

SSgA CAPITAL INSIGHTS

VIEWPOINTS

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'Tis the Season: An Opportune Time for Investing in Small Cap Stocks



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As investors' appetites for risk increase, small cap stocks occupy a particularly attractive space within the equities landscape, meaningfully outperforming large cap stocks in both Europe and the United States. For example, on a year-to-date basis through October 2013, the Russell 2000 Index of small cap stocks outperformed the S&P 500 Index by more than 500 basis points; and in Europe the MSCI Small Cap Stock Index outperformed its large cap brethren by more than 1,000 basis points (in USD). The strong performance of smaller capitalization companies is not surprising and is quite consistent with the historical track records for these stocks. The "Small Firm Effect" or "Size Effect" has been well documented in academic literature dating back more than 30 years [for example, see Banz (1981)¹ and Reinganum (1981)].² However, for investors that are considering increasing their allocations to small cap stocks, the turn-of-the-year period is a particularly attractive time to act, so as to capture the "January Effect" [for example, see Keim (1983)].³

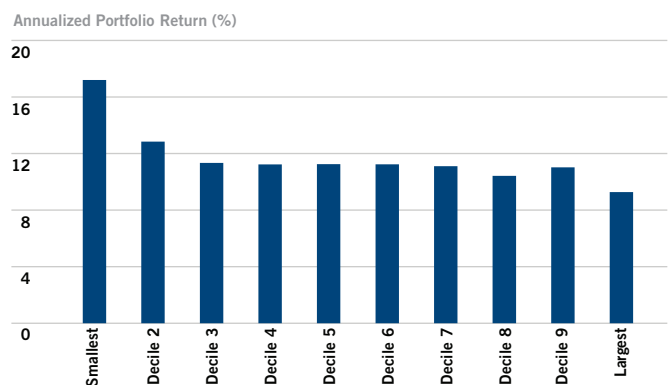
The "January Effect" in this context is the empirical observation that the relative performance between small market capitalization stocks and large market capitalization stocks includes a substantial seasonal component. That is, the outperformance, or return differential, between small cap and large cap stocks is not constant across the year. Rather, the return differential in January is significantly greater than in any other calendar month. While some of the pioneering work in the field was done 30 years ago, the evidence suggests that the findings are as relevant today, with applicability in both US and European equity markets. Let's begin the analysis using US equity market data since its availability goes back to 1926, by far the longest time series of granular stock market returns.

US Small Market Cap Outperformance, 1926–2013

To measure the returns of stocks with different market caps, we use cap-based portfolios created by the University of Chicago Center for Research in Security Prices (CRSP). The CRSP universe includes all common stocks that trade on the NYSE, NYSE MKT and the NASDAQ. On a quarterly basis, all NYSE stocks are ranked into decile portfolios with an equal number of stocks. The market cap breakpoints for these stocks are used to classify all the stocks into ten portfolios; the methodology ensures that the smallest cap portfolio is not completely skewed by tiny NASDAQ companies. The composition of each market cap decile portfolio is updated quarterly, and the returns of each portfolio are calculated monthly.

Figure 1 plots the average annualized returns of the ten US Market Cap Decile Portfolios as calculated by CRSP over the period from January 1926 through September 2013. The smallest market cap portfolio earned 17.2% on an annualized basis. In contrast, the largest market cap portfolio returned an average of about 9.2% over the same period—an annual difference of about 8% per year. Furthermore, this relationship has been reasonably stable over time. Since 1980, after the period of the initial studies, the smallest market cap portfolio outperformed the largest market cap portfolio by more than 7% on average. Figure 1 also illustrates that strong returns are not just concentrated in the very smallest market cap

Figure 1: Annualized Returns of US Market Cap Portfolios Jan 1926–Sep 2013



Source: University of Chicago Center for Research in Security Prices, SSgA
 Past performance is not a guarantee of future results.

portfolio. The decile 2 market cap portfolio earned nearly 13% on an annualized basis, and the decile 3 portfolio earned about 200 basis points more per annum than the largest cap stocks.

