



An analysis of dividend-oriented equity strategies

Vanguard Research

June 2017

Todd Schlanger, CFA; Savas Kesidis

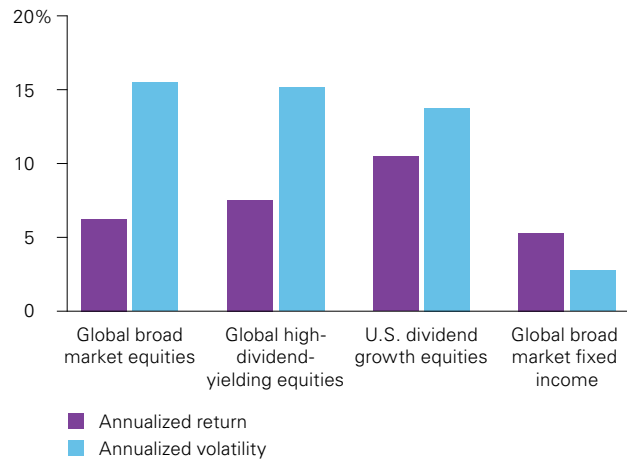
- We examine two popular dividend strategies, high-dividend-yielding and dividend growth equities, exploring their similarities and differences and considering implications for their use in the context of portfolio construction relative to both high-quality fixed income and equities.
- Our analysis finds that absent beneficial tax treatments, dividend-oriented equity strategies are best viewed from a total-return perspective, taking into account returns stemming from both income and capital appreciation.
- Substituting dividend-oriented equities for fixed income significantly raises a portfolio's risk profile and diminishes its downside protection. Dividend-oriented equities also tend to have greater interest rate sensitivity than other equities, making their performance more susceptible to changes in bond yields.
- Compared with other equities, the performance of these strategies has been time-period-dependent and largely explained by their exposure to a handful of equity factors: value and lower volatility for high-dividend-yielding equities and lower volatility and quality for dividend growth equities.

This document is published by The Vanguard Group, Inc., the indirect parent company of Vanguard Investments Canada Inc. It is for educational purposes only and is not a recommendation or solicitation to buy or sell any security, including any security of any investment fund. The information is not investment advice, nor is it tailored to the needs or circumstances of any particular investor. Research published by The Vanguard Group, Inc., may not be specific to the context of the Canadian market and may contain data and analysis specific to non-Canadian markets and products.

A growing interest in dividend strategies and their implications

Dividend strategies have drawn increasing interest from investors around the world, for two primary reasons.¹ First, global bond yields have been in secular decline for more than two decades and have fallen below 2%, spurring a hunt for yield that has led investors to equity strategies that offer dividend yields, on average, of between 2% and 4%. Second, two common approaches to dividend investing—an emphasis on stocks with high dividend yields, and on those with a history of growing their dividends—have produced higher returns, with less volatility, than the global equity market, resulting in higher risk-adjusted returns, as shown in **Figure 1**. These strategies have also handily outperformed the global bond market.

Figure 1. The performance of dividend-oriented equity strategies has been strong



Notes: Data cover January 1, 1997, through December 31, 2016. Global broad market equities are represented by the MSCI World Index, global high-dividend-yielding equities are represented by the MSCI World High Dividend Yield Index, U.S. dividend growth equities are represented by the Standard & Poor's 500 Dividend Aristocrats Index, and global broad market fixed income is represented by the Bloomberg Barclays Global Aggregate Bond Index Hedged in USD.

Sources: Vanguard calculations, using data from Morningstar, Inc.; Bloomberg; and Macrobond.

Notes on risk

All investing is subject to risk, including the possible loss of the money you invest. Past performance is not a guarantee of future success. Diversification does not ensure a profit or protect against a loss. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk.

¹ Net cash flows into dividend-oriented equity funds/ETFs made up 14% of all worldwide equity cash flows over the five years ended December 31, 2016, punching significantly above their 7.4% average equity fund/ETF asset weight. Dividend-oriented equity funds are defined as equity funds/ETFs that have the word *dividend*, *income*, and/or *yield* (or their abbreviations) in their names.

Sources: Vanguard calculations, using data from Morningstar, Inc.

The growing interest in dividend-oriented equities raises questions about these strategies and their role in a portfolio. We introduce both forms of dividend investing—high dividend yield and dividend growth—and explore their similarities and differences before examining their risk and return characteristics. We consider their potential uses as a supplement to, or substitute for, a portfolio’s equity and fixed income allocations. Our analysis leads to the following conclusions:

- When considering dividend-oriented equity strategies, it is best to view them from a total-return perspective, taking into consideration returns from income and capital appreciation.
- Dividend-oriented equities can significantly raise a portfolio’s risk profile and reduce its downside protection if used as a substitute for fixed income.
- Dividend-oriented equities tend to have greater interest rate sensitivity (i.e. greater duration) than other equities, making their performance more susceptible to changes in bond yields.
- The strong historical performance of dividend-oriented strategies has been time-period-dependent, with much of their outperformance realized during the technology stock bear market of 1999–2000.
- The performance of dividend-oriented strategies can be largely explained by their exposure to a small number of equity factors: value and lower volatility for high-dividend-yielding equities, and lower volatility and quality for dividend growth equities. An emphasis on these strategies therefore represents, in effect, a conviction that these factors will continue to outperform.

