation, fund selection, and performance evaluation.

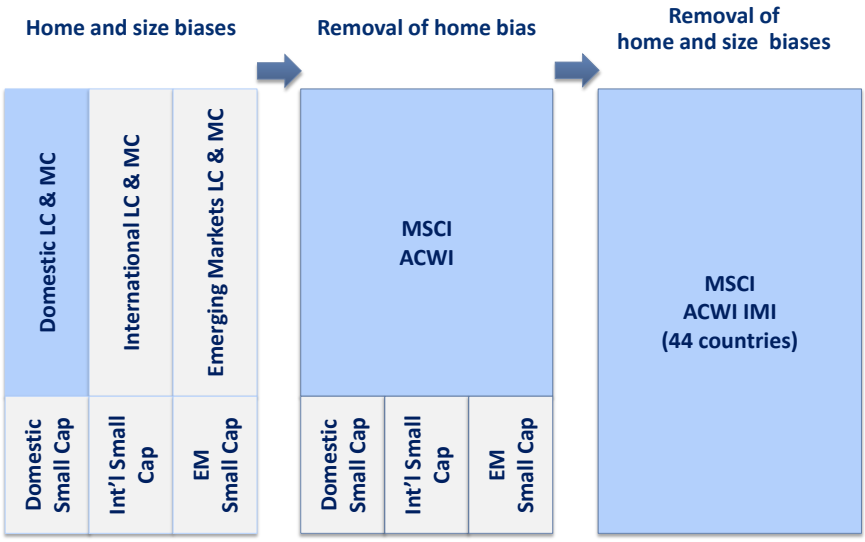
The Global Investment Framework

Benchmarks or indexes are essential tools that can be used to avoid some of the most common problems that plague investors, namely under-diversification, overlapping investments and benchmark misfits. To do this, defined benefit plan sponsors and other institutional investors are increasingly starting with a comprehensive global investment framework; they are moving away from initial home country and larger-cap stock biases to a strategic position that encompasses the broadest set of investable equities. The idea behind the framework is that the global investment opportunity set enables investors to take advantage of returns wherever they might appear as well as diversification benefits arising from less-than-perfect correlations across regions, countries, sizes, sectors, and styles. Passive investors who adopt the global framework can access these benefits automatically while active investors can increase the range of options for making decisions.

A large body of research and evolving practice underscores this visible trend in the institutional world. The potential benefits of global investing are grounded in modern portfolio theory—in particular the Capital Asset Pricing Model (CAPM).[4] The CAPM (which originally covered only domestic assets) was quickly extended to an international version of the framework, the International CAPM (I-CAPM).[5] According to the I-CAPM, in an efficient and integrated world capital market, the global market portfolio would replace the domestic market portfolio, implying that domestic allocations should not exceed the relative country share in the global market portfolio. Since the mid-1970s, broad global indexes such as the MSCI World Index (developed markets only) and later, the MSCI ACWI Index (developed and emerging markets beginning in 1987), have been used as proxies for the global market portfolio.

Exhibit 4 illustrates the trend toward the global investment framework where an investor might start with a policy portfolio or strategic allocation consisting of domestic large and mid cap equities.

Exhibit 4: Evolution of the Global Investment Opportunity Set



[4] Markowitz, 1952.

[5] Adler & Dumas, 1983; Solnik, 1977; Stulz, 1981; Wheatley, 1988.

In the US, the MSCI USA Index, which contains about 600 securities, exemplifies this approach. At this stage, actual investments such as funds or ETFs would be benchmarked to this index or a related sub-index (e.g., the MSCI USA Value or MSCI USA Growth Indexes).

The investor might then realize that this index lacks exposure to most of the world's equity securities and choose to broaden the opportunity set by adding the MSCI EAFE Index (with 900 stocks from developed markets countries around the world excluding the US and Canada), the MSCI Canada Index (with 95 stocks), and the MSCI Emerging Markets Index (with close to 800 stocks) to the MSCI USA Index; taken together, these indexes comprise the MSCI ACWI Index. Finally, the investor might recognize the advantages of moving even more broadly to include global small cap stocks, which are among the 8,400 securities in MSCI ACWI IMI.

In this example, the MSCI ACWI IMI and MSCI ACWI Indexes are truly global indexes that exemplify the global investment framework, with the difference being that the MSCI ACWI Index does not include global small cap stocks. Other important features of these indexes are that they are decomposable and recomposable. Either can be broken down into component indexes, by broad market (e.g., MSCI Emerging Markets), region (e.g., MSCI Asia Pacific), country (e.g., MSCI USA or MSCI Korea), sector (e.g., MSCI USA Consumer Staples), size (e.g., MSCI USA Large Cap) and style (e.g., MSCI USA Value). In turn, the component indexes can all be added together to produce the overall MSCI ACWI (or MSCI ACWI IMI) Index. In other words, there are no gaps or overlaps in coverage. None of the indexes that comprise MSCI ACWI IMI overlap with any other piece and the overall index covers all of the pieces.

Moreover, the overall global index and its component pieces share a common methodology so that key features, definitions, and rules governing the creation and maintenance of each index are the same. These include rebalancing schedule, coverage, country classification, free float, size categories, buffers, and many other rules that promote consistency, lower cost, and increase benchmark quality.

But the key insight made by many institutional investors is that by *starting* with the global investment framework rather than a narrower home-country and size bias, they have a view of all of the investable stocks in the world, as well as regions, sizes, sectors and styles. A large body of research and evolving practice underscores this visible institutional trend toward adopting a global investment framework (MSCI, 2012; Subramanian et al., 2009).

To illustrate the actual historical return and diversification characteristics of the global investment framework as opposed to narrower cuts, Exhibit 5 shows the average annualized returns over a 15-year period for four indexes—MSCI ACWI IMI (large, mid, and small cap stocks in developed and emerging markets countries); MSCI ACWI (i.e., MSCI ACWI IMI without the small cap component); MSCI USA (large and mid cap stocks in the US); and MSCI EAFE (large and mid cap stocks in developed markets countries excluding the US and Canada). It also includes the 15-year annualized return for an equal-weighted combination of the MSCI USA and MSCI EAFE Indexes.

