The Case for Using a Sector-Based Framework in Equity Portfolio Construction

Sector exposure historically has been a major driver of stock returns and can be an effective way to seek an objective and manage portfolio risk.

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Key Takeaways

- Using a sector-based framework to build equity portfolios can help investors achieve a variety of investment objectives and greater control in managing portfolio risk.
- Beyond company-specific factors, sector exposure has been the most influential driver of the variability in equity market returns over time, yet sector-based portfolio construction remains an underutilized strategy in the marketplace.
- Equity sectors have a variety of attributes, including stable classification, consistent earnings drivers, high return dispersion, clear volatility patterns, and low correlations, which together can help investors generate an efficient portfolio.

For most of the past two decades, equity allocations within portfolios have primarily been determined using traditional metrics such as market-capitalization size and style (see “Equity classification systems in the modern era,” page 3). However, these metrics de-emphasize one of the most important determinants of equity volatility and return variability: the sector and industry in which a company operates. A sector-based framework can be an effective approach to equity portfolio construction for investors who are looking to generate positive returns and maintain greater control over portfolio risk.

Sector exposure has been a significant determinant of equity returns

Diversification is a key element of any equity allocation approach.¹ According to modern portfolio theory, combining assets that are imperfectly correlated with one another—meaning their performance does not move in lockstep—lowers the risk (volatility) of a portfolio and opens the door to potentially higher risk-adjusted returns.²
To construct a diversified equity portfolio, it is helpful to understand the historical determinants of performance for the asset class. One way to determine the most influential factors that have driven the performance of the equity markets is to perform an analysis of variance, which utilizes statistical methods to attribute the variance of a variable (in this case, stock returns in an index) to certain factors, such as sector, style, and market cap. After accounting for these specific factors, the residual or remaining value can be attributed to other company-specific factors.

Looking at the various sources of historical stock returns in the U.S. equity market, we find that company-specific factors, such as earnings, sales, product innovation, free cash flow, and inventory levels, account for about 57% of the variability of historical returns, on average (Exhibit 1). Due to the large influence of company-specific factors, individual stock investments tend to be highly volatile, and this helps explain why many investors make it a matter of policy to diversify their exposure to equities.

**EXHIBIT 1: Sector exposure is the second-largest determinant in the variability of equity market returns.**


<table>
<thead>
<tr>
<th>Company</th>
<th>Sector</th>
<th>Market Cap</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>57%</td>
<td>21%</td>
<td>11%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Our analysis of the various sources of historical return variability in the U.S. equity market shows that sector exposure (21%) was the second most important factor. The earnings of various companies within a given sector or industry often react similarly to the same economic, regulatory, tax, and geopolitical factors. Yet these same factors may have little influence on earnings in other sectors. For example, the Federal Reserve’s monetary policies often have a significant impact on earnings for banks, but have far less impact on earnings for chemical manufacturers. Style (11%) and capitalization (11%) factors also have been important, albeit less powerful, determinants of equity returns.

**Six differentiating attributes of sector-based portfolio construction**

Sector exposure has been a significant driver of equity returns over time because of the distinct risk and performance characteristics of the 11 major sectors. It is these characteristics—or attributes—that also make sectors compelling building blocks for creating an equity portfolio because they allow an investor to generate a target return and manage the portfolio’s risk exposure. (Note: Investing in a single sector can result in increased volatility because of its narrow concentration.)

1. **Intuitive, stable businesses**

   Sector classifications tend to be fairly intuitive, as most investors are able to identify an energy or health care company based on the nature of its business operations. For instance, companies that manufacture products and services that meet basic human needs—such as food or detergent producers, electric utilities, and hospitals—are fairly easy to identify as being in the consumer staples, utilities, and health care sectors, respectively.

   As a result, sector components rarely, if ever, change.

   Style box classifications, on the other hand, are based on
equally changing, backward-looking quantitative financial data, meaning the classifications tend to shift over time (Exhibit 2).