We acknowledge the importance of taxes to dividend income but have excluded tax considerations from our analysis because they can vary widely by tax regime and investor circumstances (see the box below for more information). We seek to provide analysis and perspective that is relevant to a global audience, using global data when possible and regional data where appropriate. Where a global data series is not sufficiently long, such as for dividend growth equities, we use U.S. data, as the United States is the largest developed equity market and has a longer series of historical data. (See the Appendix on page 13 for our full data and methodology.)

The importance of taxes to dividend income

The tax treatment of dividends versus capital gains, which varies by country, can be an important consideration for some investors. For example, both the United States and Canada tax dividend income at a lower rate than ordinary income, on the basis that company profits have already been taxed. Australia and New Zealand also incentivize high dividend income through franking credits. On the other hand, the United Kingdom applies a higher tax rate on dividends than on capital gains, along with a smaller tax-free allowance.

Generally, these differing tax treatments are of greater consideration for investors who have a higher share of their assets in taxable accounts, and in cases when the difference between taxes on income and capital gains is larger.

Two methods of dividend investing

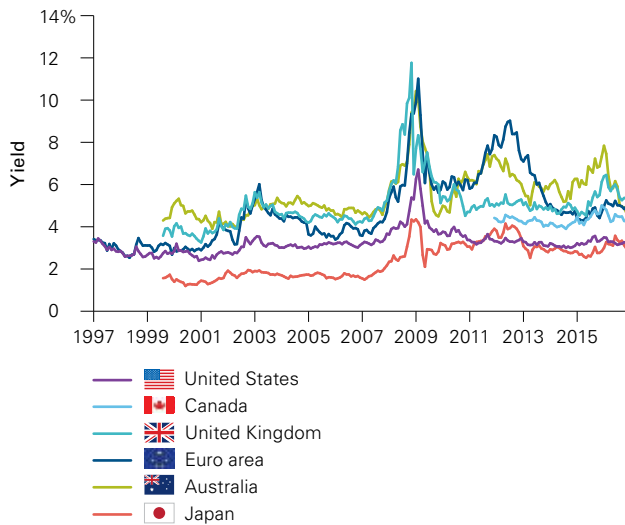
Dividend investing generally takes one of two approaches. The first, known as high-dividend-yielding equities, invest in companies with above-average dividend yields, which have most recently been averaging about 4% depending on the market, as shown in **Figure 2a**. Yields from these strategies are also about 50% higher on average than those available in local broad equity markets, as shown in **Figure 2b**. For example, the 2% yield from high-dividend-yielding equities in Japan may seem low compared with other regions, but it is about twice the yield available from broad market Japanese equities.

Although the focus of high-dividend-yielding equities is often their income potential, it is important to note that higher yields should not be expected to translate into higher returns (see the box on page 5 for more information).

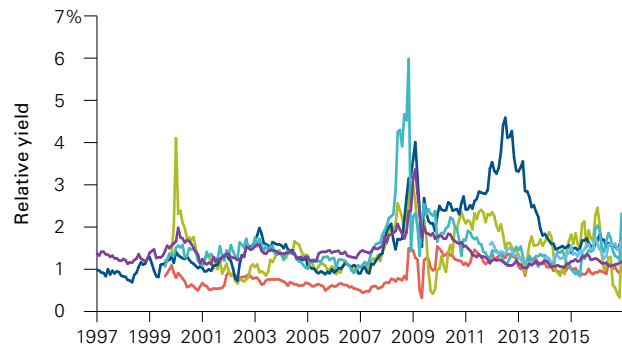
The second form of dividend investing involves dividend growth-oriented equities. These strategies invest in companies that have a history of increasing their dividends over 10 to 25 years and may or may not have a high dividend yield. In fact, dividend growth equities tend to yield less than global broad market equities. Proponents of this style of investing believe that a record of continuous dividend payments is an important indicator of a company's quality. Such companies tend to be among the most mature and would otherwise be known as blue-chip stocks.

Figure 2. High-dividend-yielding equities around the globe

a. Yields by region



b. Yields relative to local broad equity markets



Notes: Data cover January 1, 1997, through December 31, 2016, for the United States and the euro area; August 1, 1999, through December 31, 2016, for the United Kingdom, Australia, and Japan; and December 1, 2011, through December 31, 2016, for Canada. Each country is represented by the standard version (Figure 2a) and high-dividend-yield version (Figure 2b) of the following indexes: U.S. equities by the MSCI USA Index, Canadian equities by the MSCI Canada Index, U.K. equities by the MSCI United Kingdom Index, euro area equities by the MSCI EMU Index, Australian equities by the MSCI Australia Index, and Japanese equities by the MSCI Japan Index.

