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Examining Share Repurchasing and the S&P Buyback Indices

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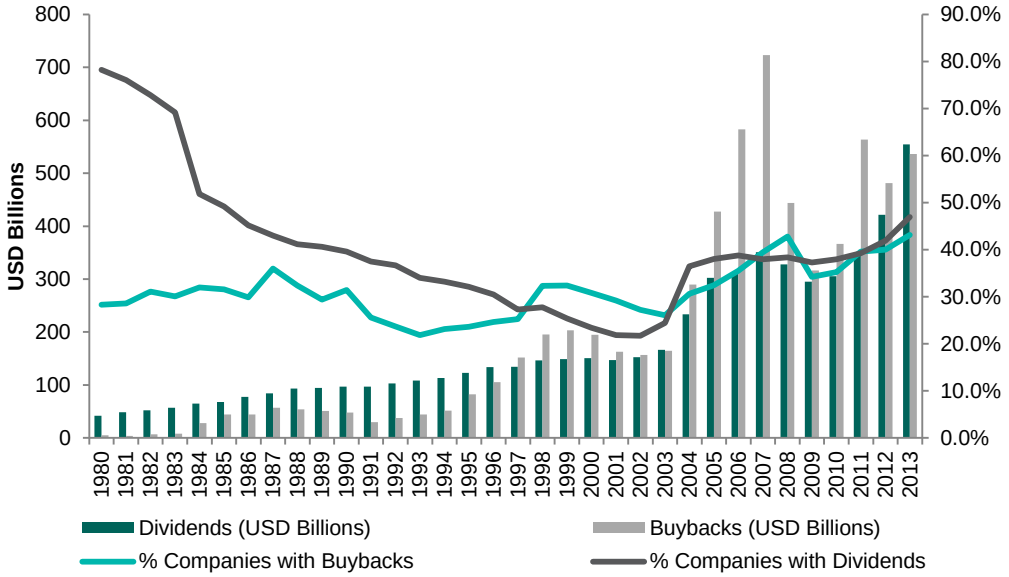
Overview of Share Repurchases

Corporate payout policy has been one of the most studied areas in finance literature. If a company has limited investment opportunities, it may distribute its excess cash flow, if any, back to shareholders to mitigate the conflicts of interest between management and shareholders.

There are different ways to redistribute cash back to shareholders, including cash dividend payouts, share repurchases or a combination of both. Historically, dividends have been the dominant form of corporate payout. However, there has been a structural change in corporate payout policy, in that share repurchases have surpassed cash dividends and become the dominant form of corporate payout in the U.S.

Since 1997 the total amount of buybacks has exceeded the cash dividends paid by U.S. firms (see Exhibit 1). The proportion of dividend-paying companies decreased to more than 40% in 2013 from 78% in 1980, while the proportion of companies with share buybacks increased to 43% from 28% during the same time period. The increased use of share repurchase is mainly driven by some key advantages of this method, including tax benefits and financial flexibility.

Exhibit 1: Aggregate Dividends and Buybacks Paid by U.S. Firms and the Percentage of Firms with Positive Dividends and Buybacks in the U.S.



Source: S&P Dow Jones Indices LLC, Compustat. Only listed companies with fundamental data available in Compustat are calculated. Data as of fiscal year-end from 1980 to 2013. Dividend and buyback data may include the amount paid for preferred shares. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

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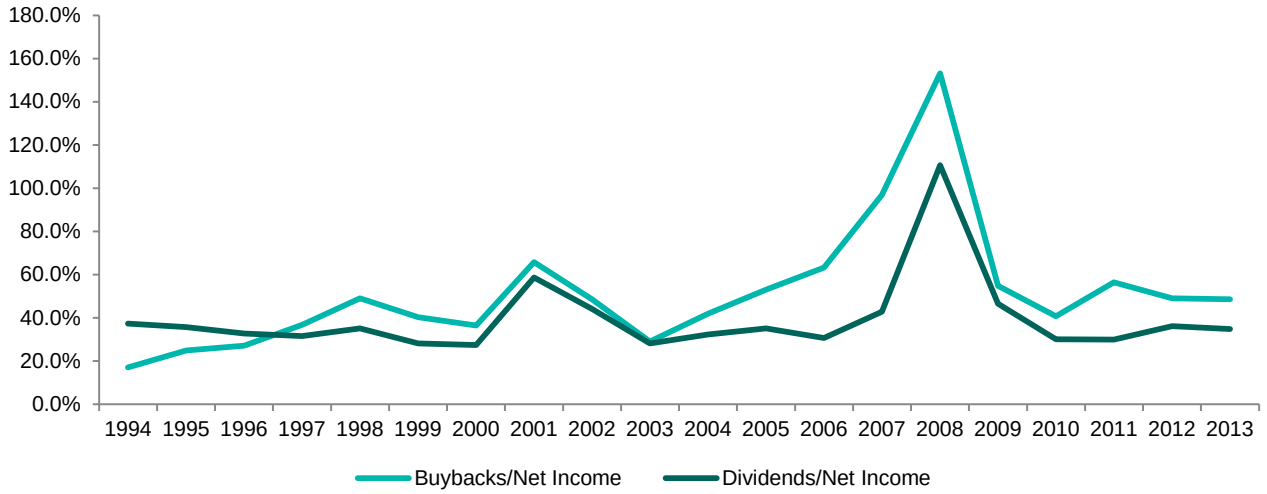
Exhibit 2 shows annual aggregated dividends and buybacks as a percentage of net income for constituents of the S&P Composite 1500®, which consists of large-, mid- and small-cap U.S. companies. Between 1994 and 2013, the percentage of net income for dividends was in the 27% to 47% range, with periods of increase and decrease. On the other hand, the percentage of net income for buybacks experienced more substantial growth, increasing to 49% from 17%.

The percentage of net income distributed through buybacks has exceeded that of dividend payments since 1997. This finding is consistent with our observation that share repurchases have replaced dividends as the dominant form of corporate payout in the U.S. since that year.

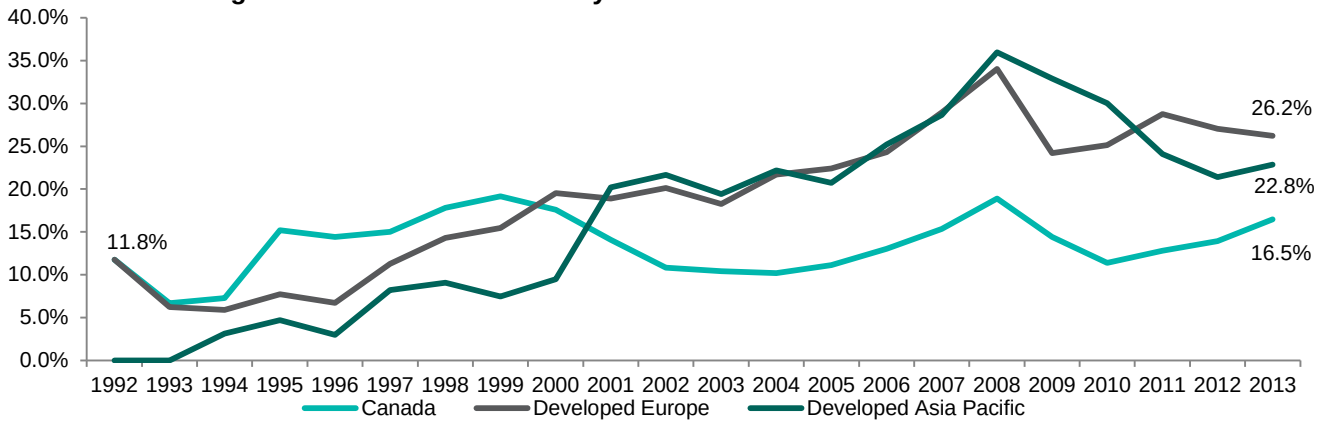
Exhibit 2: Aggregate Dividends and Buybacks as a Percentage of Net Income for S&P Composite 1500 Constituents



Source: S&P Dow Jones Indices LLC, Compustat, Worldscope. Data as of fiscal year-end from 1994 to 2013. Dividend and buyback data may include the amount paid for preferred shares. Only companies with fundamental data available are calculated. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

The increased use of share repurchases as an alternative corporate payout method is also observed in other developed regions. The percentage of firms with positive buybacks has increased in Canada, developed Europe and developed Asia Pacific (see Exhibit 3).

Exhibit 3: Percentage of Firms With Positive Buybacks



Source: S&P Dow Jones Indices LLC, S&P Capital IQ. Only listed companies with fundamental data available are calculated. Data from 1992 to 2013. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

Share Repurchase: Types and Purposes

There are five types of share repurchases: fixed price tender offer, Dutch auction tender offer, open market share repurchases, transferable put right distribution and targeted stock repurchases.[1] In the U.S., open market share repurchases have become the dominant form among all repurchasing mechanisms since the early 1980s, partially due to the enactment of Rule 10b-18 in 1982, which provided firms with a safe harbor for open market share repurchases.[2] Open market share repurchases have gained popularity not only in the U.S., but also in many other countries around the world. Most recently, they were introduced in Austria, France, Germany, Japan, Korea, the Netherlands and Norway due to favorable tax provisions or legal reforms (Hseih and Wang 2009; Kim, Schremper and Varaiya 2013).