Exhibit 5: Return and Risk across Different MSCI Equity Indexes (1998 – 2012)

	ACWI IMI	ACWI	EAFE	USA	50% USA + 50% EAFE
Returns*	6.55%	5.94%	5.89%	5.25%	5.46%
Risk*	16.93%	16.69%	17.83%	15.82%	16.08%
Return/Risk	0.39	0.36	0.33	0.33	0.34

**Annualized*

Over the 15-year period, the MSCI USA Index reflected the US bull market of the late 1990s as well as in 2002-2007. However, deep downturns in 2000 and 2008 reduced the long-term return to just over 5% per year. Instead, a balanced allocation of 50% MSCI USA and 50% MSCI EAFE would have slightly outperformed the domestic-only MSCI USA Index. Going even further, the global large and mid cap

index (MSCI ACWI) or the same index plus small cap stocks (MSCI ACWI IMI) both experienced better returns and better risk-adjusted returns than both the MSCI USA and MSCI EAFE Indexes as well as the 50/50 MSCI USA/EAFE combination.

A similar story can be told for high-growth economies, which are mostly located in emerging markets countries. Research shows that high economic growth has a weak and inconsistent link with equity returns (Chia and Ho, 2013). Moreover, the volatility of equity returns in high-growth countries can turn against investors with a prominent home country investment bias. Instead, as shown in Exhibit 6, combining a home country index with a regional or global index has historically improved risk-adjusted returns.

Exhibit 6: Risk Reduction and Return/Risk Improvements Resulting from Decreasing a Home Bias and Adding a Global Equity Allocation (1990 – 2010)

High Growth Countries	Changes in Risk				Changes in Return/Risk			
	100% ACWI	25% Local 75% ACWI	50% Local 50% ACWI	75% Local 25% ACWI	100% ACWI	25% Local 75% ACWI	50% Local 50% ACWI	75% Local 25% ACWI
China	-56%	-47%	-34%	-18%	173%	123%	70%	29%
Hong Kong	-49%	-41%	-30%	-16%	-4%	6%	6%	3%
India	-54%	-48%	-35%	-18%	6%	18%	14%	7%
Indonesia	-14%	-34%	-39%	-25%	13%	49%	61%	32%
Korea	-13%	-34%	-39%	-25%	-7%	30%	49%	28%
Malaysia	-21%	-35%	-35%	-21%	9%	37%	43%	23%
Philippines	-48%	-47%	-36%	-20%	26%	40%	30%	14%
Singapore	-44%	-39%	-29%	-15%	5%	13%	11%	6%
Taiwan	-46%	-40%	-30%	-16%	63%	52%	33%	15%
Thailand	-35%	-45%	-39%	-23%	20%	50%	47%	22%
Czech Republic	-11%	-22%	-24%	-16%	-50%	-25%	-5%	2%
Egypt	-59%	-50%	-36%	-19%	-14%	4%	5%	3%
Ireland	-24%	-23%	-18%	-10%	154%	120%	79%	37%
Israel	-27%	-26%	-21%	-12%	14%	19%	16%	9%
Poland	-89%	-70%	-47%	-23%	76%	29%	12%	4%
Russia	-18%	-35%	-37%	-23%	-31%	4%	24%	16%
South Africa	2%	-12%	-18%	-13%	-33%	-13%	2%	6%
Turkey	-64%	-55%	-39%	-20%	78%	61%	34%	14%
Brazil	-32%	-24%	-16%	-8%	-6%	-4%	-2%	-1%
Chile	-48%	-46%	-35%	-19%	-18%	5%	9%	5%
Colombia	-42%	-51%	-43%	-24%	-11%	29%	33%	16%
Mexico	-26%	-35%	-33%	-20%	-19%	8%	19%	12%
Peru	-31%	-34%	-28%	-16%	-37%	-13%	0%	3%
Average	-37%	-39%	-32%	-18%	18%	28%	26%	13%

Source: MSCI

Countries in italics are commonly perceived as high growth countries but fail the high growth country definition of this paper

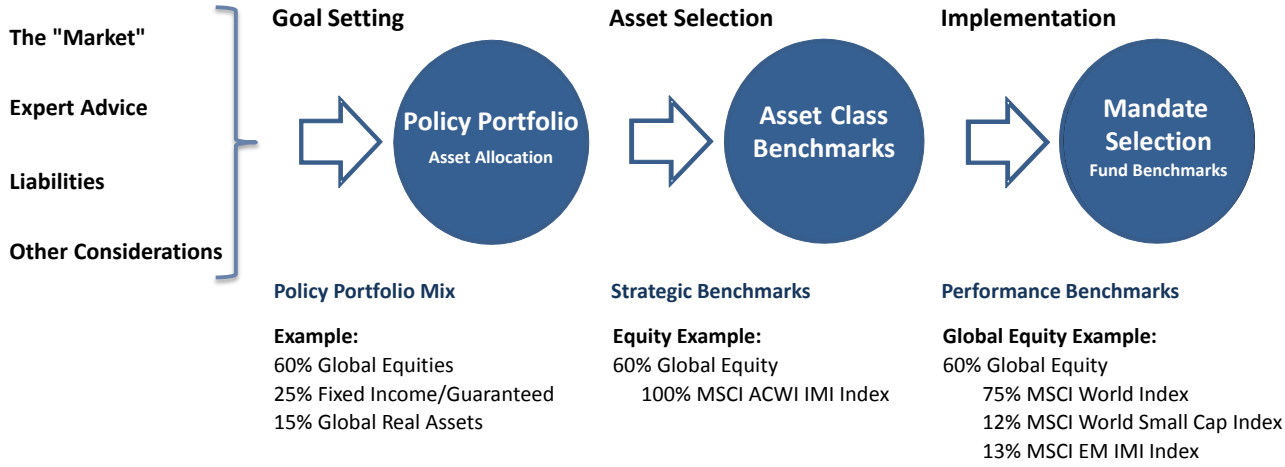
Note: High-growth countries are defined as those in which GDP growth has exceeded 0.5 standard deviations from the average growth of all developing countries.

