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Determining Market-Capitalization Breakpoints

Andrew Clark

Index Variation And Portfolio Performance

Craig Israelsen

Sectors And Style

Paul Baiocchi and Paul Britt

Dynamic Correlations

Christopher Philips, David Walker and Francis Kinniry Jr.

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Index Variation And Overall Portfolio Performance

From interesting to important

By Craig Israelsen



This article outlines the performance differentials between five prominent index providers: Dow Jones, Morningstar, Morgan Stanley Capital International (MSCI), Russell and Standard & Poor's. Additionally, this article calculates the variation in performance of a multi-asset portfolio when utilizing U.S. equity indexes (large, mid and small) from the five major index providers.

As will be shown, substantial performance differences exist between indexes that claim to be measuring the same space within the U.S. equity market. Nevertheless, the performance differences among various U.S. equity indexes are largely mitigated when such indexes are utilized in a broadly diversified, multi-index portfolio.

The data utilized in this study were obtained from Morningstar Principia. The time frame of this study is the 10-year period from Jan. 1, 2002 to Dec. 31, 2011.

Large-Cap US Equity Indexes

We start with large-cap blend (blend indexes are typically described as indexes where neither a growth nor value orientation is dominant). A commonly used benchmark in the U.S. equity market is the Standard & Poor's 500 Index (see the middle portion of Figure 1 labeled "Blend Indexes"). Its 10-year average annualized return from 2002-2011 was 2.92 percent. However, there are

other indexes that also measure the large-cap U.S. equity market. For instance, the Dow Jones US Large Cap Index had a 3.44 percent annualized return over the same 10 years. Alternatively, the 10-year annualized return of the Morningstar Large Cap Index was 2.49 percent, representing a difference of 95 basis points compared with that of the Dow Jones US Large Cap Index.

A differential of 95 bps is material—particularly when evaluating the performance variance between actively managed large-cap blend funds and index-based large-cap blend funds. As it pertains to "active vs. passive" comparisons, the performance of actively managed large-cap blend funds will be more compelling if compared against the Morningstar Large Cap Index and less compelling if compared against the Dow Jones US Large Cap Index.

The performance differences among the large-cap U.S. equity indexes demonstrated in Figure 1 represent various index composition methodologies at work. They are all different: some slightly different and others significantly different. What is noteworthy is the amount of variation in any given year between the best- and worst-performing U.S. large-cap index. For instance, in 2009, the gap between the best-performing large-cap blend index (Russell 1000) and the worst-performing index (Morningstar Large Cap) was 367 bps.