Numerous reports about share repurchases have been focused on firms' decisions regarding corporate payout policy. According to Hsieh and Wang (2009), the most cited motives behind firms' share repurchases are:

- Regulation and Taxes: The 1982 enactment of Rule 10b-18 provided a safe harbor for open market share repurchases, which triggered the increase in their use in the U.S. since the mid-1980s. The differing tax rate on capital gains vs. that on dividends in history generally favors repurchases. However, even without the favorable tax rate (as that in the late 1980s and after 2003), repurchases offer additional flexibility because investors can defer taxes and create home-made dividends when needed.
- Financial Flexibility for Management: Because it is not mandatory for companies to fulfill announced open market share repurchases and investors usually have more adverse reactions to dividend cuts than to postponing or even abandoning the share repurchase program, share repurchases give management greater financial flexibility.
- Agency Costs of Free Cash Flows: Firms repurchase shares in response to accumulated free cash flows and declining growth opportunities.
- Signaling and Undervaluation: The corporate payout method has been long considered as a costly but credible signal for the future prospects of the firm and for undervaluation, since it is associated with nontrivial costs such as substantial tax liability, costs of external fund seeking and foregone investment opportunities. Share repurchases can be used to signal the firm's value, and they are believed to deliver greater information content than dividends.
- Capital Structure: Share repurchases can be utilized to adjust quickly a firm's capital structure.
- Takeover Deterrent: Repurchases are often used to fend off an unwanted bid by enabling control of voting rights, signaling firm value, bolstering stock prices and changing ownership structure to increase the difficulties and costs of purchasing remaining outstanding shares.
- Stock Option Grants and Earning Management: Managers who are heavily compensated with stock options may have a strong incentive to utilize share repurchases to offset the dilution effect of employee stock option grants, or even purposely to manage earnings for their own benefit.

Buyback Activities and Market Conditions

Exhibit 4 shows how firms in the S&P Composite 1500 have distributed capital over the past 20 years through capital expenditures, acquisitions, share buybacks and dividends. From 1994 through 2013, changes in share repurchases and acquisitions were more significant than the other two methods, and this was especially true in 2008 and 2011. In fact, share repurchases follow the economic cycle with increased or decreased activities when the market is up or down. This is not surprising, as free cash flows are often thinner in tough times, and capital expenditures and dividends are usually higher priorities in company spending.

[1] Fixed price tender offers, Dutch auction tender offers and targeted stock repurchases can retire a large portion of shares within a short period, and they therefore are efficient tools for companies to quickly adjust capital structure or fend off an unwanted takeover bid. However, compared to fixed price tender offers, Dutch auction tender offers and targeted stock repurchases contain less information contents regarding the valuation of the firm. In an open market share repurchase, the firm is not obligated to buy back any shares in the market; therefore, it provides more flexibility for management but contains the least information content regarding the firm's value. Open market share repurchases are frequently used by companies to offset the EPS dilution effect of stock option exercises.

[2] Before the 1982 enactment of Rule 10b-18, firms in the U.S. that engaged in open market share repurchases could have a potential risk of liability under the anti-manipulation provisions of Sections 9(a)(2) and 10(b) and Rule 10b-5 of the Securities Exchange Act of 1934, which deterred firms from active engagement in open market share repurchases despite the tax advantage when compared to dividends [1,2].

Exhibit 4: How S&P Composite 1500 Firms' Capital is Distributed (USD Billions)

Year	Market Cap	Dividends	Buybacks	Acquisitions	Capital Expenditure
1994	12,395	110	56	65	351
1995	11,481	119	87	112	419
1996	13,911	128	117	115	385
1997	19,395	136	170	133	428
1998	20,066	146	195	199	451
1999	13,695	157	215	234	478
2000	12,837	156	196	268	522
2001	11,632	155	172	217	535
2002	9,013	155	168	143	431
2003	11,548	171	177	169	409
2004	12,754	199	257	143	430
2005	13,247	259	388	220	480
2006	14,810	258	532	294	576
2007	14,910	299	673	351	612
2008	9,153	286	395	249	662
2009	11,601	255	300	139	513
2010	13,362	249	337	227	550
2011	13,225	279	525	302	663
2012	14,946	330	446	334	724
2013	19,380	365	522	224	739

Source: S&P Dow Jones Indices LLC, Compustat, Worldscope. Data as of fiscal year-end from 1994 to 2013. Dividend and buyback data may include the amount paid for preferred shares. Only companies with fundamental data available are calculated. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

Price Impact of Share Repurchases

There are three important findings related to the movement of share prices around the time when share repurchase programs are announced (Hseih and Wang 2009).

Firstly, previous publications (Vermaelen [1981] and Ikenberry, Lakonishok and Vermaelen [1995]) documented that firms usually experience negative price returns before the repurchase announcement.

Secondly, event studies found that firms engaging in share repurchases generally earn significantly positive announcement returns. For example, Stephens and Weisbach (1998) and Nohel and Tarhan (1998) examined a sample of 591 open market repurchases from 1981 to 1990 and 242 tender offers between 1978 and 1991, and they reported a positive abnormal return of around 2.7% and 7.6%, respectively, over a three-day event window.

Thirdly, buy-and-hold abnormal returns persisted over the years after the announcement In a study on fixed-price tender offers, Lakonishok and Vermaelen (1990) found that, on average, prices remained at bargain levels for at least two years. Ikenberry, Lakonishok and Vermaelen (1995) proposed a hypothesis to explain the post-announcement performance drift. In this hypothesis, which they referred to as the "Underreaction Hypothesis," the market treated repurchase announcements with skepticism, which led to the slow price adjustment over time. The delayed market reactions were also observed in other corporate actions such as IPOs, mergers and spinoffs. By examining a sample of 1,239 open market repurchases from 1980 to 1990, they reported an average of 3.5% initial market reaction, which is consistent with previous studies that reported an average initial market reaction close to 3.0%. They argued that it does not seem plausible that managers would be able to detect such a small undervaluation and choose to react. If managers are buying back shares because of undervaluation, it is likely that they perceive it to be at a substantial level. Thus, the information conveyed by open market repurchases is largely ignored by the market, which causes the delayed market reaction. Consistent with the hypothesis, they found an average of 12.1% buy-and-hold abnormal returns for repurchasing firms over the four years following the announcement, and companies with high book-to-market ratios experienced more significant post-pronounced performance drift.

Peyer and Vermaelen extended the study by using more recent and a greater amount of data (3,481 open market repurchases from 1991 to 2001 and 261 fixed price tender offers between 1987 and 2001). They found that post-repurchase announcement drift still persists over time for both open market repurchases and tender offers. In their study, they explored three hypotheses to explain the excess returns following open market repurchase programs: (1) The Risk Change Hypothesis, proposed by Grullon and Michaely (2004), which argues that repurchases signal a decline in growth prospects that lowers the risk of stocks; (2) The Liquidity Hypothesis, which suggests that the abnormal returns may be the result of priced liquidity as repurchases reduce liquidity; (3) The Overreaction Hypothesis, which assumes long-run excess returns are just a correction of an overreaction to bad news prior to the repurchase. In their study, they found strong support for the overreaction hypothesis. They discovered that stocks experienced the most significant positive long-term excess returns if the repurchase was triggered by a severe stock price decline during the previous six months, and that past performance seems to be a better predictor of undervaluation than other undervaluation measures such as book-to-market, size and the stated motivation for the buyback in the press release (Peyer and Vermaelen 2008).

Given the persistence of post-announcement performance drift over time, we will analyze the performance of the S&P Buyback Index Methodology, which track stocks with relatively heavy repurchase activities. In this paper, we will only test the plain vanilla buyback indices screened by buyback ratio in the last 12 months across different major markets and segments. The overlay of undervaluation factors such as book-to-market or price momentum is out of the scope of this paper.

In the following sections, we will introduce the S&P 500® Buyback Index, along with its performance and attributes. Then we will expand the study to the mid-cap and small-cap spaces in the U.S., as well as outside of the U.S.

The S&P 500 Buyback Index

The S&P 500 Buyback Index tracks the 100 constituents in the S&P 500 with the highest buyback ratio in the trailing 12-month period. The buyback ratio is defined as the monetary amount of cash paid for common share buybacks in the previous four calendar quarters (with interim reports available) divided by the total market capitalization of common shares at the beginning of the 12-month trailing period.

The S&P 500 Buyback Index constituents are weighted equally and reviewed quarterly after market close on the third Friday of January, April, July and October, with rebalancing reference dates as of the preceding month ends.

Risk/Return Characteristics

In the past 20 years that ended March 31, 2014, the S&P 500 Buyback Index had outperformed the S&P 500 in 17 out of 20 years, with most significant excess returns recorded from 2000 to 2002, 2009, and 2013 (see Exhibit 5). The S&P 500 Buyback Index only underperformed during the late stage of the technology bubble (1998-1999) and the early stage of the financial crisis in 2007. For the overall period, the S&P 500 Buyback Index outperformed the S&P 500 by 5.6% per year, with slightly higher volatility (see Exhibit 6).

Because the S&P 500 Buyback Index employs an equal weighting method, we added the S&P 500 Equal Weight Index in the performance comparison to isolate the alpha generated by buyback ratio stock screening. As shown in the figures, the use of the equal weighting method is not a dominant factor in the outperformance, as the S&P 500 Buyback Index delivered a significant excess return over the S&P 500 Equal Weight Index.