Section IV – Implementing a Global Investment Framework with Target Date Funds and the Core Fund Lineup

Prompted by regulatory changes, common sense, and institutional experience, defined contribution plans and wealth managers are increasingly adopting the notion of an investment process that is driven by the goal of achieving an adequate retirement income (as well as other goals such as charitable or family bequests). As is common in institutional investing, the use of indexes is critical to this process, representing the specific asset allocation and fund mandate decisions that have been made and for evaluating the results.

Specifically, indexes are tools that can be used at nearly every stage of a robust investment process, as illustrated in Exhibit 7. While this illustration is drawn from institutional experience, it applies easily to defined contribution plans and wealth management.

Exhibit 7: The Investment Process

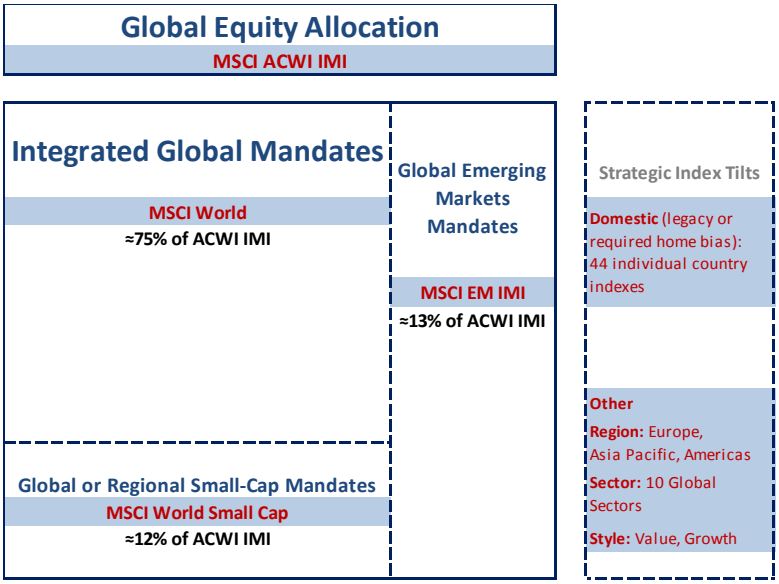


Note that in this example, the plan sponsor or wealth manager creates an overall asset allocation mix that reflects 1) long-term goals such as creating future retirement income, 2) expert knowledge including the historical behavior of various asset classes, and 3) expectations about future markets. The sponsor then selects strategic benchmarks that embody the overall asset allocation in the chosen policy portfolio. In this case, the overall equity index or benchmark is the global opportunity set, or MSCI ACWI IMI. To guide fund selection the sponsor or wealth manager chooses specific fund benchmarks that add up to the overall strategic benchmark.

Fund Selection and Target Date Fund Construction

In this case, the global index is divided into bite-size pieces, i.e., individual indexes, which can be used to define specific mandates. In fact, institutions are increasingly adopting equity mandates that closely resemble Exhibit 8.

Exhibit 8: The Global Equity Allocation

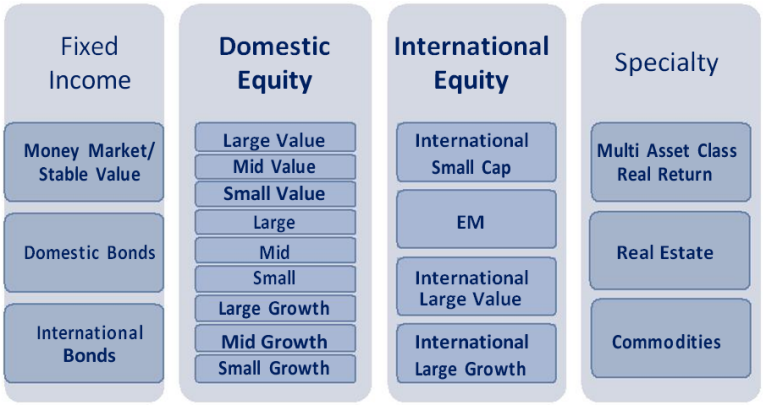


Note: Weights are index market capitalization weights in MSCI ACWI IMI as of October 2012

In Exhibit 8, we see that the global equity universe (as represented by MSCI ACWI IMI) is divided into three large pieces: a global index of large and mid cap stocks in developed markets (e.g., the MSCI World Index), a global developed markets index for small cap stocks (e.g., the MSCI World Small Cap Index) and a global emerging markets index (e.g., MSCI Emerging Markets IMI). Investors are free to divide the universe even further into smaller pieces, but the point is that individual indexes can be summed together to get the global equity universe, or the overall starting point for making sure that the fund options offer exposure to the full global opportunity set.

For defined contribution plans and wealth management advisors, a similar question is where to start? We know that over the past few years the trend among plan sponsors and many advisors has been to recast the fund lineup into three tiers. The first two tiers may consist of (1) default target date funds or model portfolios that reflect a variety of asset classes with weightings that change as the individual investor ages and (2) a core set of funds or mandates—twenty or less—that an individual investor can select from with advice on how to create a diversified portfolio. The third tier might be a brokerage window or much expanded list of funds that can be used to construct a truly personalized mix. Exhibit 9 illustrates a "typical" recommended fund or mandate lineup from a major provider.[6] These funds or mandates can be used for either of the first two tiers of a plan lineup.

Exhibit 9: Defined Contribution Investment Universe



Source: Fidelity Investments

Looking specifically at the equity portion of the investment mandates, it may appear that most or all of the global equity universe is represented. However, actual portfolios chosen by plan sponsors and advisors for target date funds and model portfolios do not always follow the global investment framework weights and often exhibit substantial deviations relative to the global market capitalization weights. In fact, the typical fund lineup may have a home country bias, misspecify the international equity universe, and reflect overweights driven by the availability of funds on the platform rather than conscious investment views. Such fund lineups can contain significant gaps and overlaps relative to a true global index.