Among large-cap value indexes, the annual difference

Figure 1

| Large-Cap US Equity Indexes (Annual % Returns) | | | | | | | | | | | | | |
|------------------------------------------------|-------|------|------|------|------|------|-------|-------|------|------|-------------------------|-------------------------|--------------------------|
| VALUE INDEXES | | | | | | | | | | | | | |
| Large-Cap U.S. Equity Indexes | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 3-Year Return 2009-2011 | 5-Year Return 2007-2011 | 10-Year Return 2002-2011 |
| Dow Jones US Large Value | -14.7 | 30.6 | 13.6 | 5.7 | 21.9 | 1.8 | -36.6 | 17.2 | 15.2 | 3.8 | 11.89 | -1.99 | 3.95 |
| Morningstar Large Value | -15.1 | 26.3 | 14.1 | 7.1 | 25.8 | -0.4 | -36.1 | 11.4 | 14.7 | 2.2 | 9.30 | -3.64 | 3.19 |
| MSCI US Large Cap Value | -18.2 | 28.4 | 13.3 | 6.1 | 23.4 | 1.2 | -35.8 | 16.4 | 13.0 | 1.6 | 10.15 | -2.80 | 3.06 |
| Russell 1000 Value | -15.5 | 30.0 | 16.5 | 7.1 | 22.3 | -0.2 | -36.9 | 19.7 | 15.5 | 0.4 | 11.55 | -2.64 | 3.89 |
| S&P 500/Citigroup Value | -20.9 | 31.8 | 15.7 | 5.8 | 20.8 | 2.0 | -39.2 | 21.2 | 15.1 | -0.5 | 11.55 | -2.96 | 2.87 |
| Differential between Max & Min (bps) | 613 | 553 | 324 | 133 | 499 | 242 | 341 | 980 | 247 | 428 | 259 | 165 | 107 |
| BLEND INDEXES | | | | | | | | | | | | | |
| Dow Jones US Large Cap | -21.1 | 28.9 | 11.7 | 6.3 | 15.6 | 6.4 | -37.1 | 27.0 | 16.1 | 1.7 | 14.45 | 0.08 | 3.44 |
| Morningstar Large Cap | -23.5 | 27.0 | 9.5 | 4.9 | 15.9 | 6.7 | -36.2 | 24.8 | 13.4 | 2.6 | 13.24 | -0.23 | 2.49 |
| MSCI US Large Cap 300 | -22.9 | 27.8 | 9.7 | 4.7 | 16.1 | 6.4 | -36.1 | 25.5 | 13.9 | 2.4 | 13.57 | -0.07 | 2.74 |
| Russell 1000 | -21.7 | 29.9 | 11.4 | 6.3 | 15.5 | 5.8 | -37.6 | 28.4 | 16.1 | 1.5 | 14.81 | -0.02 | 3.34 |
| Standard & Poor's 500 | -22.1 | 28.7 | 10.9 | 4.9 | 15.8 | 5.5 | -37.0 | 26.5 | 15.1 | 2.1 | 14.11 | -0.25 | 2.92 |
| Differential between Max & Min (bps) | 240 | 285 | 211 | 163 | 64 | 120 | 153 | 367 | 266 | 111 | 157 | 33 | 94 |
| GROWTH INDEXES | | | | | | | | | | | | | |
| Dow Jones US Large Growth | -26.7 | 27.5 | 9.5 | 7.1 | 9.2 | 11.0 | -37.5 | 37.4 | 17.0 | -0.6 | 16.94 | 2.09 | 2.87 |
| Morningstar Large Growth | -33.2 | 30.7 | 0.2 | 3.4 | 5.7 | 12.3 | -41.9 | 44.4 | 12.9 | 1.6 | 18.30 | 1.57 | 0.34 |
| MSCI US Large Cap Growth | -28.0 | 27.3 | 6.2 | 3.3 | 9.1 | 11.7 | -36.5 | 35.3 | 14.8 | 3.2 | 16.99 | 2.60 | 2.23 |
| Russell 1000 Growth | -27.9 | 29.8 | 6.3 | 5.3 | 9.1 | 11.8 | -38.4 | 37.2 | 16.7 | 2.6 | 18.01 | 2.50 | 2.59 |
| S&P 500/Citigroup Growth | -23.6 | 25.7 | 6.1 | 4.0 | 11.0 | 9.1 | -34.9 | 31.6 | 15.1 | 4.7 | 16.58 | 2.39 | 2.84 |
| Differential between Max & Min (bps) | 956 | 499 | 934 | 383 | 532 | 321 | 695 | 1,280 | 412 | 522 | 172 | 103 | 253 |

Sources: Morningstar Principia

between the best- and worst-performing index ranged from 133 bps in 2005 to 980 bps in 2009. The S&P 500/Citigroup Value Index had a return of 21.2 percent in 2009 compared with a return of 11.4 percent for the Morningstar Large Value Index. Clearly, an “active vs. passive” comparison would be dramatically impacted based on which of those two indexes was used as the performance bogey for passive investing.

The variation in performance is even more pronounced among large-cap growth indexes. For instance, in 2009, the gap between the best- and worst-performing indexes was 1,280 bps. Even over lengthy time frames, the performance variation among the various large-cap growth indexes can be surprisingly large. For instance, the 10-year average annualized return of the Dow Jones US Large Growth Index was 2.87 percent, whereas the 10-year return for the Morningstar Large Growth Index was 0.34 percent—a difference of 253 bps.

Midcap US Equity Indexes

Next we examine midcap U.S. equity indexes (see Figure 2). Among the five midcap U.S. equity value indexes, there was an annual performance differential that ranged from 64 bps in 2002 to 929 bps in 2004. This level of performance variation reveals significant heterogeneity among the various builders of indexes. Such heterogeneity is seldom discussed

in the numerous articles and presentations that discuss and debate the topic of active vs. passive investing despite the fact that such differences could dramatically impact the findings.