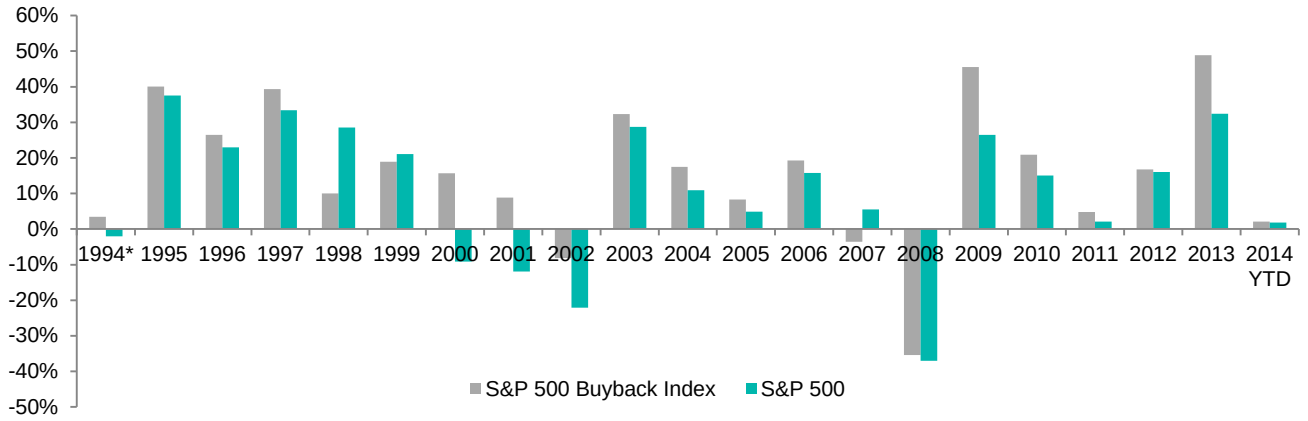
To better understand how the S&P 500 Buyback Index performed differently than companies using alternative ways to distribute excess cash to shareholders (such as cash dividend and a combination of share buyback and cash dividend), we constructed the S&P 500 Dividend Yield portfolio and the S&P 500 Shareholder Yield portfolio, which consist of 100 stocks with the highest 12-month trailing dividend yield and shareholder yield,[3] respectively, using the same weighting method and rebalancing schedules as the S&P 500 Buyback Index.

Compared with the S&P 500 Dividend Yield portfolio, the S&P 500 Buyback Index had higher returns and higher volatility over the periods examined. Surprisingly, however, the S&P 500 Dividend Yield portfolio recorded a

[3] Shareholder yield is defined as the monetary amount of cash paid for common dividends and common share buybacks in the trailing four calendar quarters, with interim reports available, divided by the total market capitalization of common shares at the beginning of the 12-month trailing period.

greater maximum drawdown than the S&P 500 Buyback Index. The S&P 500 Shareholder Yield portfolio, which captures characteristics of both buyback and dividend-paying companies, had balanced returns and a volatility level between the S&P 500 Buyback Index and the S&P 500 Dividend Yield portfolio.

Exhibit 5: Annual Return of the S&P 500 Buyback Index



Source: S&P Dow Jones Indices LLC. Data from Jan. 21, 1994, through March 31, 2014. Index performance based on total returns in USD. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 6: Risk/Return Profile of the S&P 500 Buyback Index

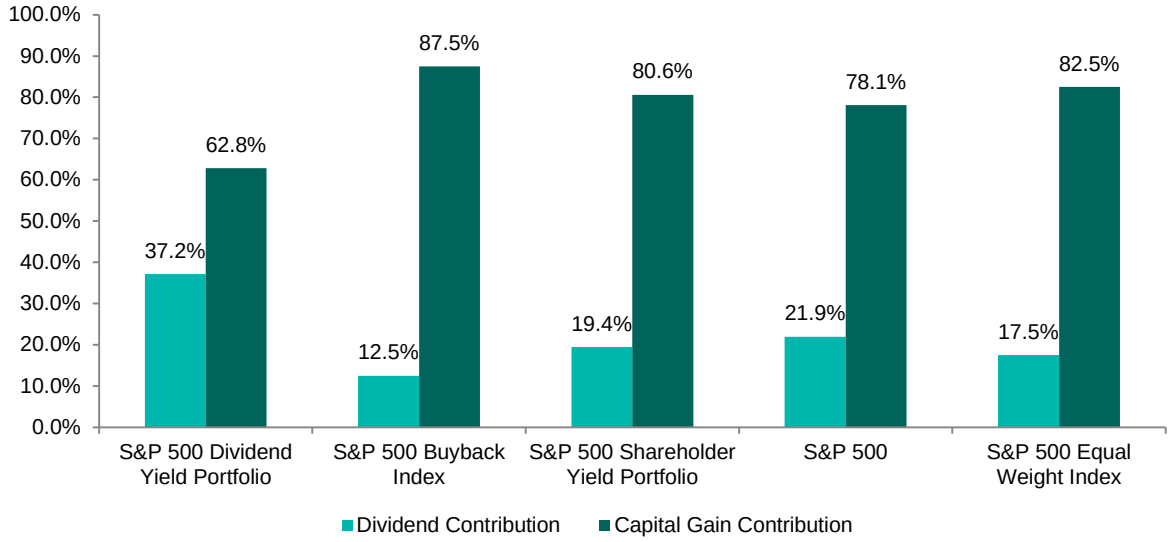
Time Period	S&P 500 Dividend Yield Portfolio	S&P 500 Buyback Index	S&P 500 Shareholder Yield Portfolio	S&P 500	S&P 500 Equal Weight Index
Return (p.a.) (%)					
5-Year	26.1	28.3	28.5	21.2	26.6
10-Year	9.1	11.4	11.8	7.4	9.7
14-Year	10.2	12.0	12.7	3.6	9.0
20-Year	11.6	15.1	14.7	9.5	11.5
Standard Deviation (%)					
5-Year	13.6	15.4	14.7	14.0	17.1
10-Year	15.6	17.1	16.6	14.7	17.6
14-Year	15.5	16.4	15.7	15.4	17.9
20-Year	14.9	16.1	15.4	15.2	16.9
Risk-Adjusted Return					
5-Year	1.91	1.84	1.94	1.51	1.55
10-Year	0.58	0.67	0.71	0.50	0.55
14-Year	0.66	0.73	0.81	0.23	0.50
20-Year	0.78	0.94	0.96	0.63	0.68
Maximum Drawdown (%)					
20-Year	-51.0	-46.3	-46.8	-46.4	-50.1

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2014. Index performance based on total returns in USD. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Although buybacks and dividends are the two legs of corporate payouts, buyback portfolios have very different performance features compared to dividend yield portfolios. As shown in Exhibits 7 and 8, the S&P 500 Dividend Yield portfolio had the highest dividend yield, while the S&P 500 Buyback Index had the lowest dividend yield among the three child portfolios based on the S&P 500. As a result, the contribution of dividend income to total return is much lower in the S&P 500 Buyback Index than in the S&P 500 Dividend Yield and the S&P 500

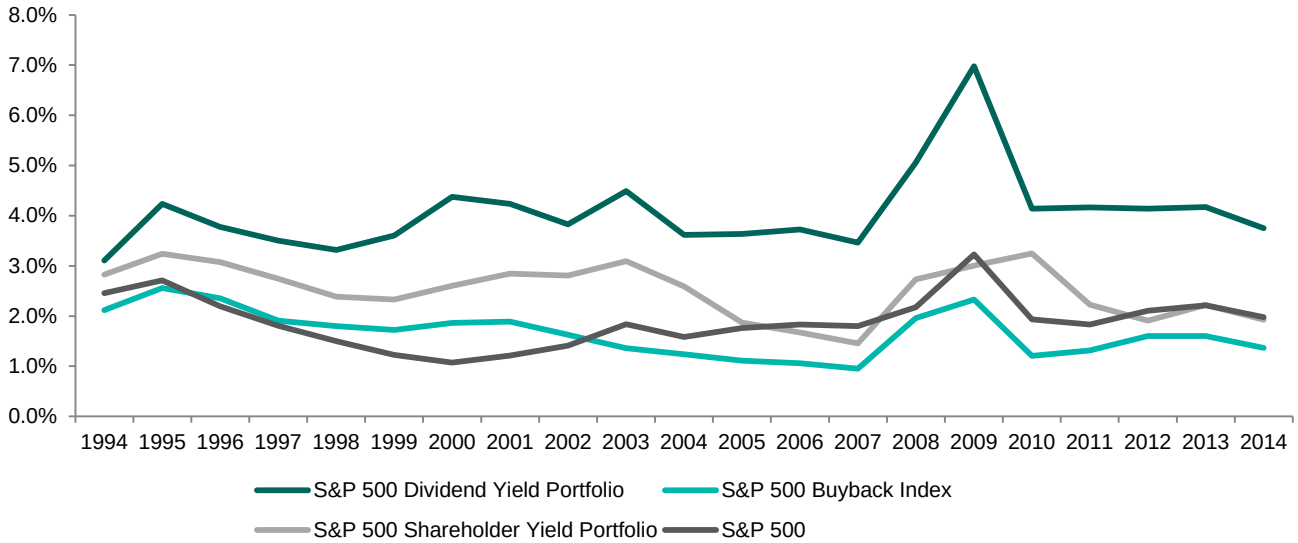
Shareholder Yield portfolios. In the past 20 years, capital gain and dividend income (dividends and reinvestment) contributed 87.5% and 12.5% of the total return of the S&P 500 Buyback Index, respectively, whereas the S&P 500 Dividend Yield portfolio had a much higher percentage (37.2%) of its total return from dividends.