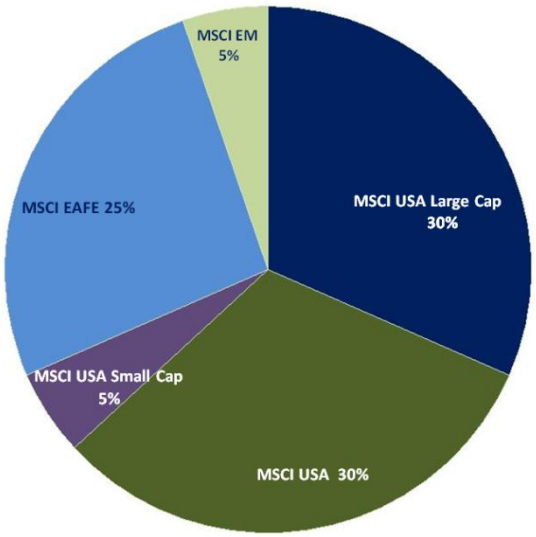
Gaps and Overlaps

For example, Exhibit 10 shows a mix of equity indexes that might be representative of an actual equity fund lineup or the equity portion of a target date fund or model portfolio. Like many portfolios, it contains more than one domestic US index, the well-known MSCI EAFE Index, and the MSCI Emerging

[6] Core fund lineups and target date fund allocations vary widely. Over the past few years, allocation practices for many DC plans have moved toward a more compact set of core funds in the 15-20 range (VanDerhei et al., 2012).

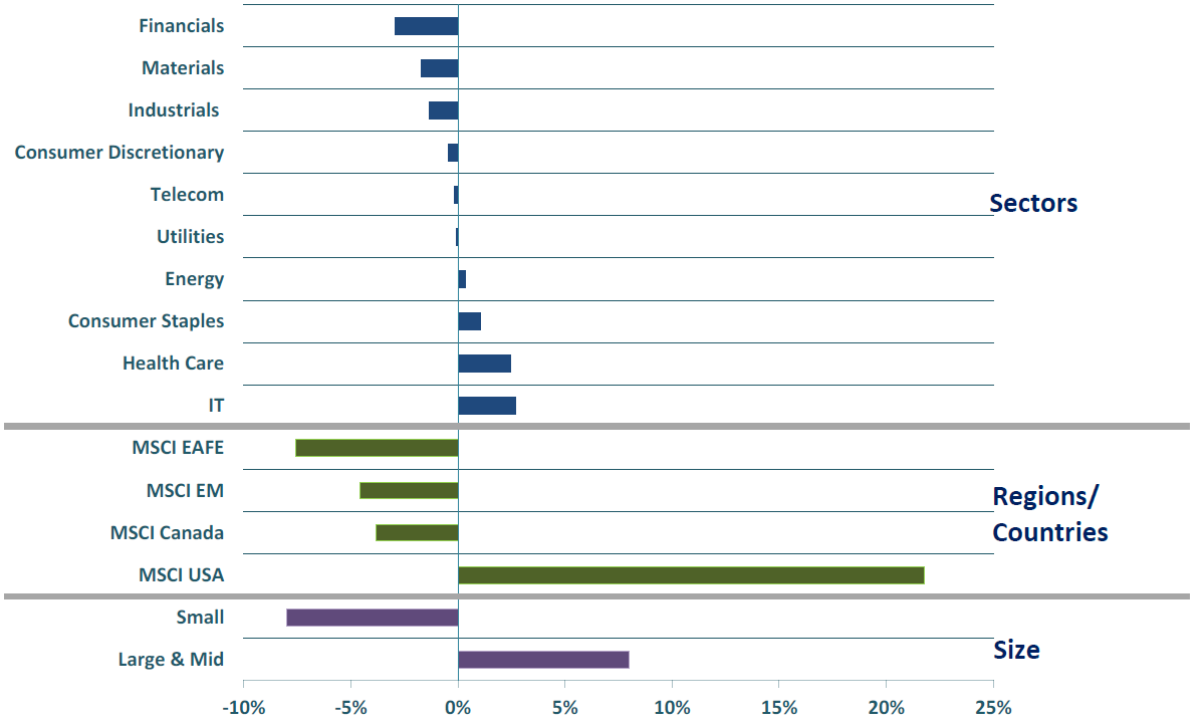
Markets Index. While this mix appears to be broadly representative, it has significant gaps and overlaps when compared to a truly global index. For example, the "gaps and overlaps" mix in Exhibit 10 includes a little over 4,000 securities, while the global MSCI ACWI IMI comprises over 8,400 investable stocks. In addition, MSCI ACWI IMI covers more than 10% additional market capitalization.

Exhibit 10: Gaps and Overlaps in an Equity Lineup Mix



Finally, in comparison with the global index, the gaps and overlaps mix displays significant unintended bets (in terms of sector, country, and capitalization overweights and underweights), as shown in Exhibit 11.

Exhibit 11: Unintended Bets in the Gaps and Overlaps Mix (in comparison to MSCI ACWI IMI)



Weights as of September 30, 2013

In comparison to the global index, the gaps and overlaps mix is underweight some sectors, such as financials and materials, and overweight others, such as information technology and health care. Reflecting the presence of funds based on multiple US indexes, the mix is more than 20% overweight in domestic US equities. And it is underweight global small cap stocks and overweight large and mid cap stocks. In effect, these allocations represent *active bets* that a plan sponsor or advisor may not intend to impose on individual investors.

Benchmark Misfit

As such, the gaps and overlaps mix displays what we might call a "benchmark misfit," which may be accompanied by uneven performance that can undermine an individual's ability to achieve long-term investment goals.

Exhibit 12: Comparing Performance (1971 - 2012[7])

	Gaps & Overlaps	Global	Gaps & Overlaps - Global
1971-1973	7.2%	8.1%	-0.9%
1974-1976	5.8%	5.2%	0.5%
1977-1979	8.7%	10.8%	-2.1%
1980-1982	12.7%	11.2%	1.5%
1983-1985	22.3%	22.7%	-0.4%
1986-1988	20.9%	27.4%	-6.5%
1989-1991	14.7%	5.6%	9.1%
1992-1994	8.0%	7.9%	0.1%
1995-1997	21.8%	13.4%	8.4%
1998-2000	10.1%	9.4%	0.7%
2001-2003	-2.4%	-1.6%	-0.8%
2004-2006	13.5%	16.8%	-3.3%
2007-2009	-3.9%	-3.9%	0.0%
2010-2012	8.5%	7.6%	0.9%

Annualized returns over three year periods.