The straightforward equity classification of sectors may allow investors to clearly understand what they own, which may give them more confidence in building an equity portfolio suitable to their objectives. Meanwhile, the relative stability of a sector classification framework may provide allocators with very precise—and potentially effective—exposure when constructing equity portfolios.

2. Consistent performance drivers

Although company-specific factors lead to stock performance differentiation, companies within each sector also can be influenced by similar macro drivers of revenue and profit growth; hence, the stocks often react similarly to changes in the economic cycle. For example, consumer staples companies tend to have consistent demand for their products, which typically leads to stable revenues,

**EXHIBIT 2: Sector constituents rotate far less frequently than style box constituents.**


![Graph showing the number of companies that switch classification between style box and sector changes.](chart)


**Equity classification systems in the modern era**

Investment classification systems attempt to group securities according to similar attributes or factors. Within the equity universe, the “style box” classification and sector/industry classification are widely used.

**Style box classification** generally relies on a combination of financial statistics and consensus earnings-growth estimates to determine whether the stock of a company is classified as “value” (i.e., undervalued based on the underlying financial health of the company) or “growth” (i.e., high earnings growth prospects). Sometimes a company’s stock may be categorized as having both value and growth characteristics, and part of its market capitalization is apportioned to both “styles” (i.e., blended category). Market capitalization further divides the equity market based on the total value of outstanding shares of a company, and divides the universe into three buckets: small, mid, and large. This classification system results in a grid with nine individual boxes based on style and market capitalization.

**Sector and industry** classifications generally rely on a hierarchical approach that groups each company into one of 11 sectors based on the nature of its business—communication services, consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, real estate, and utilities. Beneath each sector lies another layer, typically referred to as industry groups, which consist of multiple industries, and which subsequently can include multiple sub-industries. The Global Industry Classification Standard methodology assigns a stock to a sub-industry based on its principal business activity, identified by analyzing the relative importance of the sources of its revenues and earnings.
earnings, and stock performance relative to other sectors. A toothpaste producer is typically not going to see major swings in its earnings or stock price, whatever the trajectory of the economy, because few people in the developed world are likely to cut back on a basic need such as toothpaste, even during tough times.

At the same time, although some style box classifications tend to have higher exposure to certain sectors, there are companies in all 11 sectors that are represented in each style category. This diverse style box composition can make the earnings and stock prices of style box components somewhat less uniformly influenced by certain factors, such as shifts in the economy. Roughly one-third of companies within the Russell 3000® Index are classified as both value and growth companies, with portions of their market capitalization assigned to each category. As a result of the diverse makeup of the style box components, there can be fewer consistent patterns of earnings results and stock performance amid fluctuations in an economy.

3. High performance dispersion

Equity sectors tend to have significant performance dispersion relative to each other, which is a key attribute for any return-seeking equity allocation strategy. Historical analysis shows that the dispersion of returns between the best- and worst-performing sectors (average = 11%) has been more than double that of style box categories (average = 5%)—see Exhibit 3. By the nature of their composition, style box-oriented strategies are diversified across multiple sectors, leading to relatively lower performance dispersion.

Exhibit 3: Equity sectors have had more than twice the performance dispersion of style box indexes, providing investors with more opportunity to seek returns and manage risk.

Dispersion Between Best- and Worst-Performing Sectors & Style Box Indices (1999–2018)

Return Dispersion % (Max–Min)

U.S. equity market is represented by the top 3,000 U.S. stocks as measured by market capitalization and sectors are defined by the GICS. Style box categories are represented by the following indices: large cap growth: Russell Top 200® Growth; large cap value: Russell Top 200 Value; mid cap growth: Russell Midcap® Growth; mid cap value: Russell Midcap Value; small cap growth: Russell 2000® Growth; and small cap value: Russell 2000 Value. Past performance is no guarantee of future results. It is not possible to invest directly in an index. All market indices are unmanaged. Index performance is not meant to represent that of any Fidelity mutual fund. Source: Fidelity Investments, as of Dec. 31, 2018.
The wider return dispersion of individual sectors relative to style box components suggests that sectors tend to be more volatile, but this dispersion also allows investors the opportunity to have greater control in managing a portfolio’s risk exposure and greater opportunity to generate alpha. As with any strategy that deviates from a market-cap-weighted benchmark, it’s also important for investors to recognize that active sector allocations can potentially lead to increased return variance over short-term periods. For this reason, making effective equity sector allocations to achieve an investment objective may be most suitable for investors who have the appropriate experience, investment tools, and research capabilities.