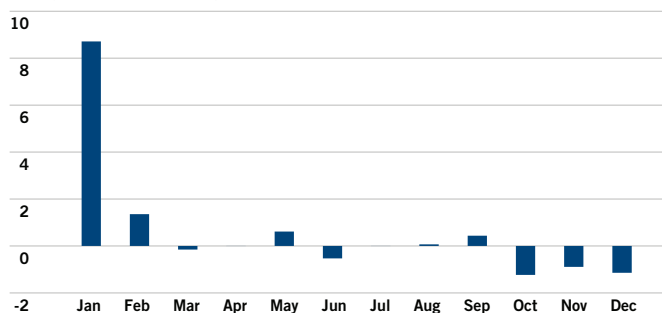
The “January Effect,” 1926–2013

To illustrate the “January Effect” over the entire time period, let’s create somewhat larger groups of securities—quintile portfolios rather than decile ones. That is, combine the smallest two market cap decile portfolios (market cap weighting the returns of the two portfolios) into the smallest market cap quintile portfolio. The same process is repeated for the largest two market cap decile portfolios to create the largest market cap quintile portfolio. Each month the difference in returns between the smallest and largest market cap quintile portfolios is calculated; that is, the monthly return of the largest cap quintile portfolio is subtracted from the monthly return of the smallest cap quintile portfolio. The next step is to compute the arithmetic average of this monthly differential return for each calendar month.

Figure 2 plots the average difference in returns between the smallest and largest market cap quintiles of US stocks by calendar month. January sticks out like a “sore thumb.” The average performance of small cap stocks in January dwarfs that of large cap stocks compared to the differences in any other month. Small cap stocks tend to do quite well in February relative to large cap stocks, but the magnitude of outperformance is not nearly as large as it is in January. Indeed, the first quarter of the calendar year turns out well for small cap stocks relative to large cap stocks. In contrast, small caps stocks tend to exhibit weakness in the fourth quarter of a calendar year when measured against large cap stocks. Of course, these are average results over a period spanning nearly 88 years. It is reasonable to question whether the outperformance is driven primarily by the early years.

Figure 2: Avg. Arithmetic Difference Between Smallest and Largest Quintiles of US Stocks by Month, Jan 1926–Sep 2013

Average Difference in Monthly Returns (%)



Source: University of Chicago Center for Research in Security Prices, SSgA
Past performance is not a guarantee of future results.
The calculation method for value added returns may show rounding differences.

Variability in the “January Effect”

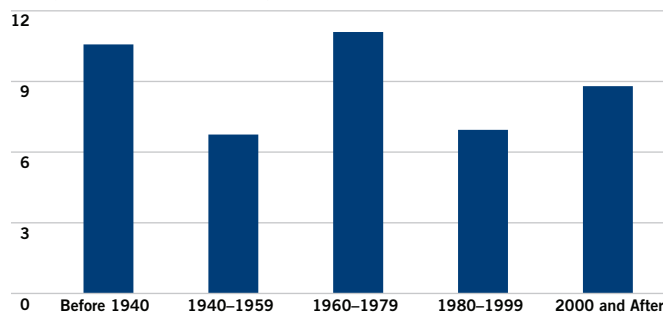
I divide the period from 1926 to 2013 into five sub-periods: a) Before 1940; b) 1940–1959; c) 1960–1979; d) 1980–1999; and e) 2000 and after. The first three sub-periods (a, b, c) contain data that were known and available when much of the original research on the “January Effect” was performed; the last two sub-periods (d, e) are essentially “out-of-sample” tests of these original studies.

Figure 3 focuses just on the difference in returns between the smallest and the largest market cap quintile stocks in the month of January. The “January Effect” is most pronounced in the 1960–1979 time period and the years before 1940 are almost as dramatic. In the 1960–1979 time period, the average arithmetic difference in returns between the smallest and largest market cap quintile stocks is 11.1%. Let me emphasize that this number is *not* annualized; small cap stocks on average outperformed large cap stocks by more than 1100 basis points during the month of January in this period. Even during the weakest “January Effect” sub-period from 1940–1959, small market cap quintile stocks outperformed the large ones by about 675 basis points on average in the twenty Januaries of this timeframe.