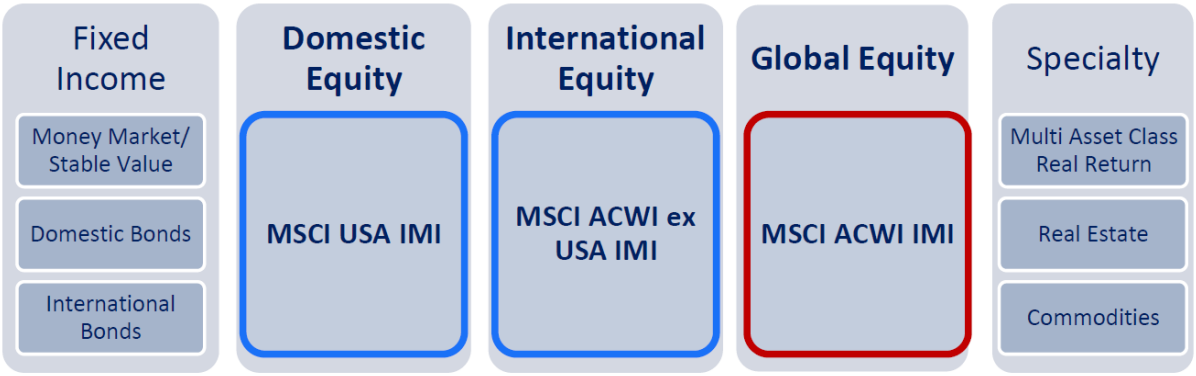
Exhibit 12 divides historical performance into three-year periods from 1971 to 2012. The first two columns show total annualized returns for the gaps and overlaps mix and the global index, respectively. The third column shows excess annualized returns for the gaps and overlaps mix compared to the global index. The third column shows that the gaps and overlaps mix performance fluctuated over time. It outperforms in some periods and underperforms in others. However, for the most recent ten-year period, the gaps and overlaps mix underperformed by an average of one percent per year. This is an example of benchmark misfit, where the gaps and overlaps mix gave investors a very different experience. For example, a new or experienced participant in a defined contribution plan might observe the outperformance of a target date fund or model portfolio based on the gaps and overlaps mix from 1995 to 2000. If so, then he or she might choose to add significant capital beginning in 2000, only to experience more than ten years of underperformance relative to the global index.

[7] Available indexes are used to construct the global and the gaps and overlaps mixes. The Global Mix incorporates the MSCI World Index from 1969-1987, MSCI ACWI from 1988-1994 and MSCI ACWI IMI from 1995-2012 to reflect the growth of the global opportunity set. The Gaps & Overlaps Mix is 70% MSCI USA, 30% MSCI EAFE from 1969-1987, 70% MSCI USA, 25% EAFE and 5% EM from 1988-1994, and 30% MSCI USA Large Cap, 30% MSCI USA, 10% MSCI USA Small Cap, 25% EAFE and 5% EM from 1995-2012. Portfolios are rebalanced annually in December.

Sample Equity Index Mixes

Defined contribution pension plans and wealth management advisors can adopt a simple equity index mix that easily avoids benchmark misfits, gaps and overlaps, and gains access to the global investment opportunity set. Exhibit 13 shows two of the simplest possible equity index mixes that would cover the full global equity universe. These examples might apply especially in cases where the sponsor or advisor can build an entirely new portfolio mix without needing to consider any previous fund lineup. We could think of each of them as single funds based on indexes or as representing a comprehensive fund-of-funds.

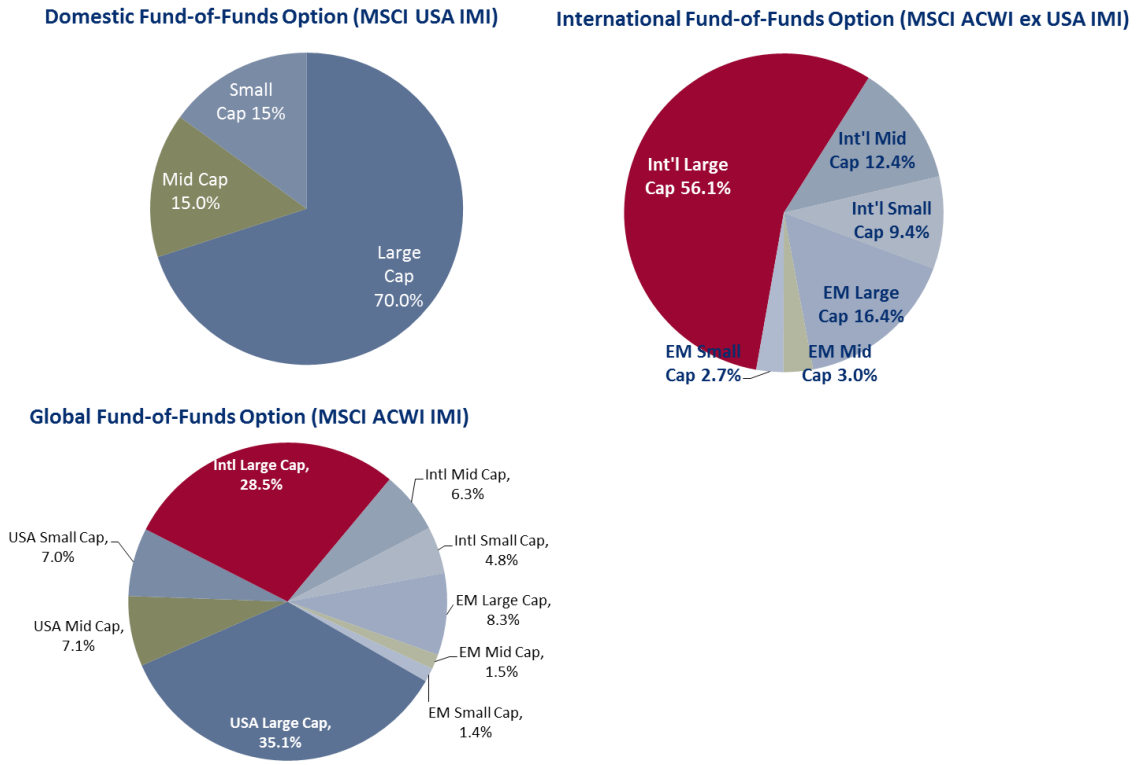
Exhibit 13: Sample Equity Index Mix #1, Comprehensive Fund-of-Funds Option



The simplest approach of all would be to adopt a single index that represents the full global equity investment opportunity set: MSCI ACWI IMI, which is outlined in red. The plan sponsor or advisor could, instead, choose to represent the full universe with two indexes, one domestic and one international, which are outlined in blue and together add up to the global index, with no gaps, overlaps or benchmark misfits.