Sources: Vanguard calculations, using data from Macrobond.

A dividend does not create wealth

The focus of high-dividend-yielding equities is often their income potential, but higher yields do not necessarily translate into higher returns. This is because, for all companies, whether or not to pay a dividend is a capital budgeting decision. When a stock goes ex dividend, its price falls by the same amount as the dividend payment.² Therefore, no wealth is created through paying a dividend; rather, the payment reduces retained earnings.

Capital that is not paid out as dividends can be used to either reinvest in the business or buy back shares, and both actions can increase the company's share price.³ For this reason, Miller and Modigliani (1961) argued the "dividend irrelevance theory" that investors should be indifferent as to whether returns arise from dividend payouts or capital gains. For this reason, dividend-oriented equities are best viewed from a total return perspective (Jaconetti et al., 2012, and Schlanger et al., 2016).

Figure 3 shows returns stemming from income and capital appreciation for all the constituents in the global broad equity market, bucketed into four yield quartiles, from highest to lowest. Across the quartiles, income and capital returns showed little relationship, and paradoxically, the highest- and lowest-yielding quartiles resulted in the closest total returns.⁴

Figure 3. Median capital and income return of global equities, by yield quartile



Notes: Data cover January 1, 1997, through December 31, 2016. Global equities are represented by the constituents of the MSCI World Index.

Sources: Vanguard calculations, using data from FactSet.

² Ex-dividend is a classification when a declared dividend belongs to the seller and not the buyer. An equity is given ex-dividend status if an investor has been confirmed by the company to receive the dividend.

³ Grullon and Michaely (2002) explored the relationship between dividend payouts and share repurchases, noting evidence that investors viewed dividends and repurchases as substitutes.

⁴ We are also not suggesting that equities across the yield spectrum will produce identical total returns, as other return drivers, such as a portfolio's underlying factor exposures, may be involved.

Dividend strategies in a portfolio

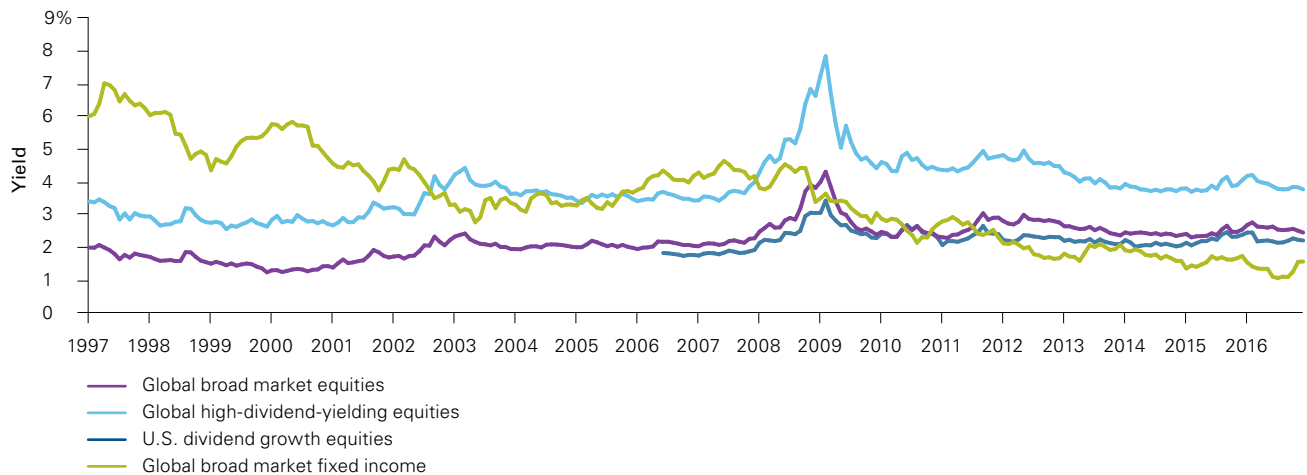
Incorporating dividend-oriented equities into investment portfolios can generally be done in one of two ways. The first involves substituting part or all of the fixed income allocation for high-dividend-yielding equities, to try either to increase the portfolio’s yield or to reduce its sensitivity to changes in interest rates.

The second involves allocating to dividend-oriented equities in the belief that they benefit the equity portfolio’s return or risk profile (or both).

Dividend strategies as a supplement to, or substitute for, fixed income

For an investor who is considering substituting dividend-paying equities for high-quality bonds, both strategies would in all likelihood produce the intended result of higher portfolio income, as shown in **Figure 4**.⁵ The downside is that the substitution may expose the investor to unintended consequences, such as losing the diversification benefits provided by high-quality bonds. **Figure 5** illustrates this by examining periods of market stress for global equities and bonds, defined as the bottom 25% of quarterly returns. This shows that high-quality global bonds provided a significantly narrower range of outcomes and counterbalancing than either of the dividend-oriented equity strategies, even during the worst quarterly periods for global broad market bonds.

