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Global Equity

AN EXPANDED OPPORTUNITY SET CREATES ALPHA OPPORTUNITIES

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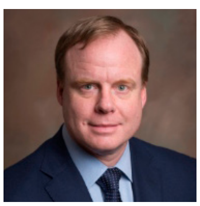

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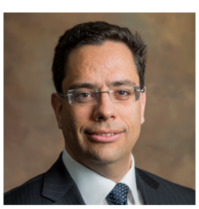

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EXECUTIVE SUMMARY

- Pension plan sponsors and other institutional investors are seeking to improve the active performance of their equity allocations, even as many have reduced their overall exposure to public equities. Toward this end, many institutions are including global equity mandates in their portfolios, typically as an alpha-enhancing addition to their existing manager structures.
- Global equity portfolios allow active managers to leverage their skills and resources across a broader opportunity set compared with the geographically constrained mandates in the traditional U.S./global ex U.S. (international) manager structure. In theory, this should expand the ability of active managers to generate alpha from both top-down and bottom-up active positions.
- Correlation and return dispersion trends suggest there is still considerable room for active global equity managers to add value through stock selection and/or country and sector rotation. The country and sector correlation spikes seen during and after the global financial crisis have faded, and stock-specific factors again dominate global equity returns.
- Performance data from the eVestment Alliance database indicate that the median global large-cap equity manager delivered higher active returns compared with the median U.S. large-cap manager and the median international large-cap manager over the 10-year period ended 31 March 2018. The performance differential increased significantly at the 25th percentile level, indicating the importance of manager skill.

As defined benefit plan sponsors and other institutional investors shift their allocation mix away from listed equities—either to de-risk plan liabilities or to fund greater exposure to alternative asset classes—many are also seeking ways to improve the performance of their remaining equity mandates. Global equity strategies are playing an increasingly important role in this search.

By combining developed international and emerging market (EM) equities in a single portfolio organized along sector and industry lines, global strategies expand the opportunity set for active managers, potentially allowing them to leverage their research and investment skills across a broader range of positions.

Investment theory—backed by empirical evidence—suggests that extending the playing field for active management could allow global equity managers to deliver higher excess returns and alpha than the traditional U.S./international portfolio structure. Global portfolios

By combining developed international and emerging market equities in a single portfolio organized along sector and industry lines, global strategies expand the opportunity set for active managers, potentially allowing them to leverage their research and investment skills across a broader range of positions.

also can take a more focused, selective approach to sector and industry holdings, potentially increasing their "activeness" relative to a structure that combines separate U.S. and non-U.S. mandates. This may be attractive to sponsors who prefer to use low-cost passive vehicles for their beta exposures but also wish to retain an active, alpha-seeking overlay.

As the preceding statement suggests, decisions about whether or how to employ global equity mandates in an institutional investment setting are inextricably tied to larger questions about portfolio structure. The correct answers will be as varied as the return objectives, risk tolerances, liability profiles, and policy constraints of the investors themselves. While some investors may decide a complete overhaul of their portfolio structure is warranted—replacing U.S. and non-U.S. vehicles with a global equity allocation—most plan sponsors appear to view global equity as an opportunistic, return-seeking addition to their existing mandates.

THE CASE FOR GLOBAL EQUITY: ALPHA GENERATION

Portfolio theory provides a fairly straightforward argument for the ability of global equity managers to improve active returns relative to more constrained mandates. Sometimes known as the Fundamental Law of Active Management, this principle holds that investment performance is a function of manager skill and the available opportunity set. The higher the skill and the wider the opportunity set, the greater the potential for the manager to generate true alpha—higher risk-adjusted excess returns. There is an important qualification, however: To represent true alpha opportunities, portfolio positions must be independent of each other. To the extent securities or sectors are correlated, the number of active positions is reduced.