This chart also demonstrates that the “January Effect” persists outside the period of its initial discovery. For example, in the fourteen years starting in 2000, the small market cap quintile outperformed the large market cap quintile by about 880 basis points on average in January, and in the 1980s and 1990s this average difference was almost 700 basis points. Clearly, the relative attractiveness of small cap stocks compared to large cap stocks is particularly pronounced in January, regardless of the sub-period.

Figure 3: Avg. Return Difference in January Between Smallest and Largest Market Cap Quintile US Stocks in Different Periods

Average Return Difference in January (%)



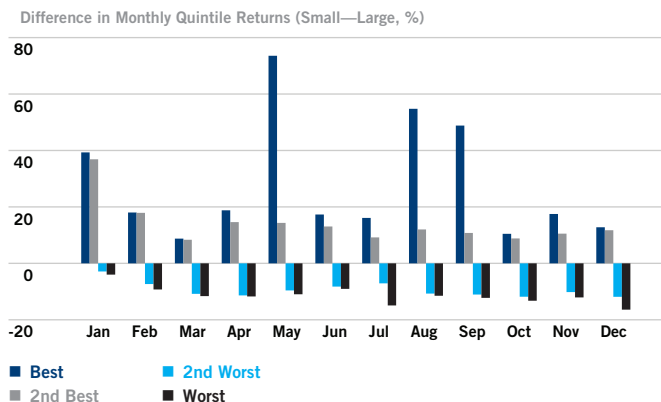
Source: University of Chicago Center for Research in Security Prices, SSgA
Past performance is not a guarantee of future results.

Extreme Monthly Differences

While the evidence in Figure 3 suggests reasonable stability in the “January effect”, it is important to understand whether extreme outcomes mask any important deviations from the averages. In particular, we want to understand whether a very unfavorable January outcome might alter one’s perception of the “January Effect.” That is, are there instances when large cap stocks substantially outperform small cap stocks in January?

Figure 4 charts, by month, the most extreme differences in monthly returns between the smallest and largest market cap quintile portfolios over the period from 1926 to 2013. In this chart, the two best monthly differential returns are plotted along with the two most unfavorable monthly differences. Perhaps surprisingly, the three best months for small cap stocks relative to large cap stocks were non-January months: May 1933, August 1932 and September 1939—all during the very turbulent 1930s. The best January for small cap stocks (3,900 basis points better than large cap) was also in the 1930s—1934 in particular. But the next best January for small cap stocks was in 2001 (3,700 basis points better than large cap) and the third best January for small cap stocks, which is not plotted, was in 1992 (2,900 basis points ahead of large cap). This analysis highlights that the strong January performance of small cap relative to large cap is not strictly concentrated in the early sample years, but rather even the extreme positive moves are spread out over the decades.

Figure 4: Extreme Differences Between Smallest and Largest Quintiles of US Stocks by Month, Jan 1926–Sep 2013



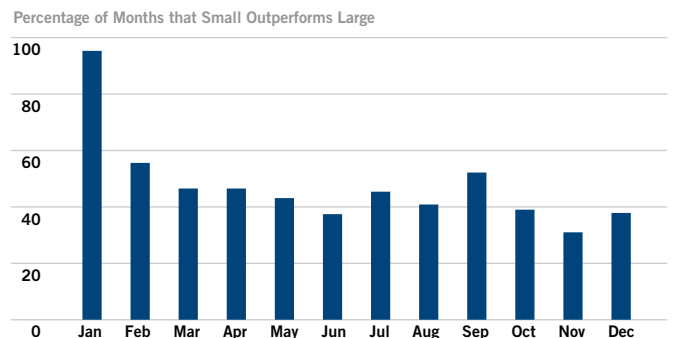
Source: University of Chicago Center for Research in Security Prices, SSgA
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But what happens to performance during the “reversal” periods when large caps beat small caps? This occurs sometimes in each calendar month, even January, as the worst performance bars on Figure 4 illustrate. Interestingly, the worst “reversal” bars in January are much closer to zero than for any other calendar month. That is, even in those calendar years that the “January Effect” does not work, the downside is very limited. The worst two Januaries for small cap stocks relative to large cap stocks occurred in 1929 and 1939, when small cap stocks underperformed large cap stocks by -398 basis points and -287 basis points, respectively. Januaries have smaller magnitude “reversals” than any other calendar month.

