



Brad Steiman
Head of Canadian Financial Advisor Services,
Director, Vice President
Dimensional Fund Advisors



Wei Dai
Vice President, Research
Dimensional Fund Advisors

Perspective on Premiums

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Investors may be tempted to extrapolate recent returns into the future, which can lead them to abandon their investment philosophy at potentially inopportune times. While negative outcomes are disappointing, investors should view them with the proper perspective and stay the course.

When you leave your server a tip, do you round it to a whole-dollar amount and often in multiples of \$5? Does a 60th birthday seem more significant than a 59th? If you answer yes to these questions, you're not alone. Most of us prefer round numbers.

This preference leads many investors to review results by calendar year and to consider 10-year periods when evaluating long-term returns. People tend to place greater emphasis on the latest period due to recency bias and to extrapolate recent results into the future. For these reasons, we should put recent performance into the proper perspective.

During the most recent 10 years, equity investors have generally fared well, with the MSCI All Country World Index (IMI) earning an annualized return of 10.32% through 2018. Within equities, small cap stocks and higher profitability stocks have generally delivered outperformance relative to the market, but the underperformance of value stocks has garnered a lot of attention. Value investors may feel somewhat disappointed, as the MSCI All Country World Value

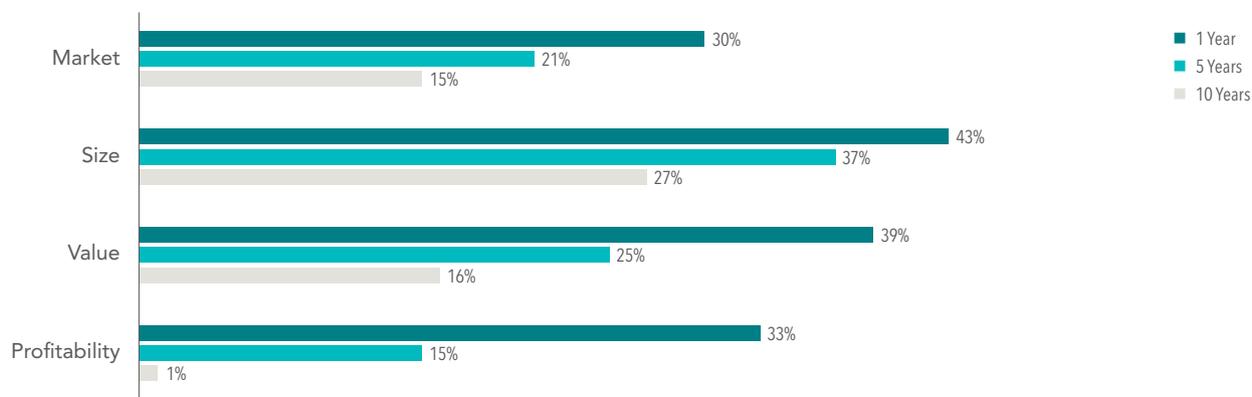
Index (IMI) underperformed the market, delivering an annualized 9.23% over the same period.

We expect positive market, size, value, and profitability premiums,¹ but also recognize that realized premiums are volatile and can sometimes be negative. Although a negative premium can be disappointing, it is not unprecedented—and we can look at historical data to gauge how often each premium has been negative. For example, **Exhibit 1** shows the frequency of experiencing a negative premium in the US over rolling 1-, 5-, and 10-year periods as far back as the data are available. As you can see, negative premiums occur from time to time. While the odds of realizing a positive premium are never guaranteed, they are decidedly in your favor and increase the longer you stay invested.