Figure 4. A secular decline in global bond yields has increased the appeal of dividend-paying equities



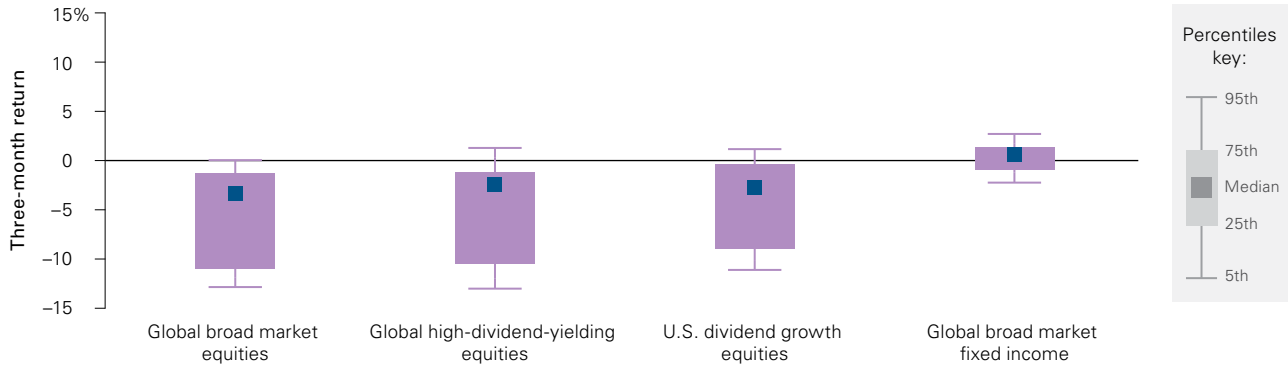
Notes: Data cover June 1, 2006, to December 31, 2016, for U.S. dividend growth equities and January 1, 1997, to December 31, 2016, for all other categories shown. Global broad market equities are represented by the MSCI World Index, global high-dividend-yielding equities are represented by the MSCI World High Dividend Yield Index, U.S. dividend growth equities are represented by the NASDAQ US Dividend Achievers Select Index, and global broad market fixed income is represented by the Bloomberg Barclays Global Aggregate Bond Index Hedged in USD.

Sources: Vanguard calculations, using data from Morningstar, Inc.; Bloomberg; and Macrobond.

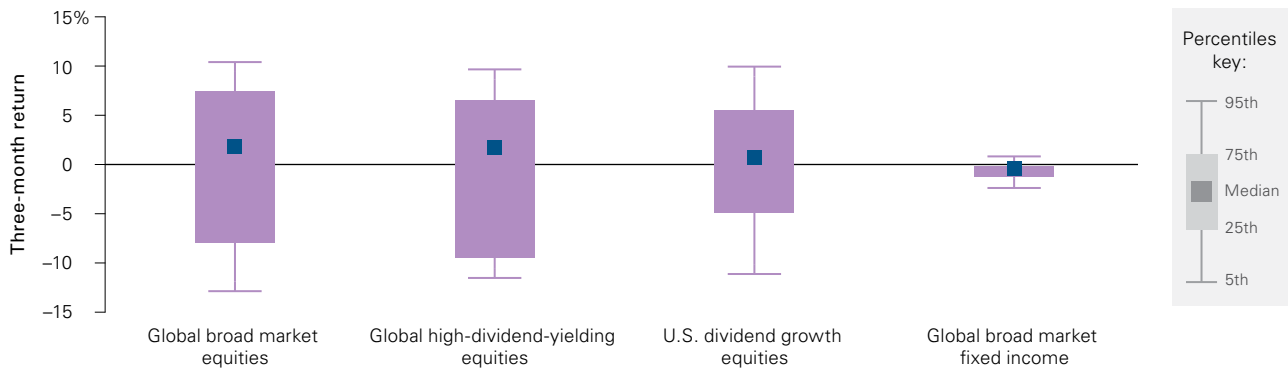
⁵ Hartzmark and Solomon (2016, revised 2017) found that demand for dividends is systematically higher when interest rates are low and that investors treat dividends as a separate stable income stream.

Figure 5. Performance during the worst quarters of the last two decades

a. For global broad market equities



b. For global broad market bonds



Notes: Data cover January 1, 1997, through December 31, 2016. Global broad market equities are represented by the MSCI World Index, global high-dividend-yielding equities are represented by the MSCI World High Dividend Yield Index, U.S. dividend growth equities are represented by the S&P 500 Dividend Aristocrats Index, and global broad market fixed income is represented by the Bloomberg Barclays Global Aggregate Bond Index Hedged in USD.

Sources: Vanguard calculations, using data from Morningstar, Inc.; Bloomberg; and Macrobond.

Investors may also substitute dividend-oriented equities for bonds to try to reduce a portfolio’s sensitivity to and potential losses from rising interest rates—especially in today’s environment. However, it is worth reemphasizing that the potential drawdown risk of dividend-oriented equities far exceeds that of high-quality bonds (as shown in Figure 5).