The Consistency of Small Cap Outperformance in January

Another way to measure consistency is to calculate “hit rates”—the frequency with which the smallest market cap quintile portfolio outperforms the largest market cap quintile portfolio. Figure 5 plots these hit rates by calendar month. The positive hit rates in January again dwarf those of all other months. The smallest market cap quintile portfolio outperforms the largest market cap quintile portfolio 95 percent of the time. Indeed, since 1987, the “January Effect” has not experienced a reversal. February and September are the two months with the next highest positive hit rates, about 56% and 52%, respectively. In short, no matter how you cut the data, the “January Effect” is an amazingly consistent empirical regularity.

Figure 5: Positive Hit Rates for Smallest Outperforming Largest Quintile of Market Cap US Stocks by Month, Jan 1926–Sep 2013



Source: University of Chicago Center for Research in Security Prices, SSgA
Past performance is not a guarantee of future results.

Similar Patterns in Europe

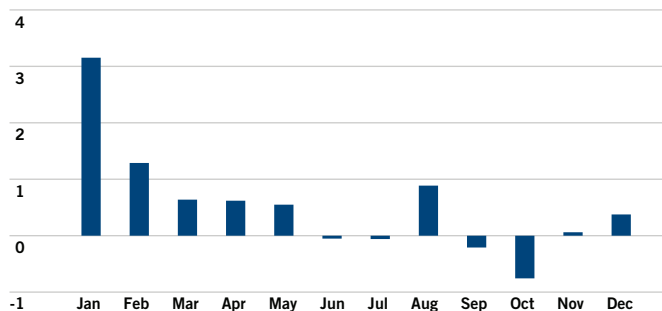
Data from the US are often used in the academic studies of the “January Effect” because they extend back to 1926 in great detail. Thus these data offer insights over long time horizons and with great granularity. Nonetheless, from the more limited, less granular data available on European equities, a similar pattern of January returns emerges. For European equities, our small cap proxy is the MSCI Europe Small Cap Index (as opposed to the smallest market cap quintile portfolio) and the large cap proxy is the regular MSCI Europe Index. These indexes may not be ideal measures with which to monitor the “January Effect,” but they offer a good glimpse into the directionality of the effect. While the total returns (in USD) for these indexes can be calculated starting with February 1995, the analysis reported in this paper will be limited to the period since 2000, for comparability with results from the US in this sub-period (Note: the interpretations would not meaningfully differ with the extra few years).

Figure 6 plots the average difference in total returns (USD based) between the MSCI European Small Cap Index and the MSCI European Index, respectively, in each calendar month. As in the US data, there is a very pronounced difference in returns for the month of January, a month in which the MSCI European Small Cap Index outperformed the MSCI European index by more than 300 basis points on average. Similar to the US data, February is the second best month for European small cap stocks relative to European large cap stocks. Indeed, these average results suggest that the first five months of the year particularly smile on small cap stocks in Europe.

A quick glance at the difference in returns between the MSCI Europe Small Cap and the MSCI Europe indexes (Figure 7)

Figure 6: Return Differential Between MSCI Europe Small Cap and MSCI Europe (Large Cap) Indexes by Month, Jan 2000–Sep 2013

Average Difference in Monthly Total Returns (%—USD)



Source: MSCI, Bloomberg, SSgA

Past performance is not a guarantee of future results.

The index returns are unmanaged and do not reflect the deduction of any fees or expenses. The index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.

reveals that the most extreme difference in returns occurred in January 2000, when small caps outperformed large caps by more than 900 basis points. In contrast, the worst reversal for the “January Effect” in Europe occurred in January 2011, when the MSCI Europe Small Cap index underperformed the MSCI Europe index by about 240 basis points. The extremes plotted in Figure 7 corroborate that the “January Effect” in Europe, while not without exception, is persistent in general. Indeed, the positive hit rates for the “January Effect” in Europe are about 85% since 2000. The next two best months are February and March, with positive hit rates of 64% and 71%, respectively.