Among midcap blend indexes, the annual performance differences ranged from 124 bps in 2011 to 718 in 2009. Significant variation among midcap indexes is observed in the growth category. For instance, in 2009, the S&P Midcap 400/Citigroup Growth Index had a one-year return of 41.1 percent compared with a return of 55.6 percent for the Dow Jones US Mid-Cap Growth Index. Between the best- and worst-performing midcap growth indexes, the performance differential exceeded 1,200 bps in three of the 10 years. Between the Morningstar Mid Growth Index and the Dow Jones US Mid-Cap Growth Index was a 328 bps difference in their 10-year average annualized returns.

Small-Cap US Equity Indexes

In Figure 3, we examine small-cap U.S. equity indexes. The annual difference between best- and worst-performing small-cap value indexes ranged from 146 bps in 2010 to 1,970 bps in 2009. The dramatic performance variance in 2009 suggests that the methodology for measuring the small-cap value U.S. equity market is fundamentally different between Russell and Morningstar.

Figure 2

| Mid-Cap US Equity Indexes (Annual % Returns) | | | | | | | | | | | | | |
|----------------------------------------------|----------------|-------|------|------|------|------|-------|-------|------|------|-------------------------|-------------------------|--------------------------|
| Mid-Cap U.S. Equity Indexes | VALUE INDEXES | | | | | | | | | | 3-Year Return 2009-2011 | 5-Year Return 2007-2011 | 10-Year Return 2002-2011 |
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | | | |
| Dow Jones US Mid-Cap Value | -9.5 | 34.9 | 17.9 | 5.5 | 15.7 | -1.3 | -34.8 | 32.0 | 21.9 | -1.0 | 16.80 | 0.51 | 6.07 |
| Morningstar Mid Value | -10.0 | 35.9 | 24.3 | 11.5 | 18.8 | -5.5 | -36.0 | 36.1 | 20.6 | -2.6 | 16.92 | -0.67 | 6.90 |
| MSCI US Mid Cap Value | -9.7 | 37.9 | 27.2 | 12.9 | 17.8 | -4.4 | -36.5 | 37.8 | 22.0 | -0.2 | 18.81 | 0.36 | 7.92 |
| Russell Midcap Value | -9.7 | 38.1 | 23.7 | 12.7 | 20.2 | -1.4 | -38.5 | 34.2 | 24.8 | -1.4 | 18.19 | 0.04 | 7.67 |
| S&P MidCap 400/Citigroup Value | -10.1 | 40.2 | 18.9 | 11.5 | 14.6 | 2.7 | -34.9 | 33.7 | 22.8 | -2.4 | 17.01 | 1.38 | 7.45 |
| Differential between Max & Min (bps) | 64 | 524 | 929 | 739 | 560 | 817 | 365 | 580 | 414 | 236 | 201 | 204 | 185 |
| Mid-Cap U.S. Equity Indexes | BLEND INDEXES | | | | | | | | | | 3-Year Return 2009-2011 | 5-Year Return 2007-2011 | 10-Year Return 2002-2011 |
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | | | |
| Dow Jones US Mid Cap | -15.9 | 38.7 | 18.5 | 10.9 | 13.5 | 5.6 | -38.9 | 44.6 | 25.4 | -0.7 | 21.66 | 3.05 | 7.29 |
| Morningstar Mid Cap | -18.1 | 38.4 | 19.7 | 12.7 | 14.3 | 5.2 | -40.5 | 39.0 | 24.9 | -0.8 | 19.88 | 1.54 | 6.56 |
| MSCI US Mid Cap 450 Index | -16.5 | 39.1 | 20.5 | 13.9 | 13.8 | 6.2 | -41.8 | 40.5 | 25.7 | -1.9 | 20.09 | 1.37 | 6.86 |
| Russell Midcap | -16.2 | 40.1 | 20.2 | 12.7 | 15.3 | 5.6 | -41.5 | 40.5 | 25.5 | -1.6 | 20.17 | 1.42 | 6.99 |
| S&P Midcap 400 | -14.5 | 35.6 | 16.5 | 12.6 | 10.3 | 8.0 | -36.2 | 37.4 | 26.6 | -1.7 | 19.57 | 3.32 | 7.04 |
| Differential between Max & Min (bps) | 353 | 444 | 404 | 303 | 494 | 275 | 557 | 718 | 172 | 124 | 208 | 195 | 73 |
| Mid-Cap U.S. Equity Indexes | GROWTH INDEXES | | | | | | | | | | 3-Year Return 2009-2011 | 5-Year Return 2007-2011 | 10-Year Return 2002-2011 |
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | | | |
| Dow Jones US Mid-Cap Growth | -24.5 | 43.4 | 18.9 | 16.7 | 11.6 | 11.2 | -41.6 | 55.6 | 28.2 | -0.6 | 25.64 | 5.18 | 7.99 |
| Morningstar Mid Growth | -32.5 | 40.0 | 15.5 | 16.3 | 9.6 | 19.7 | -46.3 | 42.1 | 27.7 | -2.3 | 21.01 | 2.65 | 4.71 |
| MSCI US Mid Cap Growth | -23.3 | 40.3 | 13.8 | 15.0 | 9.7 | 17.4 | -47.1 | 43.0 | 29.2 | -3.6 | 21.23 | 2.05 | 5.51 |
| Russell Midcap Growth | -27.4 | 42.7 | 15.5 | 12.1 | 10.7 | 11.4 | -44.3 | 46.3 | 26.4 | -1.7 | 22.06 | 2.44 | 5.29 |
| S&P MidCap 400/Citigroup Growth | -19.2 | 31.0 | 14.0 | 13.6 | 5.8 | 13.5 | -37.6 | 41.1 | 30.6 | -0.9 | 22.20 | 5.26 | 6.48 |
| Differential between Max & Min (bps) | 1,337 | 1,245 | 512 | 457 | 576 | 847 | 946 | 1,447 | 419 | 305 | 463 | 321 | 328 |