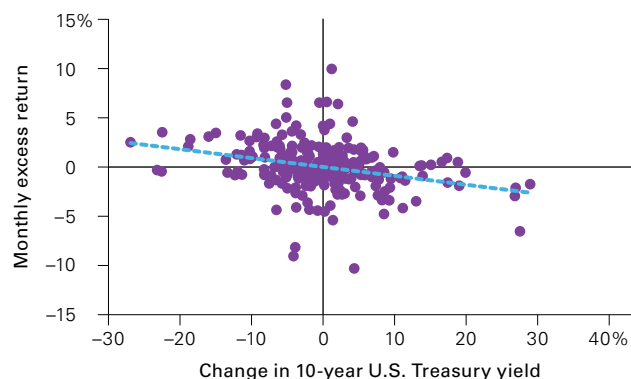
In addition, what is often overlooked is that dividend-oriented equities tend to have greater interest rate sensitivity (that is, duration) than other equities. We illustrate this in **Figure 6** by using U.S. data to compare the excess returns of each strategy relative to the changes in the 10-year U.S. Treasury yield.⁶

The downward-sloping trend lines in each chart show that dividend-oriented equities tend to have greater interest rate sensitivity than other equities, experiencing greater price declines when interest rates rise and greater price increases when rates fall.

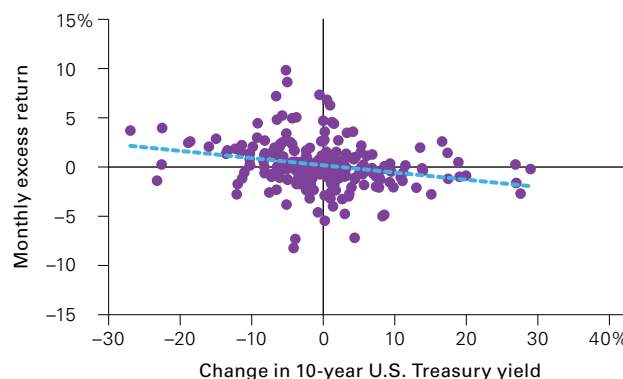
These results are generally consistent with Jiang and Sun (2015), who found evidence of “reaching for dividends” when interest rates fall and investors allocate more of their portfolios to dividend-oriented equities. The resulting higher demand for high-dividend-yielding equities appears to increase the sensitivities of their prices to interest rate changes, contributing to their longer duration.

Figure 6. Interest rate sensitivity of dividend-oriented equity strategies

a. U.S. high-dividend-yielding equities



b. U.S. dividend growth equities



Notes: Data cover January 1, 1997, through December 31, 2016. U.S. high-dividend-yielding equities are represented by the MSCI USA High Dividend Yield Index, and U.S. dividend growth equities are represented by the S&P 500 Dividend Aristocrats Index. Excess returns are measured relative to the MSCI USA Index for high-dividend-yielding equities and the S&P 500 Index for U.S. dividend growth equities.

Sources: Vanguard calculations, using data from Morningstar, Inc., and Macrobond.

⁶ We use U.S. data here because no global interest rate exists and because at any point in time, economic environments around the world will differ. That is, rates may be rising in one country and falling in another.

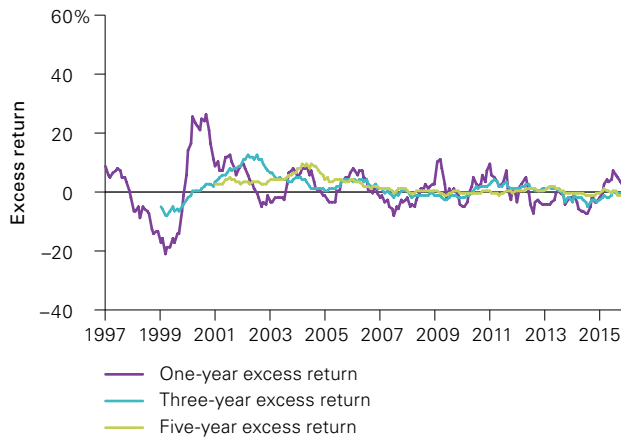
Dividend strategies as a supplement to, or substitute for, broad market equities

Another way for investors to use dividend-oriented equities is as part of, or for their entire, equity allocation. This could be based on a desire to increase portfolio income (as Figure 4 showed for high dividend yield) or a belief that these strategies will perform better than broad market equities given their outperformance over our analysis period.