4. Clear patterns of volatility
Equity sectors historically have demonstrated some clear patterns of volatility. Exhibit 4 shows the historical average standard deviation of returns for each sector. Although the volatility of sectors can change from year to year, some sectors have historically been more volatile than others, and there has been some consistency among sectors.

In general, more economically sensitive sectors, such as energy, materials, and information technology, tend to show more volatility than the average level of volatility for the broader U.S. equity market in any given year, while defensive-oriented sectors, such as consumer staples and utilities, tend to show less volatility than the market average. Information technology has tended to be the most volatile sector, while consumer staples has tended to be the least volatile sector.

5. Low performance correlations
To achieve an adequately diversified equity portfolio, investors need to evaluate not only the dispersion of returns, but also the correlations of those returns. Equity sectors have exhibited low return correlations over extended time periods. From 1999 through 2018, all 11 sectors showed performance correlations of 0.5 or lower versus at least one other sector (Exhibit 5).

The most dramatic examples of low correlations among individual sectors tend to be between the most and least economically sensitive sectors. For example, the consumer staples sector historically has been one of the least economically sensitive sectors; consumers tend to be more willing to curtail spending on discretionary items before failing to buy shampoo. Thus, since 1999, consumer staples have had a very low correlation to information technology, one of the more economically sensitive sectors. Further, sectors have shown generally lower return correlations compared with style box categories.
Historically, the average correlation of sectors versus one another was 0.54, while the average correlation among style box benchmarks over the same period was 0.78.\textsuperscript{6}

Consistent volatility patterns and low correlations are attractive features that can enhance the ability to manage portfolio risk and reap diversification benefits. While an investment in any single sector may not be an appropriate level of diversification for an equity portfolio, diversified exposure across sectors may allow an investor to achieve a desired level of portfolio diversification and volatility. For example, an investor looking to maintain some exposure to equities and, at the same time, lower his or her equity risk profile, might be more confident in tilting allocations toward sectors with historically lower volatility. Historically, 3 of the 11 sectors (consumer staples, utilities, health care) have displayed lower volatility than the very broadly diversified U.S. equity market (Exhibit 4).

6. Sources of portfolio efficiency
The attributes of equity sectors make them effective building blocks for investors looking to create an efficient equity portfolio—one that maximizes risk-adjusted returns for any given level of risk. The efficient frontier, a

EXHIBIT 5: Return correlations historically have been lower among sectors than style boxes.


<table>
<thead>
<tr>
<th></th>
<th>Comm Srvcs</th>
<th>Cons Disc</th>
<th>Cons Stpls</th>
<th>Energy</th>
<th>Financials</th>
<th>Health Care</th>
<th>Industrials</th>
<th>Info Tech</th>
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<td>Info Tech</td>
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<tr>
<td>Materials</td>
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<td>0.40</td>
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<td>0.20</td>
<td>0.34</td>
<td>0.47</td>
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</table>

Performance Correlations of U.S. Style Box Monthly Returns (1999–2018)

<table>
<thead>
<tr>
<th></th>
<th>Small-Cap Growth</th>
<th>Small-Cap Value</th>
<th>Mid-Cap Growth</th>
<th>Mid-Cap Value</th>
<th>Large-Cap Growth</th>
<th>Large-Cap Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-Cap Growth</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<td>Small-Cap Value</td>
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<tr>
<td>Mid-Cap Growth</td>
<td>0.95</td>
<td>0.74</td>
<td>1.00</td>
<td></td>
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<tr>
<td>Mid-Cap Value</td>
<td>0.73</td>
<td>0.91</td>
<td>0.73</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large-Cap Growth</td>
<td>0.79</td>
<td>0.64</td>
<td>0.88</td>
<td>0.72</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Large-Cap Value</td>
<td>0.64</td>
<td>0.79</td>
<td>0.68</td>
<td>0.91</td>
<td>0.77</td>
<td>1.00</td>
</tr>
</tbody>
</table>