Each of these options is also a sort of fund-of-funds with multiple subcomponents that sum up to their respective parent index. As shown in Exhibit 14, the domestic index could be divided into three subcomponent indexes—the MSCI USA Large Cap, MSCI USA Mid Cap, and MSCI USA Small Cap Indexes.

Exhibit 14: Subcomponent Weights of the Comprehensive Fund-of-Funds Options



Weights as of September 2013

The international index could be divided into six subcomponent indexes.[8] In each case, they would be represented according to the weights in the parent indexes: MSCI USA IMI and MSCI ACWI ex USA IMI.

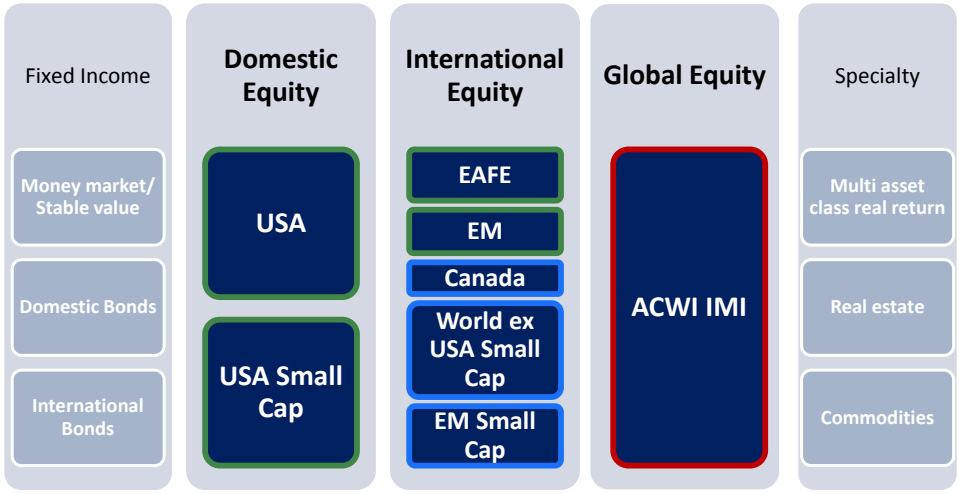
Each of the subcomponent indexes could correspond to a single fund that is part of a broad core fund lineup or a target date fund. For example, the domestic US component could include a large cap fund, a mid cap fund, and a small cap fund, each of which is based on the appropriate index. The relative weights of the subcomponent funds could be maintained based on their weights in the domestic or international or global parent index (through the use of a target date fund or a model portfolio). Such a mix would simplify the fund lineup as well as allow the sponsor or advisor to replace individual fund managers without disrupting the overall asset mix.

Regardless of which approach a plan sponsor or advisor adopts, any of these options would enable the sponsor or advisor to offer a mix that is broader and more comprehensive than the typical fund lineup, but with easily identifiable and decomposable subcomponents that provide the diversification, return, and risk benefits of the global opportunity set.

Another simple approach to an index mix might apply in cases where there is already an equity fund lineup in place.

[8] There are many more ways to divide a parent index. Divisions include styles, countries, and sectors in addition to sizes and regions.

Exhibit 15: Sample Equity Index Mix #2, EAFE Completion Option

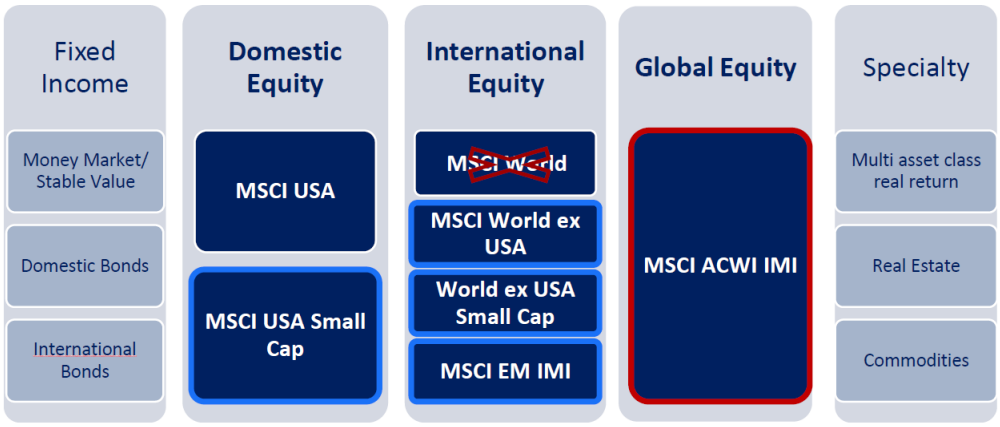


In Exhibit 15, a sponsor or advisor might begin with an equity lineup based on two domestic indexes—the MSCI USA Index (covering large and mid caps) and the MSCI USA Small Cap Index—and two international indexes: the MSCI EAFE Index and the MSCI Emerging Markets Index. In Exhibit 15 these are outlined in green.

While this initial mix may be fairly typical, it leaves out broad swaths of the equity universe as represented by the global index (once again outlined in red), so it suffers from overlaps, gaps, and benchmark misfit. As a remedy, the plan sponsor or advisor could add a Canada index (MSCI Canada) and the international small cap index (MSCI World ex USA Small Cap) to the mix. As a result, the component pieces will add up to the global parent while enabling the sponsor or advisor to offer funds that supplement popular funds already found in the lineup rather than duplicating them.