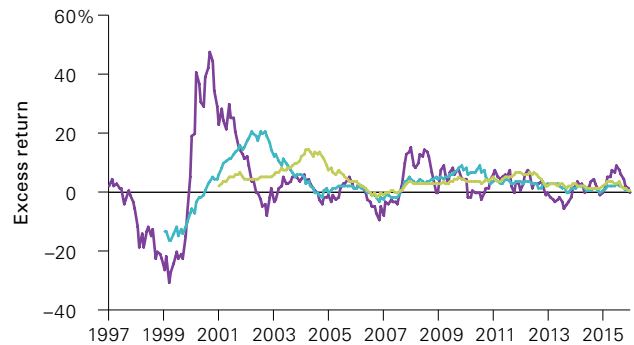
What is frequently overlooked, however, is that the performance of these strategies tends to vary over time and from one period to the next, and that the majority of the outperformance came from just one period: the technology stock bear market of 1999–2000, when both strategies experienced a less significant drawdown than the broad market, as shown in **Figure 7**. This is important because during the subsequent bear market—the 2008–2009 global financial crisis—dividend-oriented equities did not provide the same cushion and underperformed the broader equity markets.

Figure 7. Rolling excess returns of dividend strategies

a. Global high-dividend-yielding equities



b. U.S. dividend growth equities



Notes: Data cover January 1, 1997, through December 31, 2016. Global high-dividend-yielding equities are represented by the MSCI World High Dividend Yield Index, and U.S. dividend growth equities are represented by the S&P 500 Dividend Aristocrats Index. Excess returns are measured relative to the MSCI World Index for global high-dividend-yielding equities and the S&P 500 Index for U.S. dividend growth equities.

Sources: Vanguard calculations, using data from Morningstar, Inc., and Macrobond.

The relative volatility of dividend-oriented equities has also varied considerably with time. For example, looking at rolling three-year periods, excess volatility was more than 1% higher or lower than the parent index over 58% of those periods for high-dividend-yielding equities and 56% for dividend growth equities. The relative drawdown and volatility dynamics of dividend-oriented equities are important because if the objective is to improve risk-adjusted returns, assumptions need to be made about not only future returns but also future risk.

What drove each strategy's performance?

Examining the source of this performance requires looking at each strategy's underlying factor exposures, which can be thought of as the underlying driver of an investment portfolio's risk and return (Pappas and Dickson, 2015, and Grim et al., 2017).

To do this, we used regression analysis to identify each strategy's exposure to common factors such as market, value, size, lower volatility, quality, and momentum, as shown in **Figure 8**.⁷

Our factor analysis has two primary implications for investors. First, the analysis had high explanatory power, of 0.95 and 0.89, respectively, meaning the historical performance of these strategies can be largely explained by exposure to these factors.⁸ Second, our analysis yields the specific exposures that resulted in the higher returns and lower volatility discussed previously.

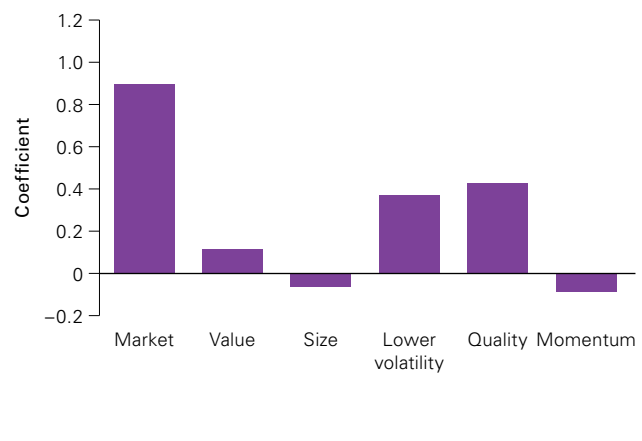
High dividend yield, for example, could be characterized by its exposure to the value and lower volatility factors. Dividend growth, by contrast, had primary exposure to lower volatility and quality and below-average exposure to the market factor.

Figure 8. An analysis of both strategies' factor attribution

a. Global high-dividend-yielding equities



b. U.S. dividend growth equities



Notes: Data cover January 1, 1997, through December 31, 2016. Results represent the difference between each strategy's return and volatility relative to a factor-adjusted index derived from a linear regression of each index's monthly returns in excess of the risk-free. Global high-dividend-yielding equities are represented by the MSCI World High Dividend Yield Index, and U.S. dividend growth equities are represented by the S&P 500 Dividend Aristocrats Index. Factors for the global high-dividend-yielding equities are derived as follows: market, MSCI World Index; size, MSCI World Small-Cap Index minus MSCI World Large-Cap Index; value, MSCI World Value Index minus MSCI World Growth Index; lower volatility, MSCI World Minimum Volatility Index minus MSCI World Index; quality, MSCI World Quality Index minus MSCI World Index; and momentum, MSCI World Momentum Index minus MSCI World Index. Factors for U.S. dividend growth equities are derived from the Fama-French factors as follows: market, S&P 500 Index; value, Value minus Growth; size, Small minus Large; lower volatility, Low Risk minus High Risk; quality, Robust Profitability minus Weak Profitability; and momentum, High Momentum minus Low Momentum.

Sources: Vanguard calculations, using data from Thomson Reuters Datastream; Morningstar, Inc.; Macrobond; and Kenneth French's website (mba.tuck.dartmouth.edu/pages/faculty/ken.french/).