This analysis looks at each premium individually. What if you integrate all four premiums in pursuit of higher expected returns? A different approach is to calculate the frequency that one, two, three, or all four of the premiums were negative over rolling 10-year periods from July 1963 to December 2018. As shown in **Exhibit 2**,

Exhibit 1: Percentage of Rolling 1-, 5-, and 10-Year Periods with Negative Premiums

US equity market through December 31, 2018



Percentage of rolling 1-, 5-, and 10-year periods with negative premiums is calculated using monthly return data from June 1927 to December 2018 for market, size, and value, and from July 1963 to December 2018 for profitability. Market: Fama/French Total US Market Research Index minus the One-Month US Treasury Bill. Size: Dimensional US Small Cap Index minus the S&P 500 Index. Value: Fama/French US Value Research Index minus the Fama/French US Growth Research Index. Profitability: Dimensional US High Profitability Index minus the Dimensional US Low Profitability Index. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. One-Month US Treasury Bills is the IA SBBI US 30 Day TBill TR USD provided by Ibbotson Associates via Morningstar Direct. Dimensional indices use CRSP and Compustat data. Past performance is no guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. Fama/French indices provided by Ken French. Dimensional and Fama/French index definitions are available in the appendix. S&P data © 2019 S&P Dow Jones Indices LLC, a division of S&P Global.

periods when one of the four premiums was negative—like the most recent decade—occurred in almost half of the rolling 10-year periods. However, the premiums do not move in lockstep, so there were relatively few instances of two negative premiums and virtually no instances of three or four negative premiums.

In all likelihood, any premium that doesn't materialize will get called into question. Plenty of ink will be spilled over scrutinizing the one that had the bad draw, even if that's all it was. The US value premium has been under the microscope lately, but the other premiums have had their turn historically.

From an empirical perspective, a negative 10-year premium is not so far outside the range of outcomes to suggest

that the premium no longer exists. More importantly, we have a sensible framework for expecting positive size, value, and profitability premiums. That framework is valuation theory, which posits that a stock's price reflects the company's expected future cash flows discounted to present value. The discount rate equals an investor's expected return. Therefore, as long as stocks have different expected returns, those with lower prices and higher expected cash flows should have higher expected returns. This framework holds regardless of whether realized premiums have been positive or negative in the recent past.

Exhibit 3 confirms that premiums have, on average, been positive after periods of underperformance,

Exhibit 2: Number and Percentage of Rolling 10-Year Periods with Negative Premiums

US equity market, July 1963–December 2018

One Negative Premium	Two Negative Premiums	Three Negative Premiums	Four Negative Premiums	Total Observations
270	43	1	0	547
49.4%	7.9%	0.2%	0.0%	

Number and percentage of rolling 10-year periods with one, two, three, and four negative premiums are calculated using monthly return data from July 1963 to December 2018. Past performance is no guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. See Exhibit 1 for the definition of the premiums and data source.

Exhibit 3: Subsequent Performance of 10-Year Premiums Following a Negative 10-Year Premium
 June 1927–December 2018

	Number of Observations	Annualized Premiums for the Subsequent 10-Year Periods		
		Average	Minimum	Maximum
Market	123	8.19%	3.17%	14.40%
Size	261	4.64%	-2.76%	11.82%
Value	77	8.31%	2.86%	13.02%

Using monthly return data from June 1927 to December 2018, annualized premiums are calculated over the subsequent 10-year periods following a negative 10-year size, value, or profitability premium. The average, minimum, and maximum are calculated across all such 10-year periods for each premium. Excluded are 10-year periods that end after December 2018. Past performance is no guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. See Exhibit 1 for the definition of the premiums and data source.