Exhibit 7: Source of Total Returns



Source: S&P Dow Jones Indices LLC. Data is from March 31, 1994, through March 31, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 8: Annual Dividend Yields



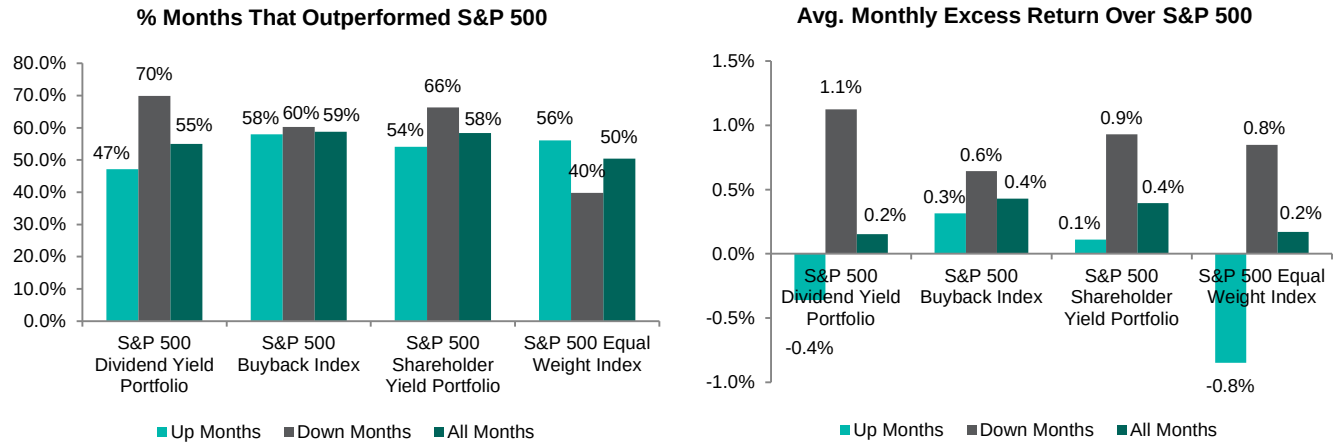
Source: S&P Dow Jones Indices LLC. Data is from January rebalancing each year from 1994 through 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

As buybacks tend to follow the economic cycle with increased or decreased repurchase activities in up or down markets while dividend payouts are normally more stable over time, the S&P 500 Dividend Yield portfolio tends to outperform in down markets, while the S&P 500 Buyback Index may capture more upside momentum during bull markets.

In the past 20 years that ended March 31, 2014, the S&P 500 Buyback Index outperformed the S&P 500 in both up and down months (see Exhibit 9). The average monthly excess return over the S&P 500 was higher in down months than it was in up months.

Compared to the S&P 500 Dividend Yield portfolio, the outperformance of the S&P 500 Buyback Index is more consistent in both up and down markets, as indicated by its high win ratio and significant excess return in both up and down markets. Furthermore, the S&P 500 Buyback Index generated 0.7% greater average monthly excess returns in up months than the S&P 500 Dividend Yield portfolio, surpassing the shortfall of 0.5% in down months and explaining why the S&P 500 Buyback Index outperformed the S&P 500 Dividend Yield portfolio over this period.

Exhibit 9: Upside and Downside Capture



Source: S&P Dow Jones Indices LLC. Index performance is based on total returns. Data is from March 31, 1994, through March 31, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Sector Composition

Historically, defensive sectors, such as utilities, telecommunication services and consumer staples, paid more dividends than other sectors among large-cap U.S. companies, as indicated by their higher dividend yields (see Exhibit 10). This is consistent with Hausch and Seward's (1993) belief that firms that generate deterministic cash disbursements are more likely to choose dividends. In contrast, the consumer discretionary, information technology and financials sectors, which are more cyclical in nature, have had higher buyback ratios, historically.

Therefore, the S&P 500 Buyback Index (which is in the U.S. large-cap space) tends to include more stocks from cyclical than defensive sectors. Among the 100 constituents in the S&P 500 Buyback Index as of January 2014, only three of them were from consumer staples, telecommunication services and utilities companies. This cyclical bias of the S&P 500 Buyback Index may contribute to its higher win ratio in up markets compared with the S&P 500 Dividend Yield portfolio.

Exhibit 10: Dividends and Buybacks Ratios by Sector

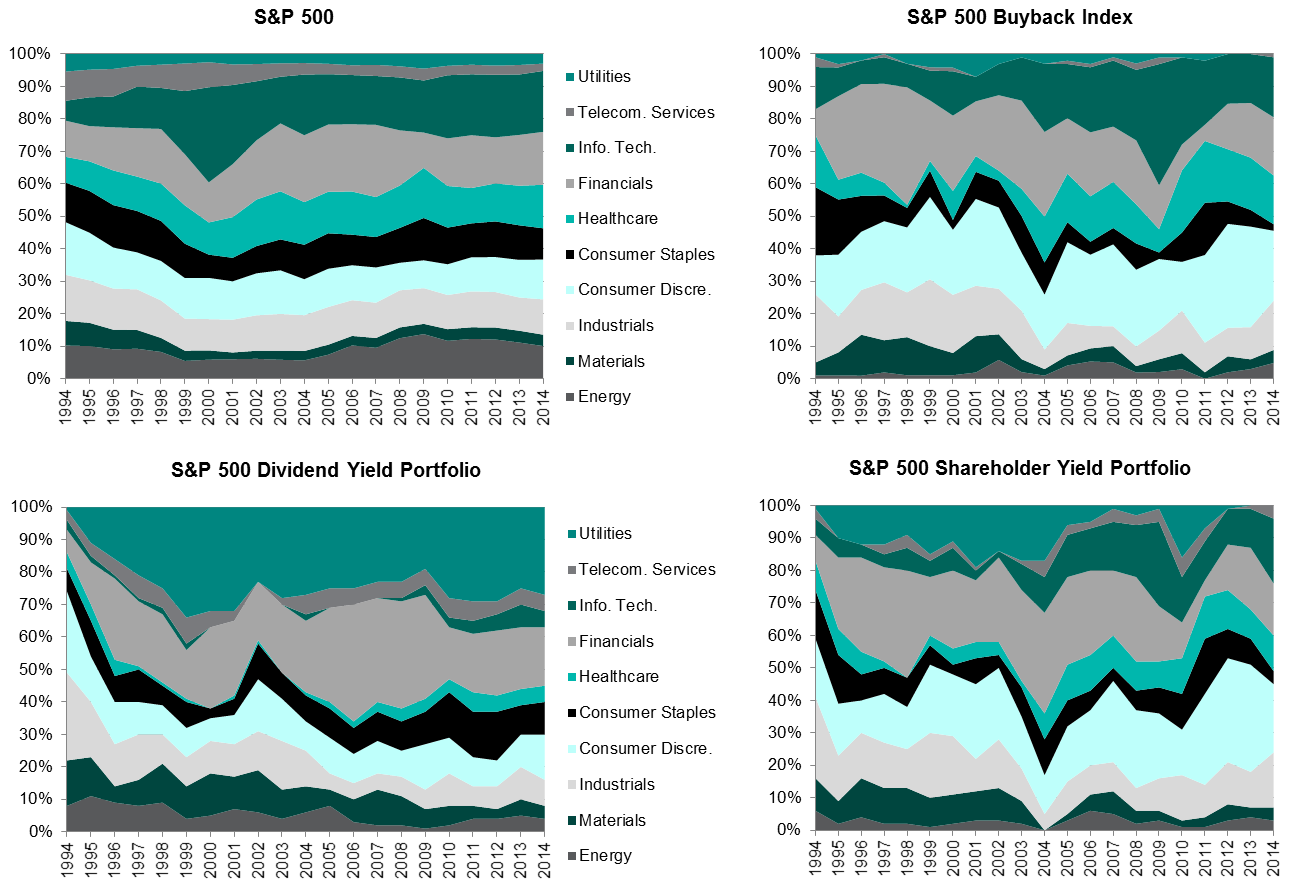
S&P 500 Sector	Companies with Dividends (%)			Companies with Buybacks (%)			Dividend Yield			Buyback Ratio		
	1999	2013	Median	1999	2013	Median	1999	2013	Median	1999	2013	Median
Energy	92.0	84.1	84.1	64.0	59.1	59.5	2.4	2.0	2.0	0.4	2.2	2.2
Materials	85.7	96.8	90.6	71.4	71.0	70.0	1.9	2.3	2.0	1.3	1.3	1.3
Industrials	87.5	93.8	91.1	81.9	85.9	79.7	1.1	1.8	1.8	2.1	2.6	2.0
Consumer Discretionary	75.6	77.1	75.9	80.0	89.2	80.0	0.7	1.3	1.0	1.0	3.3	2.8
Consumer Staples	95.1	95.0	92.7	85.4	87.5	85.4	2.6	2.5	2.3	1.6	2.3	2.3
Healthcare	70.3	60.0	54.5	81.1	94.5	76.9	1.1	1.6	1.5	1.7	2.7	2.1
Financials	95.8	93.8	94.6	93.0	79.0	84.0	1.7	1.6	1.9	2.6	1.8	2.6
Info. Tech.	32.3	67.7	33.3	59.7	93.8	71.1	0.1	1.4	0.6	0.8	3.3	2.8
Telecom. Services	69.2	83.3	66.7	61.5	66.7	55.6	1.8	4.8	4.3	1.0	4.5	0.7
Utilities	92.5	100.0	92.5	60.0	32.3	36.4	4.5	4.0	3.9	2.7	0.3	0.6

Source: S&P Dow Jones Indices LLC, S&P Capital IQ. Data presented as of year-end each year, from 1999 to 2013. Trailing 12-month data are used with a three-month lag. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

Historically, the S&P 500 Buyback Index was consistently underweight for the energy, telecommunication services and utilities sectors, and overweight for the consumer discretionary sector. The allocation in information technology, however, changed more dynamically. Information technology was overweight in the S&P 500 Buyback Index between 2004 and 2010 and was underweight in the index for rest of the years. This might be the result of the rapid increase in buyback amounts and buyback ratios of information technology sector companies since 2003, which ceased in 2008 (see Exhibit 11&12).