The global equity structure significantly expands the universe of possible active positions—both for top-down sector, industry, or country tilts and for bottom-up stock selection:

- **Bottom Up:** Relative to a U.S.-only mandate, a global portfolio more than triples the potential investment opportunities—from the 3,485 stocks in the Wilshire 5000 Index[1] to the 11,300 stocks in the S&P/Citigroup Broad Market Index Global. The latter universe is also more than three times the size of the 3,211 stocks in the MSCI EAFE (Europe, Australasia, and Far East) Investable Market Index.[2]

- **Top Down:** Multiplying the 68 industries currently in the MSCI Global Industry Classification Standard by the 47 countries in the MSCI All Country World Index (ACWI) creates 3,196 possible country/industry cells.[1] Some of these cells are null sets since not every country offers exposure to every industry. But to the extent that the populated cells are not perfectly correlated, they represent potential opportunities to take active top-down positions.

LOWER CORRELATIONS SIGNAL TOP-DOWN OPPORTUNITIES

Some analysts have argued that globalization has eroded the ability of active managers to add value in global equity markets by increasing the positive correlations among countries, regions, and sectors—thus reducing the potential number of truly independent top-down active positions.

The data do suggest that equity correlations have risen across regions and countries over the past few decades—especially during major global economic and financial events like the 2008–2009 financial crisis. However, there appear to be inherent limits to this trend:

- Most nations continue to print their own currencies and follow their own monetary and fiscal policies. These policies drive differentiated economic and earnings cycles and may also influence relative equity valuations.

[1] As of 30 April 2018.
[2] As of 30 April 2018. The MSCI EAFE Investable Market Index captures large-, mid-, and small-cap companies across the EAFE markets (Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the UK) and covers approximately 99% of the free-float adjusted market capitalization in each country.
Note: Throughout this report, the term "international" is used to refer to global ex-U.S. portfolio structures.

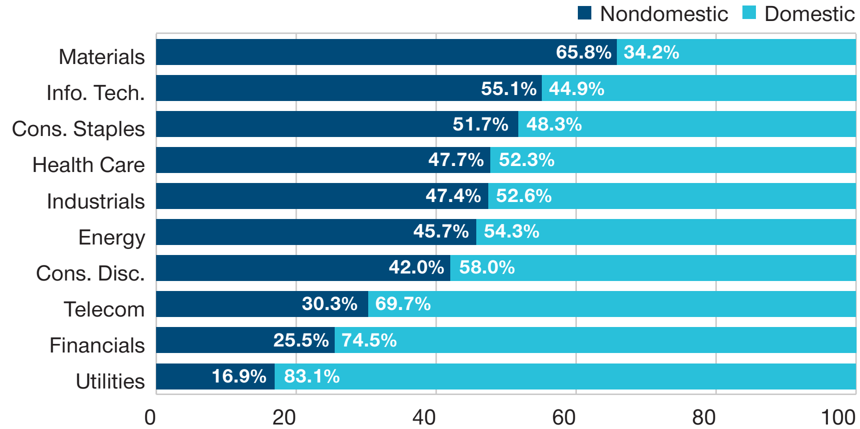
- Specialization may leave regions and countries (and the sectors and industries within them) with very different exposures to global economic trends. Sharp declines in commodity prices, for example, can be beneficial for commodity-consuming nations but economically harmful to commodity-producing countries.

- Many industries remain closely tethered to their domestic economies. Even in the most globalized sector of all—materials—the average company still derives more than a third of its revenues from domestic sources (Figure 1).

Although global, regional, and sector correlations reached extremely high levels during the global financial crisis and its economic aftermath, they have since dropped back into what appear to be more "normal" ranges in the globalization era (Figure 2). We believe these levels still leave considerable room for global equity managers to take independent top-down active positions.

FIGURE 1: Domestic and Nondomestic Sales as Percent of Total Sales

Economic Sectors in the MSCI ACWI
As of 31 December 2017



Sources: MSCI and Style Research.
"Nondomestic sales" refers to company sales outside of its country of domicile.