Source: Morningstar Principia

Figure 3

Small-Cap US Equity Indexes (Annual % Returns)

VALUE INDEXES

| Small-Cap U.S. Equity Indexes | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 3-Year Return 2009-2011 | 5-Year Return 2007-2011 | 10-Year Return 2002-2011 |
|--------------------------------------|-------|------|------|------|------|------|-------|-------|------|------|-------------------------|-------------------------|--------------------------|
| Dow Jones US Small Cap Value | -8.7 | 46.9 | 19.6 | 5.3 | 20.0 | -4.1 | -33.9 | 36.8 | 25.0 | -4.0 | 17.98 | 0.79 | 7.75 |
| Morningstar Small Value | -8.2 | 48.9 | 24.0 | 5.1 | 20.0 | -8.2 | -31.7 | 40.3 | 26.0 | -1.8 | 20.15 | 1.71 | 8.81 |
| MSCI US Small Cap Value | -6.6 | 44.3 | 23.7 | 6.3 | 19.4 | -6.9 | -32.1 | 30.3 | 25.0 | -4.0 | 16.05 | -0.25 | 7.65 |
| Russell 2000 Value | -11.4 | 46.0 | 22.3 | 4.7 | 23.5 | -9.8 | -28.9 | 20.6 | 24.5 | -5.5 | 12.36 | -1.87 | 6.40 |
| S&P SmallCap 600/Citigroup Value | -14.5 | 40.0 | 23.3 | 6.2 | 19.6 | -5.5 | -29.5 | 22.9 | 24.7 | -1.4 | 14.75 | 0.12 | 6.55 |
| Differential between Max & Min (bps) | 784 | 883 | 442 | 157 | 404 | 565 | 500 | 1,970 | 146 | 412 | 779 | 359 | 241 |

BLEND INDEXES

| | | | | | | | | | | | | | |
|--------------------------------------|-------|-------|------|-----|------|------|-------|-------|------|------|-------|------|------|
| Dow Jones US Small Cap | -19.0 | 49.0 | 19.5 | 7.4 | 17.0 | 1.9 | -37.8 | 41.9 | 28.6 | -2.9 | 21.02 | 2.37 | 7.37 |
| Morningstar Small Cap | -20.4 | 47.7 | 20.4 | 5.8 | 17.1 | -0.7 | -36.1 | 37.8 | 28.4 | -2.6 | 19.88 | 1.82 | 6.73 |
| MSCI US Small Cap 1750 Index | -18.4 | 47.4 | 20.0 | 7.5 | 15.8 | 1.2 | -36.2 | 36.2 | 27.8 | -2.8 | 19.17 | 1.79 | 6.98 |
| Russell 2000 | -20.5 | 47.3 | 18.3 | 4.6 | 18.4 | -1.6 | -33.8 | 27.2 | 26.9 | -4.2 | 15.63 | 0.15 | 5.62 |
| S&P SmallCap 600 | -14.6 | 38.8 | 22.7 | 7.7 | 15.1 | -0.3 | -31.1 | 25.6 | 26.3 | 1.0 | 17.02 | 1.95 | 7.09 |
| Differential between Max & Min (bps) | 585 | 1,024 | 432 | 313 | 325 | 347 | 669 | 1,636 | 231 | 520 | 539 | 222 | 175 |