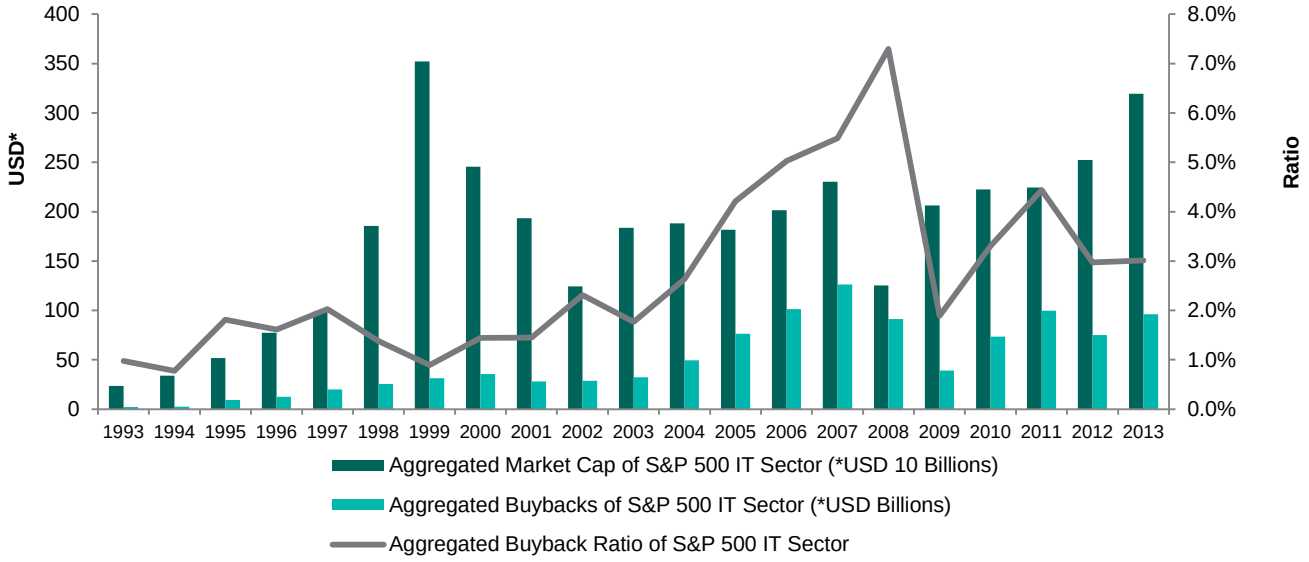
In contrast to the S&P 500 Buyback Index, the S&P 500 Dividend Yield portfolio was overweight for utilities and financials and underweight for information technology and healthcare for most of the period observed. Sector composition of the S&P 500 Shareholder Yield portfolio is a mix of the two, but it is more tilted toward the S&P 500 Buyback Index. As the buyback amounts for the S&P 500 Buyback Index constituents are generally much larger than the dividend amounts for the S&P 500 Dividend Yield portfolio members, the buyback stocks are dominant when both dividends and buybacks are combined in the calculation of shareholder yield. This pattern is only observed in the U.S. market, including the large-, mid- and small-cap segments, but not in Canada and Europe, where sector compositions of shareholder yield portfolios are either more similar to those of dividend yield portfolios or are balanced.

Exhibit 11: Historical Sector Breakdown



Source: S&P Dow Jones Indices LLC. Data is from Jan. 21, 1994, through Jan. 17, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

Exhibit 12: Dynamic Allocation of S&P 500 Buyback Index in the Information Technology Sector



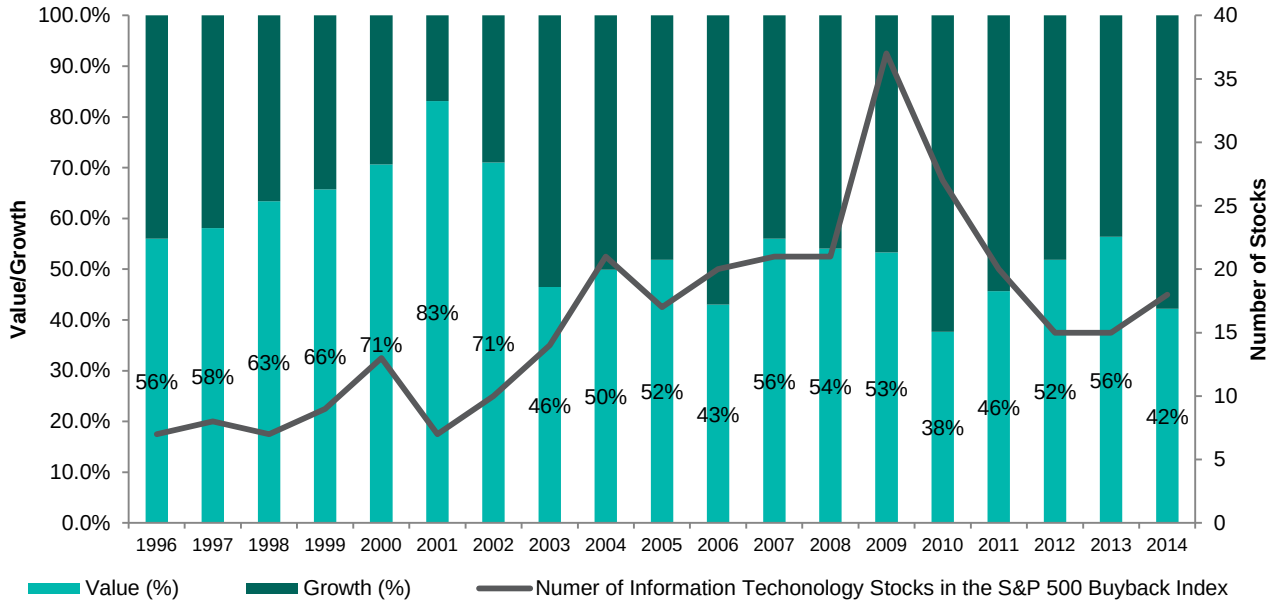
Source: S&P Dow Jones Indices LLC, S&P Capital IQ. Data from 1993 to 2013. Market cap data are as of year end. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. IT refers to information technology.

Style and Factor Exposure

If most companies repurchase shares only when their managers perceive their shares as undervalued, the chosen buyback strategy tends to have a value bias. As shown in the style map in Appendix 1, over the past 14 years, the S&P 500 Buyback Index had value and small-cap tilts against the S&P 500. The small-cap bias may partially stem from the equal weighting scheme adopted by the S&P 500 Buyback Index.

The historical growth and value composition[4] of the S&P 500 Buyback Index shows that the index had a value tilt before 2003, and has acquired a balance between growth and value since then. This may result from the increase of information technology stocks in the S&P 500 Buyback Index since 2003 (see Exhibit 13).

Exhibit 13: The Value Composition and Influence of the Information Technology Sector on the Style Composition of the S&P 500 Buyback Index



Source: S&P Dow Jones Indices LLC. Data calculated from Jan. 31, 1996, through Jan. 17, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

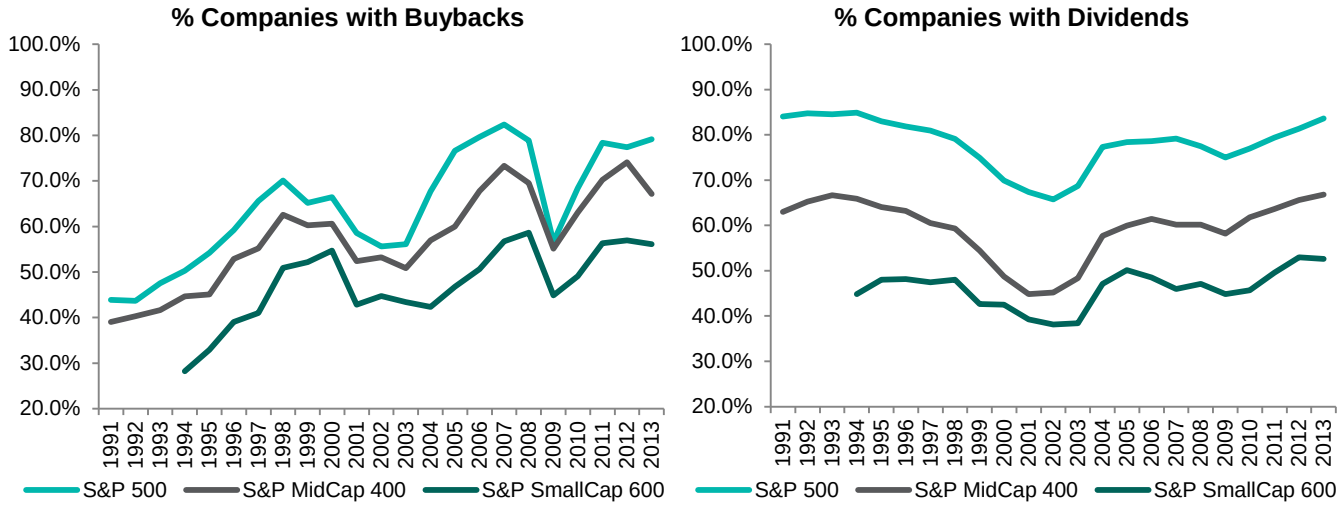
Buyback Beyond the S&P 500 in the U.S: Does it Work in the Mid- and Small-Cap Spaces?

As equal weighting and the resulting small-cap bias of the S&P 500 Buyback Index may play a role in the outperformance of the portfolio, we investigated whether the S&P 500 Buyback Index framework also works among the S&P MidCap 400 and the S&P SmallCap 600, which are less influenced by small-cap bias.

First, we checked whether buybacks prevailed in the mid- and small-cap space of the U.S. As indicated in Exhibit 14, the percentages of dividend paying companies in the large-, mid- and small-cap categories in the U.S. have been relatively stable at around 80%, 60% and 47%, respectively. However, the percentages of companies with buybacks have increased from 1994 to 2013 in all market capitalization segments, with the large-cap space having the highest buyback participation.

[4]Growth and value compositions are calculated as the weighted average growth and value weight of index constituents. In S&P U.S. Style Indices, growth and value weights are assigned to each stock based on its growth or value attributes and are used to allocate stocks' weights between growth and value subindices.