U.S. equity market is represented by the top 3,000 U.S. stocks as measured by market capitalization and sectors are defined by the GICS. Style box categories are represented by the following indices: large cap growth: Russell Top 200 Growth; large cap value: Russell Top 200 Value; mid cap growth: Russell Midcap Growth; mid cap value: Russell Midcap Value; small cap growth: Russell 2000 Growth; and small cap value: Russell 2000 Value. \textit{Past performance is no guarantee of future results}. It is not possible to invest directly in an index. All market indices are unmanaged. Index performance is not meant to represent that of any Fidelity mutual fund. Correlation coefficient is the interdependence of two random variables that range in value from −1 to +1, indicating perfect negative correlation at −1, absence of correlation at 0, and perfect positive correlation at +1. Source: Morningstar, as of Dec. 31, 2018.
hallmark of mean-variance optimization, depicts optimal portfolios that maximize investor return for a given level of volatility (or minimize volatility for a given level of return). Efficient frontiers created using U.S. equity sectors as portfolio building blocks provided potential asset mixes that offer significantly different volatility exposure than those created using style box components, and superior return potential at similar levels of volatility (Exhibit 6). On the other hand, style box frontiers show a tighter range of volatility levels, reflecting less differentiation among style box components. The optimal portfolio mixes shown in Exhibit 6 have the benefit of 20/20 hindsight, as an investor would need to pick the right mix of sectors to achieve a portfolio on the efficient frontier. But the opportunity to create more efficient portfolios using a sector framework has held consistent over the time period shown, and throughout other time periods analyzed.

**EXHIBIT 6: Portfolios created with equity sectors as building blocks were consistently more efficient—providing higher return and lower risk—than those created using style box components from 2000 to 2018.**


**Investment implications**

Our analysis shows that after company-specific factors, sector exposure has been the most significant driver of the variability in equity market returns over time—even more so than style and market capitalization. The attributes of equity sectors, and their distinct risk and return characteristics, provide investors with the opportunity to create an equity portfolio with favorable risk-adjusted performance. For its part, style box portfolio construction provides investors with a framework to create an equity portfolio, and continues to remain a viable way to achieve a level of diversification. At a minimum, though, putting greater emphasis on sector exposure—along with style and market cap—can enhance an investor’s ability to evaluate and manage risk. The potential to generate alpha and have greater control in managing a portfolio’s risk exposure should motivate more investors to give increased consideration to sectors when constructing an allocation to equities.

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*Fidelity quantitative analyst Zhitong Zhang, investment product director Michael Mulcahy, and sector and ETF specialist John Gagliano also contributed to this article.*
Endnotes
1. Diversification does not ensure a profit or guarantee against loss.
3. Source: Fidelity Investments, as of Dec. 31, 2018. Alpha: the excess return over a benchmark, taking into account the risk taken to obtain that return.
4. Return correlations can converge over shorter time periods.
5. Sectors defined by GICS for the top 3,000 U.S. stocks according to market capitalization. Style box categories are represented by: large-cap growth—Russell Top 200 Growth Index; large-cap value—Russell Top 200 Value Index; mid-cap growth—Russell Midcap Growth Index; mid-cap value—Russell Midcap Value Index; small-cap growth—Russell 2000 Growth Index; small-cap value—Russell 2000 Value Index. Source: Fidelity Investments, as of Dec. 31, 2018.

Definitions
Mean-variance optimization mathematically accounts for expected return (mean) and risk (variance) in an attempt to find optimal portfolios along the so-called efficient frontier with the maximum return for the minimum risk. Standard deviation shows how much variation there is from the average (mean or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas a high standard deviation indicates that the data points are spread out over a large range of values. Correlation coefficient measures the interdependencies of two random variables that range in value from −1 to +1, indicating perfect negative correlation at −1, absence of correlation at 0, and perfect positive correlation at +1.