GROWTH INDEXES

| | | | | | | | | | | | | | |
|--------------------------------------|-------|-------|------|-----|------|------|-------|-------|------|------|-------|------|------|
| Dow Jones US Small Cap Growth | -28.5 | 51.0 | 19.0 | 9.7 | 13.8 | 8.1 | -41.3 | 47.4 | 32.0 | -2.1 | 23.95 | 3.86 | 6.84 |
| Morningstar Small Growth | -36.9 | 52.7 | 13.5 | 5.8 | 10.0 | 11.1 | -39.9 | 33.0 | 31.3 | -1.0 | 19.98 | 2.88 | 3.91 |
| MSCI US Small Cap Growth | -29.3 | 50.4 | 16.1 | 8.7 | 12.0 | 9.7 | -40.1 | 42.0 | 30.7 | -1.5 | 22.26 | 3.72 | 6.08 |
| Russell 2000 Growth | -30.3 | 48.5 | 14.3 | 4.2 | 13.4 | 7.1 | -38.5 | 34.5 | 29.1 | -2.9 | 19.00 | 2.09 | 4.48 |
| S&P SmallCap 600/Citigroup Growth | -15.4 | 37.3 | 22.0 | 9.2 | 10.5 | 5.6 | -33.0 | 28.4 | 28.0 | 3.6 | 19.40 | 3.80 | 7.51 |
| Differential between Max & Min (bps) | 2,151 | 1,534 | 852 | 553 | 375 | 548 | 831 | 1,903 | 398 | 653 | 495 | 177 | 360 |

Source: Morningstar Principia

Small-cap blend indexes also demonstrate significant variance in performance, ranging from 231 bps in 2010 to 1,636 bps in 2009. It is interesting that the bookends of performance variation occurred in adjacent years.

The performance variation among small-cap growth indexes exceeded 1,500 bps in three separate years (2002, 2003 and 2009). In 2002, the S&P SmallCap 600/Citigroup Growth Index had a return of -15.4 percent, while the Morningstar Small Growth Index had a -36.9 percent return—producing a performance differential of 2,151 bps. By any reasonable guideline, that amount of difference between two indexes measuring the same slice of the U.S. equity market is astonishing.

Do these differences in individual indexes really matter? Yes, but only if a person invests very “narrowly.” For instance, if my investment portfolio consisted entirely of small-cap growth U.S. stock, I would want to mimic the S&P SmallCap 600/Citigroup Growth Index rather than the Morningstar Small Growth Index (at least, based on historical returns). But if my investment portfolio is a broad assortment of asset classes (i.e., a broad array of indexes), the differences between individual indexes within the

same asset class are not a highly significant issue. This assertion will be demonstrated next.

Interesting Vs. Important

The preceding observations regarding the performance differentials among various U.S. equity market indexes and the potential impact such differences could have on active vs. passive comparisons are *interesting*, but they are not necessarily important. Why? While individual U.S. equity indexes are important (large-cap, midcap and small-cap), they are only components within a larger and more diverse asset allocation model. As important as they are, individual equity or fixed-income indexes are simply one of many ingredients in a diversified portfolio that should incorporate a wide variety of asset classes (i.e., a wide variety of indexes). What is *important* is how the overall portfolio performs, rather than over-focusing on how an individual “single-asset-class” index behaves in relation to another competing index or whether a passive exposure to that asset class is preferred to an active exposure. The sum is more important than the parts when considering the whole point of asset allocation as

it relates to building diversified portfolios. In short, this article is reliant upon the premise that investors should be constructing broadly diversified portfolios with divergent asset class exposures (i.e., diverse indexes).