Exhibit 14: Percentage of Firms with Positive Buybacks and Dividends in Large-, Mid-, and Small-Cap Spaces



Source: S&P Dow Jones Indices LLC, Compustat. Data from 1991 to 2013. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

Using the same stock selection criteria, weighting method and rebalancing schedule as those of the S&P 500 Buyback Index, we selected 80 and 120 stocks with the highest buyback ratios in the trailing 12 months from the S&P MidCap 400 and the S&P SmallCap 600, respectively, to form the respective buyback portfolios. For comparison, the Dividend Yield and Shareholder Yield portfolios for each of these indices were constructed in the same way as the S&P 500 in the previous section. The combination of constituents from the S&P 500, the S&P MidCap 400 and S&P SmallCap 600 Buyback portfolios form the S&P Composite 1500 Buyback portfolio.

As shown in Exhibit 15, the S&P MidCap 400 Buyback and S&P SmallCap 600 buyback portfolios gained annualized excess returns of 4.4% and 5.6%, respectively, in the past 14 years that ended March 31, 2014. These are significant but lower than the excess return of 8.4% produced by the S&P 500 Buyback Index. Both the S&P MidCap 400 and S&P SmallCap 600 Buyback portfolios had outperformed their parent indices in 11 out of 14 years, from 2000 to 2013.

Exhibit 15: Performance of the S&P MidCap 400 and the S&P SmallCap 600 Buyback Portfolios

Time Period	U.S. Large Cap		U.S. Mid Cap		U.S. Small Cap		Large, Mid and Small Cap	
	S&P 500 Buyback Index	S&P 500	S&P MidCap 400 Buyback Portfolio	S&P MidCap 400	S&P SmallCap 600 Buyback Portfolio	S&P SmallCap 600	S&P Composite 1500 Buyback Portfolio	S&P Composite 1500
Return (p.a.)(%)								
5-Year	28.3	21.2	31.5	24.9	30.4	26.2	30.3	21.6
14-Year	12.0	3.6	13.3	8.9	15.5	9.8	14.0	4.2
Standard Deviation (p.a.)(%)								
5-Year	15.4	14.0	18.5	17.0	18.7	18.4	17.2	14.3
14-Year	16.4	15.4	17.8	17.9	19.4	19.3	17.5	15.6
Risk-Adjusted Return								
5-Year	1.84	1.51	1.70	1.46	1.63	1.42	1.76	1.51
14-Year	0.73	0.23	0.75	0.50	0.80	0.51	0.80	0.27
Maximum Drawdown (%)								
14-Year	-46.3	-46.4	-42.8	-48.3	-45.8	-47.3	-45.2	-46.6

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Like the S&P 500 Buyback Index, the S&P MidCap 400 Buyback and S&P SmallCap 600 Buyback portfolios had better absolute and risk-adjusted returns when compared to their corresponding dividend yield portfolio in the past 14 years (see Exhibit 16). Over the same period, these buyback portfolios outperformed their respective equal-weighted parent indices by 2.3% and 4.2% per annum, respectively.

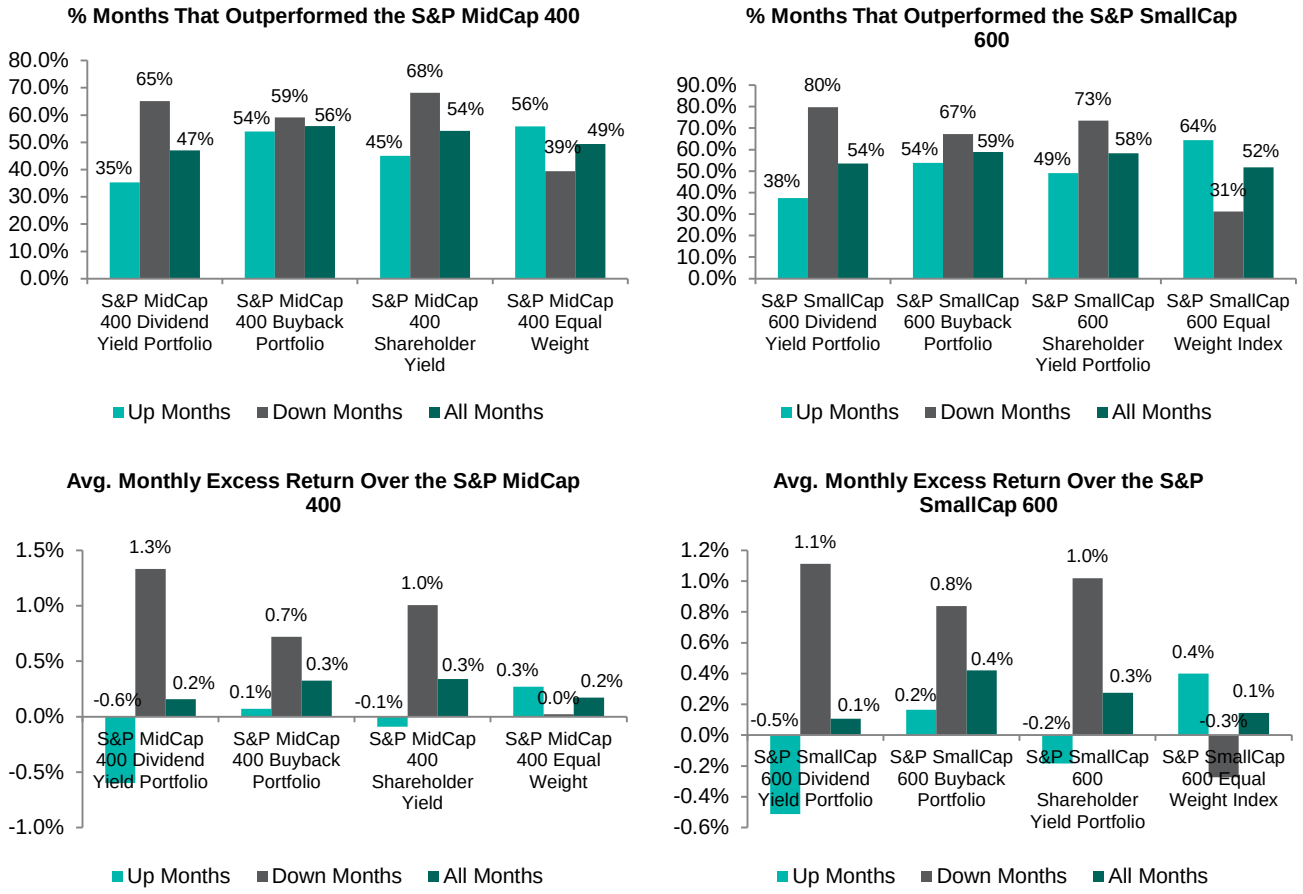
Exhibit 16: Risk/Return Profile of the S&P MidCap 400 and the S&P SmallCap 600 Buyback Portfolios

Time Period	U.S. Mid Cap					U.S. Small Cap				
	S&P MidCap 400 Dividend Yield Portfolio	S&P Midcap 400 Buyback Portfolio	S&P 400 Shareholder Yield Portfolio	S&P MidCap 400	S&P MidCap 400 Equal Weight Index	S&P SmallCap 600 Dividend Yield Portfolio	S&P SmallCap 600 Buyback Portfolio	S&P SmallCap 600 Shareholder Yield Portfolio	S&P SmallCap 600	S&P SmallCap 600 Equal Weight Index
Return (p.a.)(%)										
5-Year	24.3	31.5	30.5	24.9	27.3	25.0	30.4	29.0	26.2	29.8
14-Year	11.3	13.3	13.6	8.9	11.0	11.4	15.5	13.6	9.8	11.2
Standard Deviation (p.a.)(%)										
5-Year	17.5	18.5	18.2	17.0	19.3	18.2	18.7	18.1	18.4	21.5
14-Year	16.8	17.8	17.3	17.9	19.1	18.6	19.4	18.7	19.3	21.4
Risk-Adjusted Return										
5-Year	1.39	1.70	1.67	1.46	1.41	1.37	1.63	1.60	1.42	1.39
14-Year	0.67	0.75	0.78	0.50	0.57	0.61	0.80	0.73	0.51	0.53
Maximum Drawdown (%)										
14-Year	-47.3	-42.8	-44.8	-48.3	-47.4	-48.4	-45.8	-48.5	-47.3	-48.9

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. This graph may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Similar to their large-cap counterpart, the S&P MidCap 400 Buyback and the S&P SmallCap 600 Buyback portfolios had win ratios above 50% and produced positive excess returns in both up and down markets over their parent indices in the past 14 years. The excess returns generated in down markets were larger than the ones produced in up markets. Compared to their corresponding dividend yield portfolios, the S&P MidCap 400 Buyback and the S&P SmallCap 600 Buyback portfolios had more consistent outperformance in both up and down markets, as indicated by more balanced win ratios and average monthly excess returns between up and down markets.

Exhibit 17: Upside and Downside Capture and Average Monthly Excess Return



Source: S&P Dow Jones Indices LLC. Based on monthly returns from March 31, 2000, to March 31, 2014. Charts and graphs are provided for illustrative purposes only. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Like the S&P 500 Buyback Index, both S&P MidCap 400 Buyback and S&P SmallCap 600 Buyback portfolios are value tilted, with a similar degree of significance in the past 14 years that ended March 31, 2014. In contrast, small-cap bias becomes less significant in mid- and small-cap spaces, as equal weighting is less influential among smaller-cap companies. See the style map in Appendix 1 for details.

Buyback Beyond the U.S.: Does it Work for International Equities?