In this same vein, the third sample equity mix starts with a fund lineup represented by a large and mid cap domestic equity index (the MSCI USA Index) and an international large and mid cap equity index (the MSCI World Index) that covers all developed market regions and countries.

Exhibit 16: Sample Equity Mix #3, Eliminating Gaps and Overlaps Option



Again, while this may be a fairly common approach, it contains significant gaps and overlaps. For example, the MSCI World and MSCI USA Indexes both contain the same US stocks while both indexes leave out small cap stocks and the international index does not cover emerging markets.

By converting the MSCI World Index to the MSCI World ex USA Index, the new sample index eliminates the domestic overlap. By adding the MSCI USA Small Cap and the World ex USA Small Cap Indexes with MSCI Emerging Markets IMI (all outlined in blue), the new sample mix now covers the full global equity opportunity set and in relative weights that sum up to MSCI ACWI IMI. Once again, the sponsor or advisor could choose to implement this approach using funds that correspond to the four indexes, or they could choose funds that correspond to subcomponent indexes contained within the four broader indexes.

Section V – Conclusions

Individual investing has come a long way, but still has a way to go. Defined contribution plans and wealth management advisors are increasingly looking to institutional investing to avoid portfolio and fund investment pitfalls and adopt best practices such as the global investment framework and the use of benchmarks to assist in asset allocation, fund selection, and performance evaluation.

Deviations from the global investment opportunity set are equivalent to investment decisions favoring certain country, sector and/or size segments. Typically, these bets are not a result of investment views but unintended consequences of fund choices. Unintended bets may or may not pay off. Predicting future returns based on recent performance is usually disappointing. In sum, the global investment opportunity set naturally captures the dynamic nature of equity markets and provides the broadest possible exposure.

To implement the global investment framework, plan sponsors and advisors can employ world-class indexes to bring investment performance and diversification closer to the standard that has been set by the best institutional investors.

In a very practical way, how can investors benefit from using indexes as simple, effective tools in the investment process? Plan sponsors and advisors can construct target date funds and a core fund lineup that reflects the following considerations:

- Translate long-term goals into an overall asset allocation that starts with an investment framework and policy benchmark, such as a global approach with a broad benchmark like MSCI ACWI IMI.
- Within a broad asset class, such as equities, base the target date and core fund lineup on indexes that fit together and avoid unintentional gaps and overlaps. Three simple approaches include the comprehensive fund-of-funds option, the EAFE completion option, and the eliminating gaps and overlaps option which all move target date funds, model portfolios, and individual fund options to the global equity opportunity set. In any of these cases, individual fund selection and evaluation can be based on either the broader indexes or on the subcomponent indexes.
- Each of these approaches has several advantages: they add up to the global investment opportunity set; they avoid gaps, overlaps, and unintended benchmark misfits; and they have historically offered consistent, diversified returns and risk when compared to the typical gaps and overlaps portfolio.

Through the use of benchmarks, investors, plan sponsors, and advisors can improve their chances of selecting funds that will reflect the investors' long-term objectives similar to other institutional investors. As we have seen, plan sponsors and advisors can assist with this process in several ways, including by performing the benchmark and fund comparisons, constructing recommended portfolios with clear, well-respected benchmarks, and/or by offering target date funds that reflect these principles. Regardless of the approach, the use of simple tools such as global index mixes can help the investor and his or her advisors better reflect their investment objectives and within a long-term retirement plan.

References

Ameriks, John and Olivia Mitchell, 2008. ***Recalibrating Retirement Spending and Saving.*** New York: Oxford University Press.

Ameriks, John and Stephen Zeldes, 2004. How Do Household Portfolio Shares Vary with Age? Working paper, Columbia Business School.

Aon Hewitt, 2011. 2011 Trends and Experience in Defined Contribution Plans. http://www.aon.com/attachments/thought-leadership/2011_Trends_Experience_Executive_Summary_v5.pdf

Australian Centre for Financial Studies and Mercer, 2013. ***2012 Mercer Melbourne Global Pension Index.*** http://globalpensionindex.com/pdf/melbourne-mercer-global-pension-index-2012-report.pdf

Bauer, Rob, Martijn Cremers and Rik Frehen, 2010. Pension Fund Performance and Costs: Small is Beautiful. SSRN Working Paper 965388. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=965388

Beshears, John, James J. Choi, David Laibson, Brigitte C. Madrian and Stephen P. Zeldes, 2012. What Makes Annuitization More Appealing? National Bureau of Economic Research. NBER Working Papers 18575.

Bodie, Zvi, 2008. ***The Future of Life-Cycle Savings and Investment.*** Research Foundation of the CFA Institute. Research Foundation Publications Vol. 2007, No. 3.

Brinson, Gary P., Brian D. Singer and Gilbert L. Beebower 1991. Determinants of Portfolio Performance II: An Update. ***Financial Analysts Journal***. May/June.

Brown, Jeffrey, J. Kling, S Mullainanthan and M. Wrobel, 2008. Why Don't People Insure Late Life Consumption? A Framing Explanation of the Under-Annuitization Puzzle. ***The American Economic Review***, (98) May, 2 304-309.

Butrica, Barbara A., Richard W. Johnson and Karen Elizabeth Smith, 2011. The Potential Impact of the Great Recession on Future Retirement Incomes. Center for Retirement Research at Boston College. Working Paper #2011-9.

Chamon, Marco, Kai Lui and Eswar S. Prasad, 2010. Income Uncertainty and Retirement Savings in China. National Bureau of Economic Research. *NBER Working Paper No. w16565.*

Chia, Chin-Ping and Billy Ho, 2013. The Next Generation of Global Investors: Global Investing for Investors from High-Growth Countries. ***MSCI Research Insight.*** July.

ECB/OECD, 2004. Comparison of Household Savings Ratios. European Central Bank and Organization for Economic Cooperation and Development. http://www.ecb.europa.eu/pub/pdf/other/comparisonhouseholdsavingseuusjpnen.pdf

Elton, Edwin J., Martin J. Gruber and Christopher R. Blake, 2007. Participant Reaction and the Performance of Funds Offered by 401(k) Plans. ***Journal of Financial Intermediation.*** Vol. 16, No. 2, April.