To illustrate the assertion that the sum is more important than the parts, the large-cap, midcap and small-cap indexes from each of the five index providers (Dow Jones, Morningstar, MSCI, Russell and Standard & Poor's) were inserted into a diversified 12-asset class portfolio. Each of the 12 assets was equally weighted at 8.33 percent of the portfolio, and the 12 asset classes were rebalanced at the beginning of each year. Nine of the 12 asset classes remained the same throughout all the performance analysis; only the three U.S. equity elements were changed. The makeup of the 12-asset (i.e., 12-index) portfolio is illustrated in Figure 4. The peach shading illustrates where the various value, blend and growth indexes from each of the five index providers were inserted.

For example, the first portfolio that was analyzed used the three Dow Jones value indexes (Dow Jones US Large Cap Value, Dow Jones US Mid-Cap Value and Dow Jones US Small Cap Value) in the three U.S. equity slots in the 12-asset model. The 10-year performance for the entire 12-asset portfolio was then calculated over the period from Jan. 1, 2002 to Dec. 31, 2011. This process was repeated using the value indexes for each of the four remaining index providers. The performance of the 12-asset portfolio was then calculated utilizing the blend indexes (large, mid and small) and growth indexes (large, mid and small) from each of the five index providers.

As shown in Figure 5, when the various U.S. equity indexes were utilized in a multi-asset, diversified portfolio, the sizable performance differences that were observed at the individual index level were largely neutralized. Said

differently, the vast differences among some of the "parts" (individual U.S. equity indexes) were essentially obliterated at the "sum" level (that is, a multi-asset portfolio comprising 12 indexes). Just as tomatoes and onions and hot peppers are very different when served individually, when they are combined into a salsa, the result is a unifying (and satisfying) taste based on the assimilation of all the ingredients into a "sum."

There are several interesting findings at the "sum," or portfolio, level. For instance, the value indexes from Morningstar (large cap, midcap and small cap) generated the best 10-year multi-asset *portfolio* performance among the five index providers. The value indexes from S&P/Citigroup generated the worst performance. However, the performance difference between a 12-asset portfolio using three Morningstar U.S. equity value indexes and a 12-asset portfolio using three S&P/Citigroup U.S. equity value indexes was only 19 bps (with a nearly equivalent standard deviation of annual returns). Nineteen basis points is not a dramatic difference in performance, but provides an indication that the Morningstar methodology for assembling value equity indexes is slightly more effective within a multi-asset portfolio than are S&P value indexes (at least, over this particular 10-year period from 2002 to 2011). Going forward, it is impossible to know if Morningstar's slight advantage within "value" indexes will persist.

The Morningstar performance advantage over S&P when utilizing three value indexes (large-cap, midcap and small-cap) within a 12-asset portfolio was partially attributable to the performance of the Morningstar large-cap value and small-cap value indexes. In mid-caps, however, the S&P Midcap 400/Citigroup Value Index actually had better 10-year performance than the Morningstar Mid Value Index.

When using blend indexes from the five index providers in a 12-asset portfolio, we observe that the Dow Jones indexes generated the best performance, posting a 9.11 percent 10-year average annualized return. When S&P U.S. equity blend indexes were utilized in the 12-asset portfolio, the 10-year annualized return was 8.98 percent, a mere 13 bps behind. However, the standard deviation of the annual portfolio returns was slightly lower using the S&P indexes (15.3 percent vs. 15.9 percent). When considering both risk and return, the Dow Jones U.S. blend equity indexes and the S&P U.S. equity blend indexes produced results that were comparable.

The least attractive blend indexes to utilize in a broadly diversified 12-asset portfolio were from Morningstar (based on the 10-year period from 2002-2011). However, these are narrow margins of difference between best- and worst-blend indexes. Only 19 bps separated the best 10-year performance (Dow Jones indexes) from the worst (Morningstar indexes). Pragmatically speaking, using the U.S. equity blend indexes (large, mid and small) from any of the five index providers produced comparable, and satisfactory, results.

Performance at the portfolio level when using growth

Figure 4

| 12-Asset 'Index-Based' Portfolio Model (12-Index Portfolio) | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Large-cap US equity, mid-cap US equity and small-cap US equity indexes from the five major index providers were sequentially utilized into the 12-asset model. | |
| 12-Asset Portfolio Allocation Model | Index Used in 12-Asset Portfolio |
| US Large-Cap Equity | DJ or Morningstar or MSCI or Russell or S&P |
| US Mid-Cap Equity | DJ or Morningstar or MSCI or Russell or S&P |
| US Small-Cap Equity | DJ or Morningstar or MSCI or Russell or S&P |
| Developed Non-US Equity | MSCI EAFE Index |
| Emerging Non-US Equity | MSCI Emerging Markets Index |
| Real Estate | Dow Jones US Select REIT Index |
| Natural Resources | Goldman Sachs Natural Resources Index |
| Commodities | Deutsche Bank Liquid Commodity Index (Total Return) |
| US Aggregate Bonds | Barclays Aggregate Bond Index |
| Inflation-Protected Bonds | Barclays US Treasury Inflation Note Index |
| International Bonds | Barclays Global Treasury Ex-US Index |
| Cash | 3 Month US Treasury Bill |