Since buybacks are more dominant in the U.S. than in other nations, it would be interesting to know whether buyback investing works in an international market as well. To this end, we constructed the S&P/TSX Composite Buyback and the S&P Europe 350® Buyback portfolios by selecting the top 50 and 70 stocks with the highest buyback ratios in the trailing 12 months from the S&P/TSX Composite and the S&P Europe 350, respectively. We also constructed the S&P International 700 Buyback portfolio by selecting 30 non-European stocks with the highest buyback ratios from the S&P International 700 and combining them with 70 stocks in the S&P Europe 350 Buyback portfolio. Finally, we combined the constituents in the S&P 500 Buyback Index and the S&P International 700 Buyback portfolio to form the S&P Global 1200 Buyback portfolio. All portfolios used the same weighting methodology and rebalancing schedule as the S&P 500 Buyback Index.

For comparison, the respective international dividend yield and shareholder yield portfolios are constructed in the same way as that of the S&P 500, as shown in the previous section.

Similar to the S&P 500 Buyback Index, these international buyback portfolios outperformed their parent indices in both absolute and risk-adjusted terms, suggesting that buyback investing works as well in international markets

as in U.S. markets. Looking at the performance year-over-year, they all outperformed their parent indices at least 11 out of 14 years from 2000 to 2013, with the S&P Global 1200 Buyback portfolio performing most consistently, and only underperforming in 2007 over the same period.

Exhibit 18: Risk/Return Profile of Other Buyback Indices

Time Period	Canada		Europe		Domestic Market Ex.-U.S.		Global	
	S&P/TSX Composite Buyback Portfolio	S&P/TSX Composite	S&P Europe 350 Buyback Portfolio	S&P Europe 350	S&P International 700 Buyback Portfolio	S&P International 700	S&P Global 1200 Buyback Portfolio	S&P Global 1200
Return (p.a.)(%)								
5-Year	23.4	16.7	21.7	18.2	20.3	16.4	24.6	18.8
14-Year	16.4	7.6	9.5	4.7	10.3	4.3	11.5	3.9
Standard Deviation (p.a.)(%)								
5-Year	18.6	20.2	22.6	20.9	19.2	18.7	16.7	16.0
14-Year	19.3	21.1	20.4	19.7	18.3	18.3	16.7	16.4
Risk-Adjusted Return								
5-Year	1.26	0.83	0.96	0.87	1.06	0.88	1.48	1.18
14-Year	0.85	0.36	0.47	0.24	0.56	0.24	0.69	0.24
Maximum Drawdown (%)								
14-Year	-54.0	-55.6	-55.9	-54.8	-53.3	-53.2	-49.9	-50.1

Source: S&P Dow Jones Indices LLC, Factset. Data as of March 31, 2014. Index performance based on total returns in USD. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

In the following sections, we will mainly look at the Canadian and European markets in more detail, as they are two distinct foreign markets, while the S&P International 700 and the S&P Global 1200 are just the combination of the basic markets we covered.

We compared the Canadian and European buyback portfolios with portfolios of companies that adopted different corporate payout policies in these regions. As shown in Exhibit 19, the S&P/TSX Composite Buyback portfolio outperformed its corresponding dividend yield portfolio in both absolute and relative terms in the past 14 years that ended March 31, 2014. However, the S&P Europe 350 Buyback portfolio had lower absolute returns and risk-adjusted returns than its respective dividend yield portfolio over the same period. Both buyback portfolios had lower risk and smaller maximum drawdowns compared with their corresponding dividend yield portfolios (see Exhibit 19).

Exhibit 19: Risk/Return Profile of S&P/TSX Composite and S&P Europe 350 Buyback Portfolios

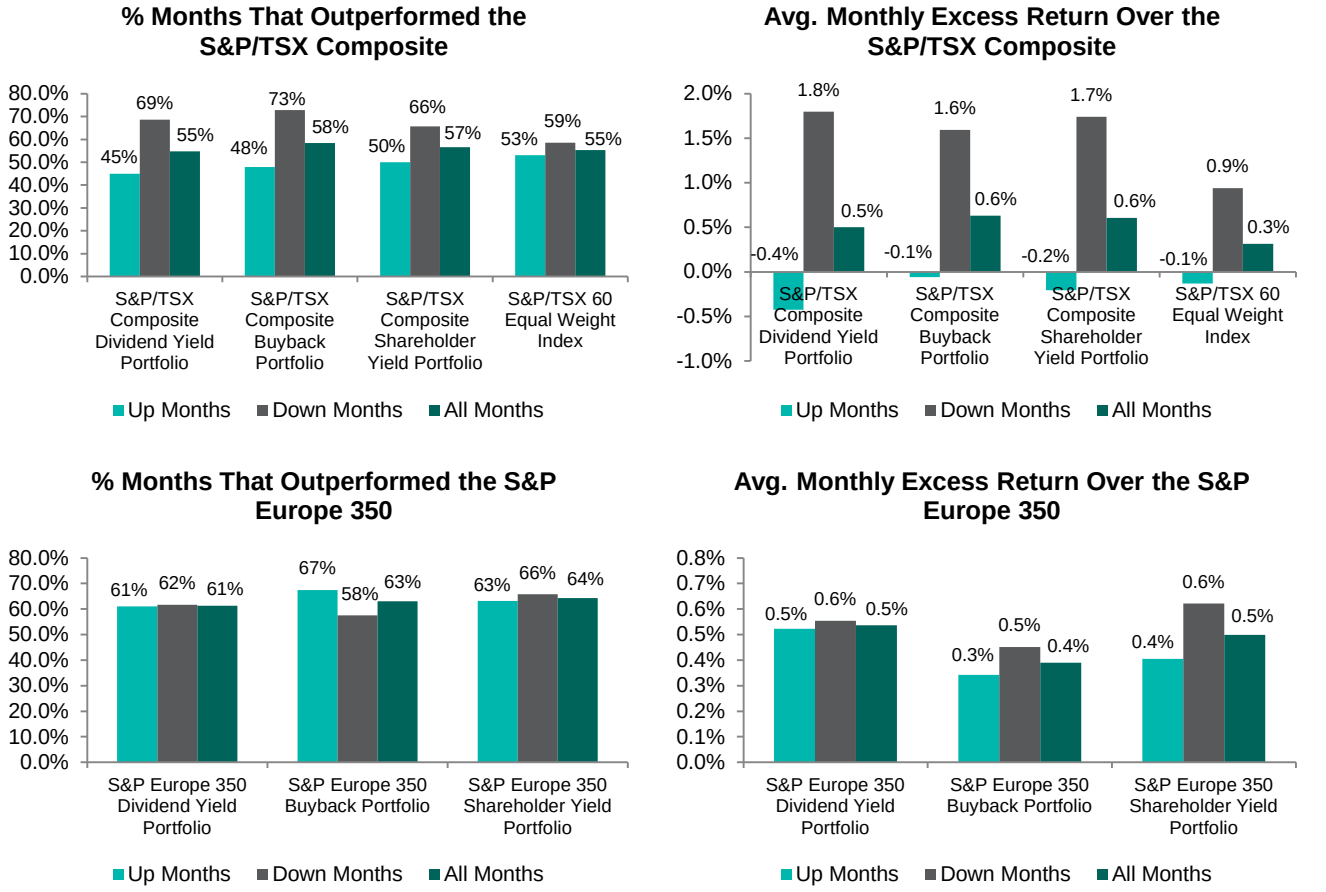
Time Period	S&P/TSX Composite				S&P Europe 350			
	S&P/TSX Composite Dividend Yield Portfolio	S&P/TSX Composite Buyback Portfolio	S&P/TSX Composite Shareholder Yield Portfolio	S&P/TSX Composite	S&P Europe 350 Dividend Yield Portfolio	S&P Europe 350 Buyback Portfolio	S&P Europe 350 Shareholder Yield Portfolio	S&P Europe 350
Return (p.a.)(%)								
5-Year	25.4	23.4	26.9	16.7	25.0	21.7	22.7	18.2
14-Year	14.5	16.4	15.9	7.6	11.3	9.5	10.9	4.7
Standard Deviation (p.a.)(%)								
5-Year	20.6	18.6	19.7	20.2	23.2	22.6	22.7	20.9
14-Year	19.9	19.3	19.9	21.1	21.2	20.4	20.6	19.7
Risk-Adjusted Return								
5-Year	1.23	1.26	1.37	0.83	1.08	0.96	1.00	0.87
14-Year	0.73	0.85	0.80	0.36	0.53	0.47	0.53	0.24
Maximum Drawdown (%)								
14-Year	-56.7	-54.0	-56.0	-55.6	-61.1	-55.9	-58.4	-54.8

Source: S&P Dow Jones Indices LLC, Factset. Data as of March 31, 2014. Index performance based on total returns in USD. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The S&P/TSX Composite Buyback portfolio outperformed in down markets but underperformed in up markets, indicated by the higher win ratio and much higher average monthly excess return in down months. It had a win ratio of less than 50% and negative average monthly excess returns in up months throughout the period tested (see Exhibit 20). Compared to the corresponding dividend yield portfolio, the S&P/TSX Composite buyback portfolio had more balanced excess returns between up and down markets, which is consistent with the case in the U.S. market. In Europe, the S&P Europe 350 Buyback portfolio had a win ratio of more than 50% and positive excess returns in both up and down markets in the past 14 years that ended March 31, 2014. Similar to observations in buyback and dividend yield portfolios in the U.S. and Canada, both the S&P Europe 350 Buyback and Dividend Yield portfolios had higher excess returns in down than in up markets, and the S&P Europe 350 Buyback portfolio had a higher win ratio than its corresponding Dividend Yield portfolio in up markets. However, differing from U.S. and Canadian markets, the S&P Europe 350 Buyback portfolio did not have higher excess returns compared with its Dividend Yield portfolio in up markets.

Like their U.S. counterparts, these two international buyback portfolios are value tilted. See style map in Appendix 1 for details.