FIGURE 2: Average Pairwise Correlations

Major Regions and Economic Sectors in the MSCI ACWI*
24-Month Moving Averages, 30 June 2000 through 31 March 2018

Source: FactSet Research Systems Inc. All rights reserved.
*Regional benchmarks: S&P 500, MSCI Europe, MSCI Japan, MSCI AC Asia ex Japan, MSCI Australia, MSCI EM Latin America, MSCI EM Europe, Middle East, and Africa.

RETURN DISPERSION CREATES ROOM FOR STOCK SELECTION

For many, if not most, global equity managers, top-down country or sector rotation typically takes a back seat to stock selection, backed by bottom-up research and analysis of company fundamentals. For these managers, the dispersion of individual stock returns is the critical indicator of active return potential.

Our research suggests that global markets continue to offer ample opportunities for stock selection alpha. One way to gauge this potential is to examine the relative importance of stock-specific factors in explaining global equity returns compared with market, country, and sector factors.

To shed light on this issue, T. Rowe Price's quantitative equity research group used regression analysis to examine the relative importance of stock-specific return factors in a number of equity universes, including the global large- and mid-cap market.[3]

Figure 3 (page 4) shows that over the past 25 years, stock-specific factors typically have explained half or more of global equity returns.[4] The sharp rise in the relative importance of the global market factor during and after the financial crisis (the same correlation spike shown in Figure 2) has since reversed, again suggesting that global equity markets provide ample opportunities to generate alpha through bottom-up stock selection.

Another way to illustrate the same point is to measure the dispersion of returns within global sectors. Figure 4 (page 4) shows the difference in the average annual return for the 10 highest-performing stocks and the 10 worst-performing stocks in each

[3]The global large- and mid-cap universe consisted of almost 3,450 global stocks, similar in regional concentration to the MSCI ACWI. To smooth short-term volatility, R-squared and correlation were both measured over 36-month rolling periods. U.S. dollar returns were used, meaning currency effects are subsumed in the country factor.
[4]Country and sector R-squared values were proportionally scaled to make all components add up to 100%. For this reason, the return decompositions reported here measure the relative, not absolute, importance of each factor.

economic sector in the MSCI ACWI.[5] The bars in the chart represent the range between the highest annual difference and the lowest annual difference recorded over the full 18-year period examined. The squares show the average return difference in each sector over the entire period. These results also seem to indicate that most global sectors contain ample room for bottom-up stock selection.

GLOBAL EQUITY MANAGERS DELIVERED HIGHER ACTIVE RETURNS

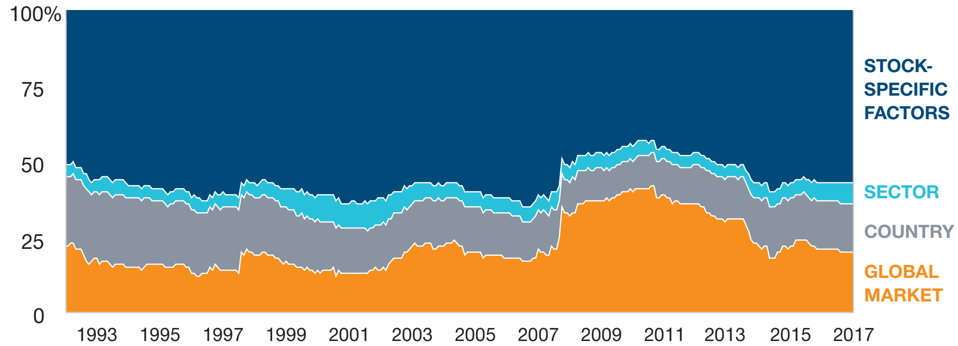
Comparing the historical performance of global equity managers as a group with managers of more constrained U.S. and international portfolios suggests that the global structure does provide a tangible active advantage. To test this hypothesis, we looked at alpha results and information ratios for several broad manager categories in the eVestment Alliance database of institutional asset managers.[6] These groups included:

- U.S. large-cap equity managers benchmarked to the Russell 1000 Index,
- International large-cap equity managers benchmarked to the MSCI EAFE Index, and
- Global large-cap equity managers benchmarked to the MSCI ACWI.