Sectors are defined as follows:
- **Communication services:** companies that facilitate communication or provide access to entertainment content and other information through various types of media.
- **Consumer discretionary:** companies that manufacture goods or provide services that people want but don’t necessarily need, such as high-definition televisions, new cars, and family vacations; businesses tend to be the most sensitive to economic cycles.
- **Consumer staples:** companies that provide goods and services that people use on a daily basis, like food, clothing, and other personal products; businesses tend to be less sensitive to economic cycles.
- **Energy:** companies whose businesses are dominated by either of the following activities: the construction or provision of oil rigs, drilling equipment, and other energy-related services and equipment, including seismic data collection; or the exploration, production, marketing, refining, and/or transportation of oil and gas products, coal, and consumable fuels.
- **Financials:** companies involved in activities such as banking, consumer finance, investment banking and brokerage, asset management, insurance and investments, and real estate, including REITs.
- **Health care:** companies in two main industry groups: health care equipment suppliers, manufacturers, and providers of health care services; and companies involved in research, development, production, and marketing of pharmaceuticals and biotechnology products.
- **Industrials:** companies whose businesses manufacture and distribute capital goods, provide commercial services and supplies, or provide transportation services. These companies are engaged in a wide range of commodity-related manufacturing.
- **Real estate:** companies in two main industry groups—real estate investment trusts (REITs), and real estate management and development companies.
- **Utilities:** companies considered to be electric, gas, or water utilities, or companies that operate as independent producers and/or distributors of power.

Investing involves risk, including risk of loss. Past performance is no guarantee of future results. Diversification and asset allocation do not ensure a profit or guarantee against loss.

Index definitions
- **Russell 2000® Index** is a market capitalization–weighted index of smaller company stocks. **Russell 2000® Growth Index** is an unmanaged index that measures the performance of those Russell 2000 Index companies with higher price-to-book ratios and higher forecasted growth values. **Russell 2000® Value Index** is an unmanaged index that measures the performance of those Russell 2000 Index companies with lower price-to-book ratios and lower forecasted growth values.
- **Russell Midcap® Index** measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 26% of the total market capitalization of the Russell 1000 Index. **Russell Midcap® Growth Index** is an unmanaged index that measures the performance of those Russell Midcap Index companies with higher price-to-book ratios and higher forecasted growth values. **Russell Midcap® Value Index** is an unmanaged index that measures the performance of those Russell Midcap Index companies with lower price-to-book ratios and lower forecasted growth values.
- **Russell 3000® Index** is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and is completely reconstituted annually to ensure that new and growing equities are reflected. **Russell Top 200® Index** measures the performance of the largest-cap segment of the U.S. equity universe; a subset of the Russell 3000 Index. **Russell Top 200® Value Index** is an unmanaged index that measures the performance of those Russell Top 200 Index companies with higher price-to-book ratios and higher forecasted growth values. **Russell Top 200® Growth Index** is an unmanaged index that measures the performance of those Russell Top 200 Index companies with lower price-to-book ratios and lower forecasted growth values. **S&P 500® Index**, a market capitalization–weighted index of common stocks, is a registered service mark of The McGraw-Hill Companies, Inc., and has been licensed for use by Fidelity Distributors Corporation. All indices are unmanaged. You cannot invest directly in an index.

Stock markets, especially non-U.S. markets, are volatile and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Foreign securities are subject to interest-rate, currency-exchange-rate, economic, and political risks, all of which are magnified in emerging markets.

Sector investing can be volatile because of its narrow concentration in a specific industry. Investing involves risk, including risk of loss. Investment decisions should be based on an individual’s own goals, time horizon, and tolerance for risk. The securities of smaller, less well known companies can be more volatile than those of larger companies. Growth stocks can perform differently from the market as a whole and from other types of stocks, and can be more volatile than other types of stocks. Value stocks can perform differently from other types of stocks and can continue to be undervalued by the market for long periods of time.

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