Exhibit 20: Upside and Downside Capture for the S&P/TSX Composite and the S&P Europe 350 Buyback Portfolios



Source: S&P Dow Jones Indices LLC. Data is calculated from March 31, 2000, through March 31, 2014. Index performance is based on total returns in USD. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Consistent with their major submarkets, both the S&P International 700 Buyback and the S&P Global 1200 Buyback portfolios had higher average monthly excess returns in down markets than up markets over the past 14 years that ended March 31, 2014. However, the relative outperformance (win ratio and excess returns) of buyback portfolios over dividend portfolios in up markets that was observed in both the U.S. and Canada was only seen in the S&P Global 1200 Buyback portfolio, and it was not held in the S&P International 700 Buyback portfolio (similar to the S&P Europe 350 Buyback portfolio).

The Contribution of Equal Weighting to Excess Returns

To further investigate how equal weighting influences buyback portfolio returns, we compared the equal-weighted buyback portfolios with market cap weighted buyback portfolios using the same portfolio constituents.

As shown in Exhibit 21, over the past 14 years that ended March 31, 2014, all market cap weighted buyback portfolios in the U.S., Canada and Europe gained positive excess returns with slightly lower volatility than their respective parent indices. However, all of them underperformed their respective equal-weighted buyback portfolios, showing that equal weighting enhanced buyback portfolio returns. All market cap weighted buyback portfolios tended to have unfavorable win ratios and excess returns during up market. With equal weighting, win ratios and excess returns of the buyback portfolios were improved during up markets, making their outperformance more balanced between up and down markets. At the same time, equal weighting increased return volatility, which is typical for equal weighting strategies. We also observed that the impact of equal

weighting on excess returns is less significant in the S&P/TSX Composite Buyback portfolio than in the S&P Europe 350 Buyback portfolio, as the S&P/TSX Composite universe is broader than the S&P Europe 350.

Exhibit 21: The Contribution of Equal Weighting in Buyback Portfolios

Portfolio	Return (p.a.) (%)	Standard Deviation (p.a.) (%)	Risk-Adjusted Return	Win Ratio (Up) (%)	Win Ratio (Down) (%)	Avg. Month ER (Up) (%)	Avg. Month ER (Down) (%)
S&P 500							
Equal Weighted	12.0	16.4	0.73	61.5	64.1	0.5	1.0
Market Cap Weighted	6.6	14.9	0.44	46.2	62.5	-0.1	0.7
Benchmark	3.6	15.4	0.23	-	-	-	-
S&P MidCap 400							
Equal Weighted	13.3	17.8	0.75	53.9	59.1	0.1	0.7
Market Cap Weighted	11.4	17.0	0.67	50.0	60.6	-0.1	0.6
Benchmark	8.9	17.9	0.50	-	-	-	-
S&P SmallCap 600							
Equal Weighted	15.5	19.4	0.80	53.8	67.2	0.2	0.8
Market Cap Weighted	14.5	18.0	0.80	51.0	70.3	0.0	0.9
Benchmark	9.8	19.3	0.51	-	-	-	-
S&P/TSX Composite							
Equal Weighted	16.4	19.3	0.85	48.0	72.9	-0.1	1.6
Market Cap Weighted	13.4	19.0	0.71	40.8	71.4	-0.4	1.5
Benchmark	7.6	21.1	0.36	-	-	-	-
S&P Europe 350							
Equal Weighted	9.5	20.4	0.47	67.4	57.5	0.3	0.5
Market Cap Weighted	6.2	18.8	0.33	43.2	58.9	-0.2	0.6
Benchmark	4.7	19.7	0.24	-	-	-	-

Source: S&P Dow Jones Indices LLC. Data is calculated from March 31, 2000, through March 31, 2014. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Market cap weighted buyback portfolios were also value tilted in the past 14 years that ended March 31, 2014, however with less significance when compared to their equal-weighted counterparts in U.S. and European markets (see Appendix 1).

Conclusion

As our results suggest, over a long investment horizon, buyback portfolios generated positive excess returns over their parent indices in the U.S., Canada, Europe and global markets. All of the buyback portfolios tested generated higher average monthly excess returns over their parent indices in down markets than in up markets, no matter which weighting schemes were employed in the portfolio construction.

The equal weighting method employed in the construction of buyback indices enhances the index performance in terms of win ratios and excess returns in up markets, making the outperformance of buyback indices more balanced in both up and down markets. However, the equal weighting method also boosted the index volatility. In comparison, the market cap weighted buyback indices tended to have lower volatility than their parent indices. The impact of equal weighting is more significant in the large-cap space than in mid- and small-cap spaces.

Style analysis indicates both equally weighted and market cap weighted buyback portfolios are value tilted in the past 14 years that ended March 31, 2014. The overlay of equal weighting may enhance the value tilt and give the portfolios an extra small-cap bias, especially in the large-cap space.

Compared with dividend investing, buyback investing strategy has several unique features if both employ an equal weighting method. Buyback portfolios tend to have lower dividend yields and most of their outperformance comes from capital gain instead of dividend income, which is a significant contrast with dividend yield portfolios. In the U.S. and Canada, buyback portfolios have tended to have more balanced win ratios or excess returns in both up and down markets, which could be a good complement to defensive approaches such as dividend and low volatility strategies.

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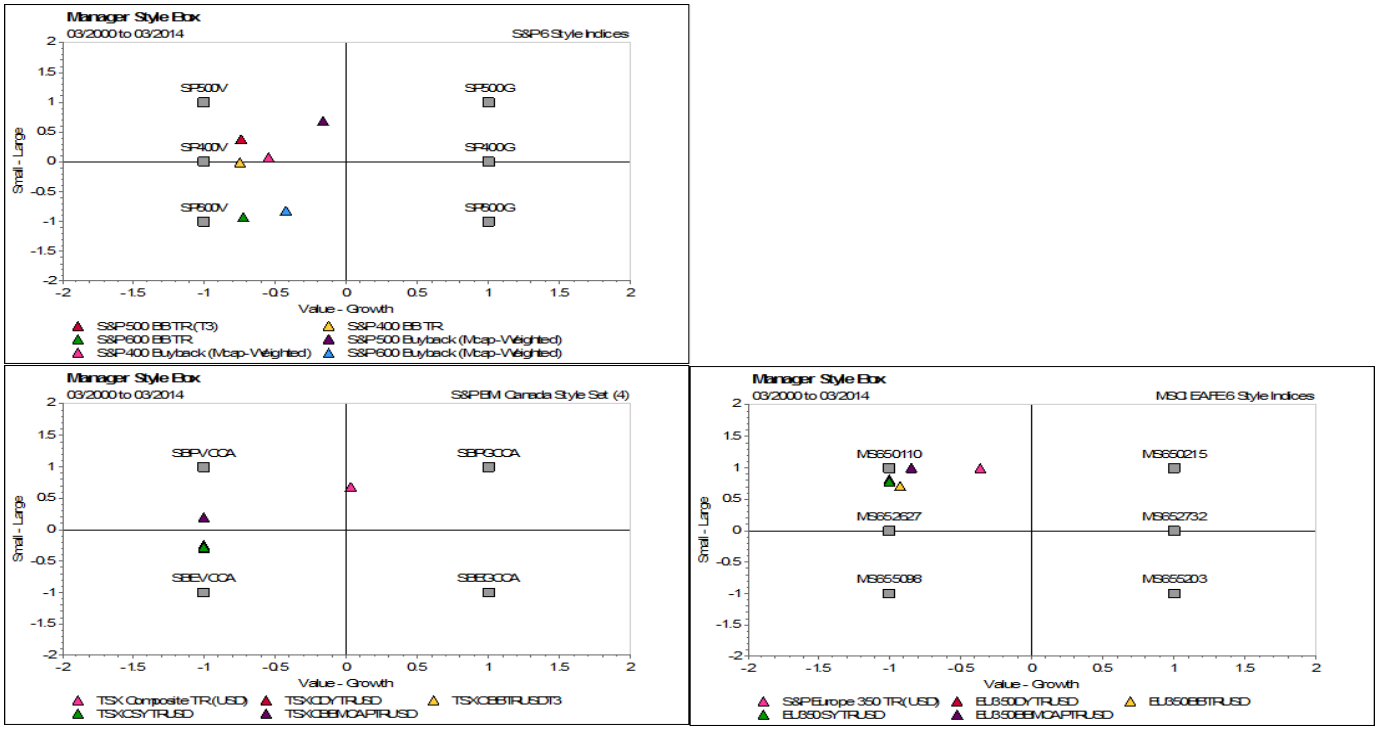
Appendix 1: Style Map for Buyback Portfolios



Source: S&P Dow Jones Indices LLC, Factset. Data calculated from March 31, 2000, through March 31, 2014 on Factset SP2 platform. S&P BMI Canada 4 Style Set and MSCI EAFE 6 Style Set are used for S&P/TSX Composite Buyback portfolio and the S&P Europe 350 Buyback portfolio. In the left bottom graph, TSXC BBand TSXC SY are overlapped. In the right bottom graph, EU350DY and EU350SY are overlapped.

Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs reflects hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

ABOUT S&P DOW JONES INDICES

S&P Dow Jones Indices LLC, a part of McGraw Hill Financial, Inc., is the world's largest, global resource for index-based concepts, data and research. Home to iconic financial market indicators, such as the S&P 500® and the Dow Jones Industrial Average™, S&P Dow Jones Indices LLC has over 115 years of experience constructing innovative and transparent solutions that fulfill the needs of institutional and retail investors. More assets are invested in products based upon our indices than any other provider in the world. With over 830,000 indices covering a wide range of assets classes across the globe, S&P Dow Jones Indices LLC defines the way investors measure and trade the markets. To learn more about our company, please visit www.spdji.com.

PERFORMANCE DISCLOSURES

The S&P 500 Buyback Index (the "Index") was launched on May 14, 2013. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com. It is not possible to invest directly in an index.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indicates introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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