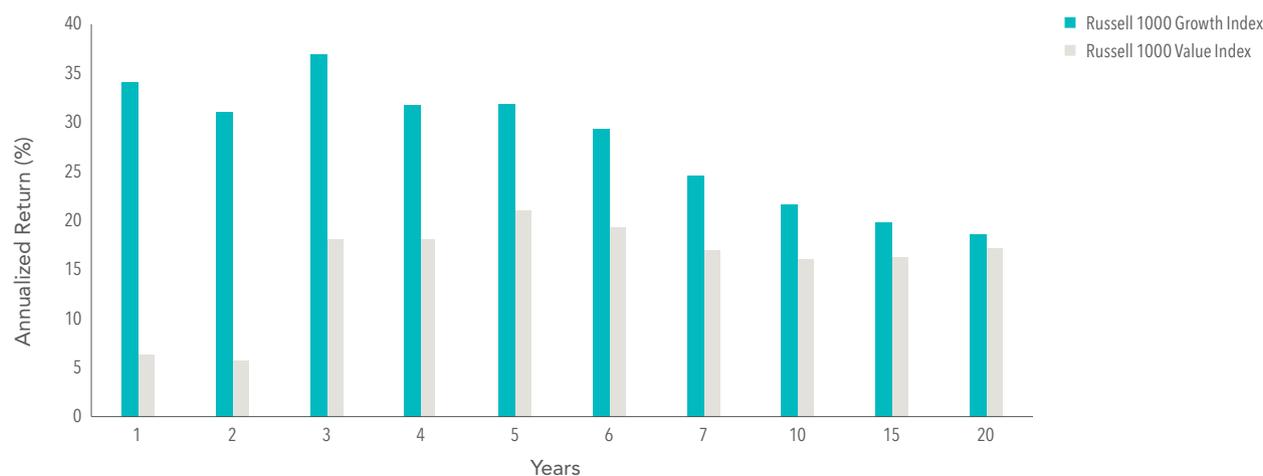
although the data show a wide range of outcomes. In this analysis, we identify the rolling 10-year periods when a premium was negative and then observe how the premium behaved over the following 10 years. Profitability is excluded because there are only two data points.

Despite compelling theoretical and empirical evidence supporting the premiums, investors may be tempted to extrapolate the recent past into the distant future, which can lead them to abandon their investment philosophy at potentially inopportune times. Maintaining discipline and sticking to the plan are vital. The performance of premiums in the recent past doesn't tell you much

about future premiums. So, if your goals haven't changed, then your asset allocation likely doesn't need to change.

Furthermore, premiums can materialize quickly, and you want to be properly positioned to capture the returns when they show up. The period leading up to and shortly after the start of the 21st century provides an extreme, albeit anecdotal, example. **Exhibit 4** shows the performance of the Russell 1000 Growth and Value indices. Growth beat value over every trailing period from 1 to 20 years ending March 31, 2000. Consequently, many investors found themselves questioning a value strategy, meaning they wondered if expected returns were still related to the price paid for a stock in the so-called "new economy."

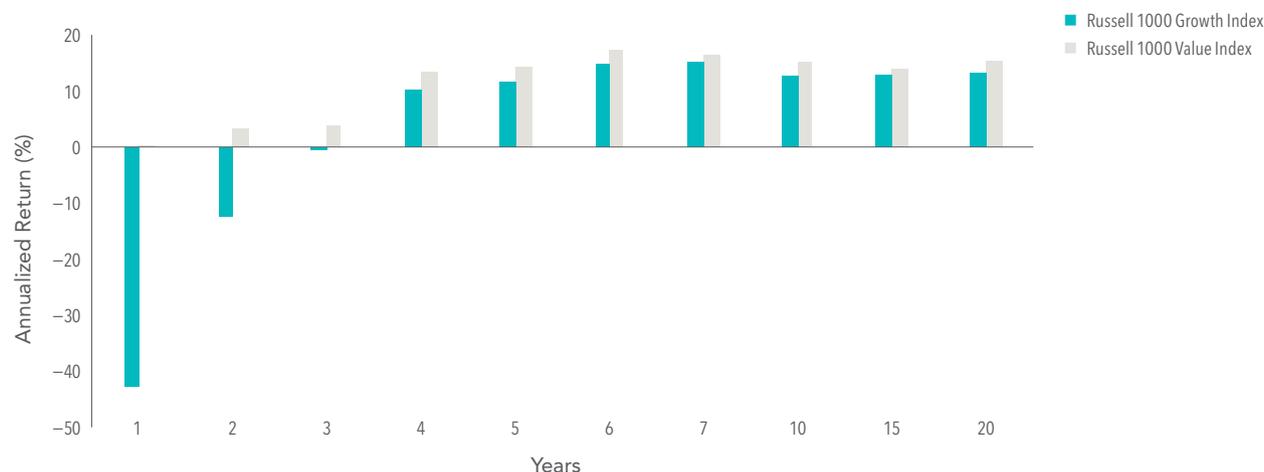
Exhibit 4: Russell 1000 Growth Index vs. Russell 1000 Value Index
 Trailing periods ending March 31, 2000