⁷ For global high-dividend-yielding equities, we use a minimum-volatility index to represent the lower-volatility factor, although the two approaches differ. A lower-volatility vehicle focuses on stocks that have historically exhibited lower absolute volatility than other stocks. In contrast, minimum-volatility vehicles consider stocks with lower volatility and attractive correlation (diversifying) characteristics to create an equity portfolio with lower absolute risk than the broad market.

⁸ As measured by R-squared, a calculation of how much of a portfolio's performance can be explained by the returns from the analysis.

Conclusion

We explored high-dividend-yielding equities and dividend growth equities, two popular forms of dividend investing that have been gaining increasing attention given low interest rates and a record of strong historical performance.

Our research indicates that, absent beneficial tax treatments, dividend-oriented equity strategies are best viewed from a total-return perspective, taking into consideration returns stemming from both income and capital appreciation. Substituting dividend-oriented equities also significantly raises a portfolio's risk profile when used in place of fixed income and diminishes its downside protection. Dividend-oriented equities also tend to have greater interest rate sensitivity (that is, duration) than other equities, making their performance more susceptible to changes in bond yields.

The strong historical risk-adjusted performance of dividend-oriented strategies has been time-period-dependent, with much of their outperformance realized during the technology stock bear market of 1999–2000. The performance of dividend-oriented strategies has also been highly dependent on a handful of equity factors. Emphasizing these strategies therefore reflects, in effect, a conviction that these factors will continue to outperform.

References

- Anderson, Magnus, Edvard Hall, and Philip Örn, 2010. *The Dividend Effect*, bachelor thesis. Lund, Sweden: Lund University, School of Economics and Management.
- Bruno, Maria A., Colleen M. Jaconetti, and Yan Zilbering, 2012. *Revisiting the '4% Spending Rule.'* Valley Forge, Pa.: The Vanguard Group.
- Black, Fischer, and Myron S. Scholes, 1974. The Effects of Dividend Yield and Dividend Policy on Common Stocks and Returns. *Journal of Financial Economics* 1 (1), 1–22.
- Black, Fischer, 1976. The Dividend Puzzle, *The Journal of Portfolio Management* 2 (2), 5–8.
- Brzeszczynski, Janusz, Kathryn Archibald, Jerzy Gajdka, and Joanna Brzeszczynska, 2008. *Dividend Yield Strategy in the British Stock Market 1994–2007.* Working Paper Series, available at ssrn.com/abstract=1100623.
- Clemens, Michael, 2013. Dividend Investing Performance and Explanations: A Practitioner Perspective. *International Journal of Managerial Finance* 9 (3), 185–197.
- Domian, Dale L., David A. Louton, and Charles E. Mossman, 1998. The Rise and Fall of the “Dogs of the Dow.” *Financial Services Review* 7 (3), 145–159.
- Fama, Eugene F., and Kenneth R. French, 2001. Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay? *Journal of Financial Economics* 60 (1), 3–43.
- Fama, Eugene F., and Kenneth R. French, 1988. Dividend Yields and Expected Stock Returns. *Journal of Financial Economics* 22 (1), 3–25.
- Filbeck, Greg, and Sue Visscher, 1997. Dividend Yield Strategies in the British Stock Market. *The European Journal of Finance* 3 (4), 277–289.
- Filbeck, Greg, and Sue Visscher, 2003. Dividend-Yield Strategies in the Canadian Stock Market, *Financial Analysts Journal* 59 (1), 99–106.
- Gordon, Myron J., 1962. *The Investment, Financing, and Valuation of the Corporation.* Homewood, Ill.: R.D. Irwin.
- Graham, Benjamin, 1949. *The Intelligent Investor: The Definitive Book on Value Investing.* New York: Harper & Brothers.
- Graham, Benjamin, and David Dodd, 1934. *Security Analysis.* New York: McGraw-Hill.
- Grim, Douglas M., Scott N. Pappas, Ravi G. Tolani, and Savas Kesidis, 2017. *Equity Factor-Based Investing: A Practitioner's Guide.* Valley Forge, Pa.: The Vanguard Group.
- Grullon, Gustavo, and Roni Michaely, 2002. Dividends, Share Repurchases, and the Substitution Hypothesis. *The Journal of Finance* 57 (4), 1649–1684.
- Hartzmark, Samuel M., and David H. Solomon, 2016 (revised 2017). *The Dividend Disconnect*, presented at the 7th Miami Behavioral Finance Conference 2016; available at ssrn.com/abstract=2876373.
- Jaconetti, Colleen M., Francis M. Kinniry Jr., and Christopher B. Philips, 2012. *Total-Return Investing: An Enduring Solution for Low Yields.* Valley Forge, Pa.: The Vanguard Group.
- Jiang, Hao, and Zheng Sun, 2015. *Equity Duration: A Puzzle on High Dividend Stocks.* Working paper; available at ssrn.com/abstract=2678958.
- Kahneman, Daniel, and Amos Tversky, 1979. Prospect Theory: An Analysis of Decision Under Risk. *Econometrica* 47 (2), 263–292.
- Knowles, Harvey C., and Petty, Damon H., 1992. *The Dividend Investor: A Safe, Sure Way to Beat the Market.* Chicago: Probus Publishing Co.
- Miller, Merton H., and Franco Modigliani, 1961. Dividend Policy, Growth and the Valuation of Shares. *Journal of Business* 34 (4), 411–433.
- Modigliani, Franco, and Merton H. Miller, 1958. The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review* 48 (3), 261–297.
- O'Higgins, Michael B., and John Downes, 1991. *Beating the Dow.* New York: HarperCollins.
- Pappas, Scott N., and Joel M. Dickson, 2015. *Factor-Based Investing.* Valley Forge, Pa.: The Vanguard Group.
- Philips, Christopher B., Donald G. Bennyhoff, Francis M. Kinniry Jr., Todd Schlanger, and Paul Chin, 2015. *An Evaluation of Smart Beta and Other Rules-Based Active Strategies.* Valley Forge, Pa.: The Vanguard Group.
- Schlanger, Todd, Colleen Jaconetti, Peter Westaway, and Ankul Daga, 2016. *Total-Return Investing: An Enduring Solution for Low Yields.* Valley Forge, Pa.: The Vanguard Group.
- Scott, Brian J., James Balsamo, Kelly N. McShane, and Christos Tasopoulos, 2017. *The Global Case for Strategic Asset Allocation and an Examination of Home Bias.* Valley Forge, Pa.: The Vanguard Group.
- Shefrin, Hersh M., and Meir Statman, 1984. Explaining Investor Preference for Cash Dividends. *Journal of Financial Economics* 13 (2), 253–282.
- Thaler, Richard H., and H.M. Shefrin, 1981. An Economic Theory of Self-Control. *Journal of Political Economy* 89 (2), 392–406.