Elton, Edwin J., Martin J. Gruber and Jeffrey A. Busse, 2004. Are Investors Rational? Choices Among Index Funds. ***Journal of Finance***. Vol. 59, No. 1, February.

Hammond, P. Brett and David P. Richardson, 2010. Retirement Saving Adequacy and Individual Investment Risk Management Using the Asset/Salary Ratio. In Olivia Mitchell and Robert Clark, ***Innovations in Retirement Risk Management***, Oxford University Press.

Investment Company Institute 1990-2013. ***Investment Company Factbook*** (multiple years).

Iyengar, Sheena, 2010. ***The Art of Choosing***. New York: Twelve.

Kang, Xiaowei, Frank Nielsen and Giacomo Facchinotti, 2011. Some Like it Hot: On the Role of Very Active Mandates Across Equity Segments in a Core-Satellite Structure. ***MSCI Research Insight***. January.

Leibowitz, Martin L. and P. Brett Hammond, 2004. The Changing Mosaic of Investment Patterns. ***Journal of Portfolio Management.*** Spring.

Leibowitz, Martin L., P. Brett Hammond, and J. Benson Durham, 2001. The Asset-Salary Ratio, 2001. In Zvi Bodie, Olivia Mitchell, P. Brett Hammond, and Stephen P. Zeldes, ***Innovations in Retirement Financing.*** Philadelphia, PA: University of Pennsylvania Press. Reprinted in Martin Leibowtiz, 2003. ***Franchise Value: A Modern Approach to Security Selection***. New York: Wiley Finance.

Madrian, Brigitte, John Beshears, James J. Choi and David Laibson, 2012. Simplification and Savings. ***Journal of Economic Behavior and Organization***. March.

Mitchell, Olivia and Steven Utkus, 2012. Target Date Funds in 401(K) Retirement Plans. Pension Research Council. Working Paper PRC WP2012-02.

MSCI, 2012. Global "All-Cap:" The New Investable Equity Opportunity Set?. ***MSCI Research Bulletin***. October.

Natixis Global Asset Management, 2012. 2012 Global Survey of Individual Investors. http://ngam.natixis.com/docs/1015/159/NGAM%20Gobal%20Indiv%20Investor%20exec%20summary%20and_%20highlights.pdfi

Organization for Economic Development, 2013a. OECD Economic Outlook. http://www.oecd-ilibrary.org/economics/household-saving-rates-forecasts_2074384x-table7i

Organization for Economic Development, 2013b. OECDiLibrary National Accounts at a Glance. Household Savings Rates. http://www.oecd-ilibrary.org/sites/na_glance-2013-en/02/05/g08-1.p1.html?contentType=&itemId=/content/chapter/na_glance-2013-10-en&containerItemId=/content/serial/22200444&accessItemIds=/content/book/na_glance-2013-en&mimeType=text/html

Phillips, Don 2010. Star Wars, the Sequel. ***Morningstar Advisor***. http://www.morningstaradvisor.com/articles/printfriendly.asp?s=&docId=20033&print=yes

Poterba, James M., Steven F. Venti and David A. Wise, 1999. Pre-Retirement Cashouts and Foregone Retirement Saving: Implications for 401(k) Asset Accumulation. National Bureau of Economic Research. NBER Working Paper No. 7314.

Subramanan, Raman Aylur, Frank Nielsen and Giacomo Fachinotti, 2009. Globalization of Equity Portfolios. ***MSCI Research Insights***. October.

TIAA-CREF, 2010. Retirement Preparedness Survey. TIAA-CREF Public Affairs.

Wemers, Russ, 2000. Mutual Fund Performance: An Empirical Decomposition into Stock-Picking Talent, Style, Transactions Costs, and Expenses. ***Journal of Finance.*** Vol. LV, No. 4, August.

VanDerhei, Jack, Sarah Holden, Luis Alonso and Steven Bass, 2012. 401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011. ***EBRI Issue Brief No. 380***. Employee Benefit Research Institute. December.

Vanguard, 2013. How America Saves 2013. The Vanguard Group.

Client Service Information is Available 24 Hours a Day

clientservice@msci.com

Americas

Americas	1.888.588.4567 (toll free)
Atlanta	+ 1.404.551.3212
Boston	+ 1.617.532.0920
Chicago	+ 1.312.675.0545
Monterrey	+ 52.81.1253.4020
New York	+ 1.212.804.3901
San Francisco	+ 1.415.836.8800
Sao Paulo	+ 55.11.3706.1360
Toronto	+ 1.416.628.1007

Europe, Middle East & Africa

Cape Town	+ 27.21.673.0100
Frankfurt	+ 49.69.133.859.00
Geneva	+ 41.22.817.9777
London	+ 44.20.7618.2222
Milan	+ 39.02.5849.0415
Paris	0800.91.59.17 (toll free)

Asia Pacific

China North	10800.852.1032 (toll free)
China South	10800.152.1032 (toll free)
Hong Kong	+ 852.2844.9333
Seoul	00798.8521.3392 (toll free)
Singapore	800.852.3749 (toll free)
Sydney	+ 61.2.9033.9333
Taiwan	008.0112.7513 (toll free)
Tokyo	+ 81.3.5226.8222

Notice and Disclaimer

About MSCI

MSCI Inc. is a leading provider of investment decision support tools to investors globally, including asset managers, banks, hedge funds and pension funds. MSCI products and services include indices, portfolio risk and performance analytics, and governance tools.

The company's flagship product offerings are: the MSCI indices with approximately USD 7.5 trillion estimated to be benchmarked to them on a worldwide basis[1]; Barra multi-asset class factor models, portfolio risk and performance analytics; RiskMetrics multi-asset class market and credit risk analytics; IPD real estate information, indices and analytics; MSCI ESG (environmental, social and governance) Research screening, analysis and ratings; ISS corporate governance research, data and outsourced proxy voting and reporting services; and FEA valuation models and risk management software for the energy and commodities markets. MSCI is headquartered in New York, with research and commercial offices around the world.

[1] *As of March 31, 2013, as reported on July 31, 2013 by eVestment, Lipper and Bloomberg*