Because shorter-term factors—such as currency cycles—can have a major impact on relative returns among these manager categories, we believe active performance is best evaluated over multiyear periods and longer time horizons. For this reason, we examined results for the three years, five years, and 10 years ended 31 March 2018. To account for the importance of manager skill, we looked at both the

FIGURE 3: Proportion of Global Equity Returns Explained by Market, Country, Sector, and Stock-Specific Factors

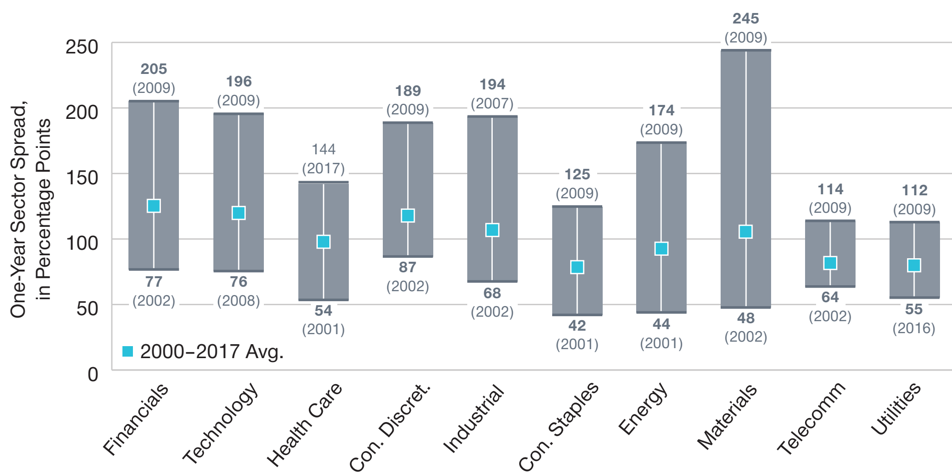
Global Large- and Mid-Cap Equity Universe
25 Years Ended 31 December 2017



Past performance is not a reliable indicator of future performance.
Source: T. Rowe Price calculations using data from FactSet Research Systems Inc. All rights reserved.

FIGURE 4: Spread Between Average Annual Returns on Top 10 and Bottom 10 Stocks

MSCI ACWI Sectors, 2000 Through 2017*



Past performance is not a reliable indicator of future performance.
Source: Wilshire Associates; data analysis by T. Rowe Price.
*Sector constituents are composed of MSCI ACWI stocks, as classified by the MSCI Global Industry Classification System (GICS), with market capitalizations in excess of USD $5 billion.

[5]Each sector's constituents are composed of MSCI ACWI stocks, as classified by the MSCI GICS, with market capitalizations in excess of USD $5 billion.
[6]Manager categories are as defined by eVestment Alliance, based on the average capitalization of the stocks in the manager's portfolio. The results shown here are gross of fees and are based on performance data voluntarily reported by managers to eVestment Alliance. The alphas shown are "true" (i.e., beta adjusted) alphas. Alphas for individual managers and manager rankings were calculated by eVestment Alliance. For the majority of managers in the eVestment Alliance database, performance results are based on separate account composites; others may be based on institutional mutual fund share classes. Results are based on the median and 25th percentile managers in each eVestment Alliance category for each period shown.

median manager in each category and the manager at the 25th percentile level. Some of the findings:

- The median global manager delivered higher annualized alpha than the median U.S. manager over the 3-, 5-, and 10-year periods and higher than the median international EAFE manager over the 10-year period ended 31 March 2018 (Figure 5).
- Information ratios for global equity managers were higher than for U.S. large-cap managers at both the median and the 25th percentile levels and roughly in line with international managers over most time periods (Figure 6).
- The alpha advantage for global equity managers increased at higher skill levels. Over the 10 years ended 31 March 2018, for example, the 25th percentile global manager delivered an extra 83 basis points in alpha compared with the 25th percentile U.S. large-cap manager and 53 basis points compared with the 25th percentile EAFE manager (Figure 7).