Appendix. Data and methodology

We analyzed 20 years of historical data, covering January 1, 1997, through December 31, 2016. We used the MSCI World High Dividend Yield Index series to represent global high-dividend-yielding equities. This index series comprises companies with a yield at least 1.3 times that of the parent MSCI World Index, excluding real estate investment trusts (REITs) and taking into consideration the sustainability and persistence of dividends.

Because the MSCI World High Dividend Yield Index is derived from the MSCI World Index, which represents global developed broad market equities, we have presented comparisons relative to the latter index. In sections where we have presented regional data, we have used country-specific indexes derived from the MSCI World Index and MSCI World High Dividend Yield Index series.













U.S. dividend growth equities are represented by the S&P 500 Dividend Aristocrats Index, which represents large-capitalization blue-chip companies within the

S&P 500 Index that have followed a managed-dividends policy of consistently increasing dividends every year for at least 25 years. Each constituent is treated as a distinct investment opportunity by equally weighting the portfolio. Because the S&P 500 Dividend Aristocrats Index is derived from the S&P 500 Index, which represents U.S. large-cap equities, we use it for relative comparisons.

Ideally, we would have used a global index to analyze dividend growth equities. However, because global indexes representing these strategies have been around for only a few years, a lack of adequate historical data would have limited our ability to analyze the strategy over multiple market and economic cycles. In addition, the U.S. equity market is the world's largest, representing 60% of assets across all developed equity markets.⁹

In some cases, for reference we have also shown results for global broad market equities (as represented by the MSCI World Index) and global broad market fixed income (as represented by the Bloomberg Barclays Global Aggregate Bond Index Hedged in USD), because they represent the benefits of global broad market diversification.

Figure A-1. Indexes used to represent equity categories in this analysis

Equity category	Representative index
Global high-dividend-yielding equities	MSCI World High Dividend Yield Index
U.S. high-dividend-yielding equities	MSCI USA High Dividend Yield Index
Canadian high-dividend-yielding equities	MSCI Canada High Dividend Yield Index
U.K. high-dividend-yielding equities	MSCI United Kingdom High Dividend Yield Index
Euro area high-dividend-yielding equities	MSCI EMU High Dividend Yield Index
Australian high-dividend-yielding equities	MSCI Australia High Dividend Yield Index
Japanese high-dividend-yielding equities	MSCI Japan High Dividend Yield Index
Global broad market equities	MSCI World Index
 U.S. broad market equities	 MSCI USA Index
 Canadian broad market equities	 MSCI Canada Index
 U.K. broad market equities	 MSCI United Kingdom Index
 Euro area broad market equities	 MSCI EMU Index
 Australian broad market equities	 MSCI Australia Index
 Japanese broad market equities	 MSCI Japan Index

Sources: Vanguard classifications, using data from MSCI and Macrobond.

⁹ Based on the MSCI USA Investable Market Index (IMI) and MSCI World IMI as of December 31, 2016.

Connect with Vanguard® > vanguardcanada.ca



Investment objectives, risks, charges, expenses and other important information about a fund are in the prospectus; read and consider it carefully before investing.

CFA® is a registered trademark owned by CFA Institute.

© 2017 Vanguard Investments Canada Inc.
All rights reserved.

ISGADOS_CA 062017