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Exhibit 5: Russell 1000 Growth Index vs. Russell 1000 Value Index

Trailing periods ending March 31, 2001



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Investors who capitulated to this line of reasoning may have regretted their decision a mere 12 months later because the value index strongly outperformed the growth index, as illustrated in Exhibit 5, over every trailing period from 1 to 20 years, ending March 31, 2001.

The moral of the story? Negative outcomes are disappointing, but investors should view them with the proper perspective and stay the course!

APPENDIX

Fama/French Total US Market Research Index: The value-weighted US market index is constructed every month, using all issues listed on the NYSE, AMEX, or Nasdaq with available outstanding shares and valid prices for that month and the month before. Exclusions: American Depositary Receipts. Sources: CRSP for value-weighted US market return. Rebalancing: Monthly. Dividends: Reinvested in the paying company until the portfolio is rebalanced.

Fama/French US Value Research Index: Provided by Fama/French from CRSP securities data. Includes the lower 30% in price-to-book of NYSE securities (plus NYSE Amex equivalents since July 1962 and Nasdaq equivalents since 1973).

Fama/French US Growth Research Index: Provided by Fama/French from CRSP securities data. Includes the higher 30% in price-to-book of NYSE securities (plus NYSE Amex equivalents since July 1962 and Nasdaq equivalents since 1973).

Dimensional US Small Cap Index: Created by Dimensional in March 2007 and compiled by Dimensional. It represents a market capitalization-weighted index of securities of the smallest US companies whose market capitalization falls in the lowest 8% of the total market capitalization of the eligible market. The eligible market is composed of securities of US companies traded on the NYSE, NYSE MKT (formerly AMEX), and Nasdaq Global Market. Exclusions: Non-US companies, REITs, UITs, and investment companies. From January 1975 to the present, the index also excludes companies with the lowest profitability and highest relative price within the small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Source: CRSP and Compustat. The index monthly returns are computed as the simple average of the monthly returns of 12 sub-indices, each one reconstituted once a year at the end of a different month of the year. The calculation methodology for the Dimensional US Small Cap Index was amended on January 1, 2014, to include profitability as a factor in selecting securities for inclusion in the index.

Dimensional US High Profitability Index: Created by Dimensional in January 2014 and represents an index consisting of US companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three high-profitability subgroups. It is rebalanced twice per year. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Source: CRSP and Compustat.

Dimensional US Low Profitability Index: Created by Dimensional in January 2014 and represents an index consisting of US companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three low-profitability subgroups. It is rebalanced twice per year. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Source: CRSP and Compustat.

Profitability is defined as operating income before depreciation and amortization minus interest expense scaled by book. **Relative Price** refers to the share price (or market cap) of a firm's stock, divided by a fundamental variable of the firm (e.g., earnings, cash earnings, dividends, net assets). One of the most widely used measures of relative price is the price-to-book ratio.

1. **Market premium:** The return difference between stocks and short-term bills. **Size premium:** The return difference between small capitalization stocks and large capitalization stocks. **Value premium:** The return difference between stocks with low relative prices (value) and stocks with high relative prices (growth). **Profitability premium:** The return difference between stocks of companies with high profitability over those with low profitability.

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