This appears to confirm that the broader opportunity set associated with global equity mandates allows more talented managers to leverage their investment skills and research resources more fully.

Of course, many institutions include a mix of U.S. and EAFE mandates in their manager structures, providing a measure of diversification that can reduce overall portfolio volatility—a potential benefit not captured by simple performance comparisons across manager categories. However, the fact that global large-cap equity managers, as a group, have tended to generate higher alpha than both U.S. and EAFE large-cap managers by significant margins suggests that any portfolio combination of the latter two groups would still be inferior on an active return basis.

FIGURE 5: Alphas by Manager Categories

Periods Ended 31 March 2018, Annualized, in Basis Points

Manager Category and Performance Rank	3-Year	5-Year	10-Year
Median Manager			
U.S. Large-Cap vs. Russell 1000 Index	-9	2	50
International Large-Cap vs. MSCI EAFE Index	91	109	102
Global vs. MSCI ACWI	43	101	114
25th Percentile Manager			
U.S. Large-Cap vs. Russell 1000 Index	130	129	162
International vs. MSCI EAFE Index	186	166	192
Global vs. MSCI ACWI	205	213	245

Past performance is not a reliable indicator of future performance.
Source: eVestment Alliance; data analysis by T. Rowe Price.

FIGURE 6: Information Ratios by Manager Categories

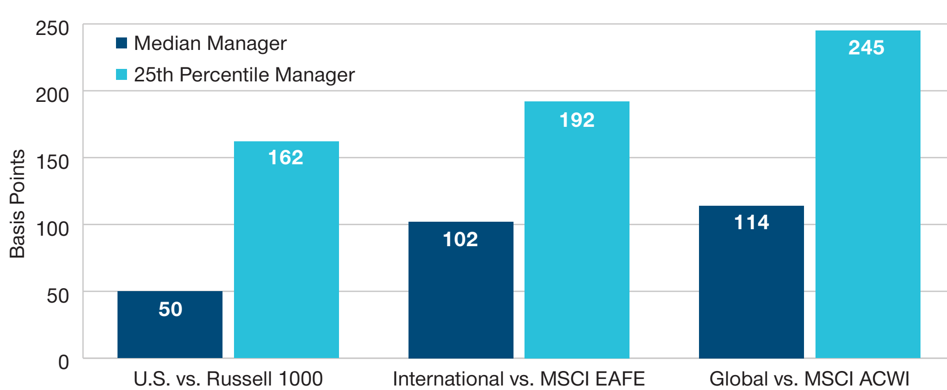
Periods Ended 31 March 2018, Annualized

Manager Category and Performance Rank	3-Year	5-Year	10-Year
Median Manager			
U.S. Large-Cap vs. Russell 1000 Index	-0.17	-0.09	0.04
International vs. MSCI EAFE Index	0.18	0.20	0.24
Global vs. MSCI ACWI	-0.03	0.14	0.20
25th Percentile Manager			
U.S. Large-Cap vs. Russell 1000 Index	0.25	0.35	0.29
International vs. MSCI EAFE Index	0.53	0.42	0.49
Global vs. MSCI ACWI	0.32	0.50	0.41

Past performance is not a reliable indicator of future performance.
Source: eVestment Alliance; data analysis by T. Rowe Price.

FIGURE 7: 10-Year Alpha by Category and Performance Rank

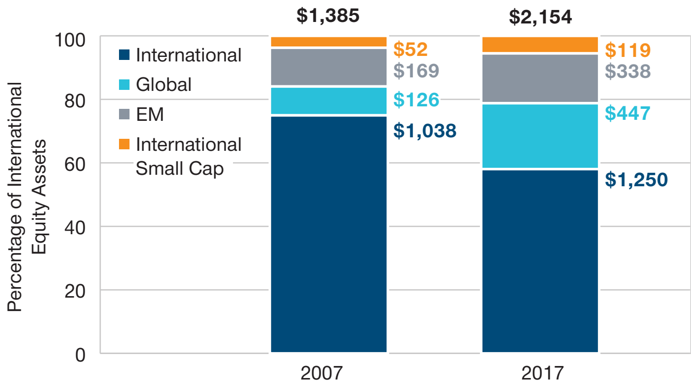
31 March 2008 Through 31 March 2018, Annualized, in Basis Points



Past performance is not a reliable indicator of future performance.
Source: eVestment Alliance; data analysis by T. Rowe Price.