Source: 7Twelve™ Portfolio developed by author

Figure 5

| 10-Year Average Annualized Returns And Standard Deviation Of Annual Returns (2002-2011) For 12-Asset Portfolio Using US Equity Indexes From Five Major Index Providers | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| US Equity Index Providers <i>Large, Mid, Small</i> (Utilized In The 12-Index Portfolio) | 12-Asset Portfolio Performance 10-Year Average Annualized Return (%) 2002-2011 | 12-Asset Portfolio Risk 10-Year Standard Deviation Of Annual Returns (%) 2002-2011 |
| US Equity Value Indexes | | |
| Morningstar | 9.15 | 15.4 |
| MSCI | 9.11 | 15.4 |
| Russell | 9.06 | 15.4 |
| Dow Jones | 9.03 | 15.3 |
| S&P | 8.96 | 15.3 |
| US Equity Blend Indexes | | |
| Dow Jones | 9.11 | 15.9 |
| S&P | 8.98 | 15.3 |
| MSCI | 8.98 | 15.8 |
| Russell | 8.93 | 15.8 |
| Morningstar | 8.92 | 15.8 |
| US Equity Growth Indexes | | |
| Dow Jones | 9.17 | 16.6 |
| S&P | 8.98 | 15.3 |
| MSCI | 8.85 | 16.4 |
| Russell | 8.72 | 16.3 |
| Morningstar | 8.52 | 16.6 |

Sources: Morningstar Principia, author calculations

indexes from the various index providers was identical to the blend rankings: Dow Jones was first, S&P/Citigroup was second, MSCI was third, Russell was fourth and Morningstar was fifth. In this case, the differential in performance between first and fifth place was larger than when using blend indexes. The Dow Jones growth indexes contributed to the 12-asset portfolio in such a way as to generate a 10-year annualized return that was 65 bps larger than if using three Morningstar growth indexes.

When using the three growth indexes from S&P/Citigroup, the 12-asset portfolio had a 10-year annualized return that was 19 bps behind the 12-asset portfolio using Dow Jones indexes. However, the S&P growth indexes produced a portfolio standard deviation of 15.3 percent compared with 16.6 percent using the three Dow Jones indexes. This change represents an 8.5 percent reduction in annual return volatility. Worthy of note is the fact that three S&P U.S. equity growth indexes (large, mid and small) contributed to the lowest portfolio standard deviation of return among the five index providers by a fairly sizable margin.

Summary

As an industry, too much time is spent arguing over *interesting* issues. Such debates come at the expense of more *important* issues, such as thoughtful asset allocation models that encourage broad portfolio diversification

and better outcomes for investors. Consider the evidence in this paper. The classic measure of the performance for many investors is large-cap “blend” U.S. equity. Over this particular 10-year period (2002-2011), that particular “measure” of the market ranged from an annualized return of 2.49 percent to 3.44 percent. If investors had a portfolio consisting solely of large-cap U.S. equity, their 10-year experience was very unsatisfactory regardless of which index they attempted to mimic.

Alternatively, consider the returns of multi-index portfolios (using U.S. equity blend indexes) over the same 10-year period: 8.92 percent to 9.11 percent (from Figure 5). During a 10-year span often referred to as the “lost decade,” a broadly diversified, multi-asset (i.e., multi-index) portfolio produced a very acceptable 10-year annualized return—regardless of which index provider was utilized in the U.S. equity space. In short, *the recipe is more important than the ingredients*. Yet we spend too much time fussing over the ingredients and too little time building great recipes.

While the issues of active vs. passive and index variation are intellectually interesting, the more important issue is helping investors and their financial advisors build better investment portfolios. This article illustrates that building a multi-asset (i.e., multi-index) portfolio is not only interesting, but represents the important and relevant “sum of the matter.”