FIGURE 8: **International Equity Allocations of U.S. Tax-Exempt Assets**

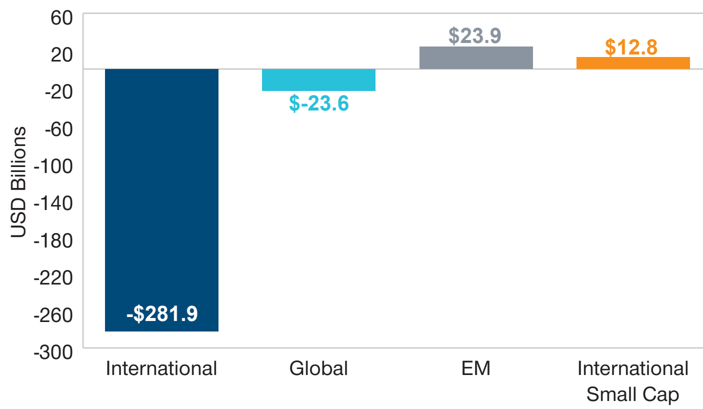
Percentage of Total International Equity Assets, in USD Billions
As of 31 December 2017



Source: InterSec Research.

FIGURE 9: **Equity Mandate Net Flows by Investment Approach**

2009 Through 31 December 2017, in USD Billions



Source: InterSec Research.

IMPLEMENTING GLOBAL EQUITY IN INSTITUTIONAL PORTFOLIOS

As of year-end 2017, data suggested that U.S. institutional investors continued to reduce their allocations to U.S. public equities while adding exposure to alternative investments and to non-U.S. equity and fixed income assets. Between their 2004 and 2017 plan years, for example, U.S. public defined benefit plans reduced their exposure to U.S. public equities by nearly half—from 45% of total assets to just 23%—according to year-end 2017 data provided by Greenwich Associates. Allocations to private equity, hedge funds, and other alternatives nearly tripled during the same period.

With many defined benefit plans now committed to implementing liability-matching strategies as their funded status improves, U.S. equity allocations among U.S. tax-exempt investors have been declining, and non-U.S. equity holdings have risen in absolute U.S. dollar terms (Figure 8). However, these aggregates mask considerable change in the underlying composition of non-U.S. allocations. While global equity assets more than tripled from 2007 through the end of 2017, international mandates saw considerable net outflows (Figure 9). This suggests that some institutional investors may be shifting to portfolio structures that combine a core global equity allocation with satellite allocations to more specialized non-U.S. equity mandates. Through December 2017, InterSec Research said that its review of 46 U.S. defined benefit plans with more than USD $1 billion in assets found that 17 of them (or 37%) had global equity allocations, with an average allocation of 11% of total plan assets.

CONCLUSIONS

In an effort to improve active returns as their total equity exposure shrinks, many defined benefit plan sponsors and other institutional investors are adding global equity mandates to their manager lineup. For some sponsors, this means scrapping their existing U.S./international allocations in favor of a single, globally integrated equity portfolio. For others, it is more likely to involve supplementing their existing manager structure with a global equity component.

The key benefits of global equity mandates lie in the greater opportunities they provide for skilled active management to add value. However, research is a critical component of global equity success. Managers need to balance the expanded opportunity set that global equity provides against their capacity to generate profitable ideas. Extensive resources may be required.

Research teams also need the capacity to operate along both major axes (geographic and economic) and integrate them in a unified, coherent analytical process. Managers who learn to do this effectively are likely to have a significant competitive advantage.

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