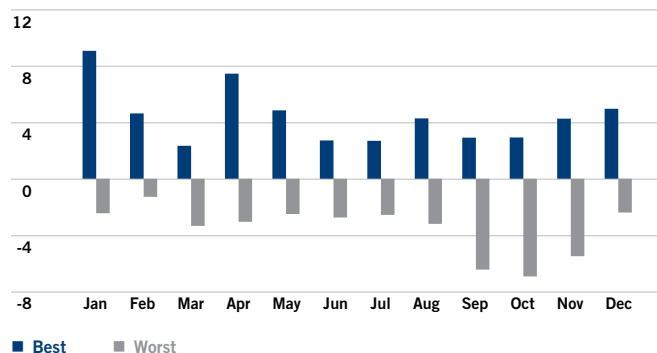
One final observation is that the rank correlation of the differential monthly returns between small cap and large cap in Europe with the differential monthly returns between small cap and large cap in the US is about 0.75 since 2000. While not perfectly correlated, this strongly suggests that both effects share many common economic drivers, and that many of the lessons and insights from the longer US historical record are likely to be applicable to Europe as well.

Potential Economic Intuition for the “January Effect”

While the long-term premium that small cap stocks earn over large cap stocks seems to be widely accepted, the empirical observation that there is a seasonal component to this premium may seem a bit puzzling. Of course, there is no inherent reason why risk premia need to be constant over time, and indeed much has been written about time-varying expected returns in the academic literature. Nonetheless, even though seasonality in equity returns was noted more than 70 years ago [Wachtel (1942)],⁴ what economic behaviors might account for variation in the premium surrounding the calendar turn-of-the-year?

Figure 7: Extreme Differences in Total Returns Between MSCI Europe Small Cap and MSCI Europe Indexes by Month, Jan 2000–Sep 2013

Difference in Monthly Returns (Small—Large, %)



Source: MSCI, Bloomberg, SSgA

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Perhaps the most popular explanation for the “January Effect” is related to tax-loss selling. Toward the end of a calendar year, individuals may have an incentive to sell stocks with losses for tax reasons. Small cap stocks (by construction) tend to be low-priced stocks and may contain many more losers than large cap stocks. Furthermore, the marginal investor in small cap stocks may more likely be a taxable individual. In contrast, the marginal investor in large cap stocks may more likely be a non-taxable institution or fund. Thus, toward the end of a calendar year, “selling pressure” is exerted on small cap stocks for tax reasons, temporarily depressing prices. In January, the pressure is removed and prices rebound. Empirically, this partially explains the “January Effect.”

A related, but slightly different, twist is a “window dressing” argument for the “January Effect.” Under this scenario, institutional investors sell their unattractive stocks with losses to make their holdings look more attractive for year-end reporting (and stocks with losses tend to be smaller cap by definition). As with tax-loss selling, this particularly depresses the prices of smaller cap stocks at year-end and the January bounce ensues. Of course, both the window dressing and tax-loss selling stories require cooperation from market microstructure in terms of bid-ask bounces, low prices, trading volumes and liquidity.

A risk-based argument for seasonality has also been proposed. In particular, many firms’ fiscal year-ends coincide with December. Investors know that shortly thereafter the annual accounting reports will be released. There is greater uncertainty

about the “true” economic performance of firms during the turn of the year period, an uncertainty that is resolved on releases of the annual report. Furthermore, there is more uncertainty regarding small cap firms as these firms tend to be more neglected by analysts. Under this reasoning, the unusual premium for small cap stocks in January is the rational reward for investors in small cap stocks bearing higher informational risk. Additionally perhaps, at the turn-of-the-year there is a higher probability of trading against informed insiders.

Whatever the economic rationale, and even if we still do not fully understand the nature of this seasonality, the empirical evidence is compelling and cannot be ignored.

Investment Implications and Actions

The turn of the year is particularly attractive in terms of the return potential of small cap stocks relative to large cap stocks. For most of our clients, we are not recommending a position that tries to arbitrage the returns between small cap and large cap stocks. However, for clients that intend to allocate to small cap stocks because of their longer term return and risk profiles, history suggests that the next several months represent a particularly opportune entry point.

¹ Banz, R., 1981, The relationship between earnings yield, market value, and return for NYSE common stocks, *Journal of Financial Economics* 9, 3–18.

² Reinganum, M., 1981, Misspecification of capital asset pricing: Empirical anomalies based on earnings yields and market values, *Journal of Financial Economics* 9, 19–46.

³ Keim, D., 1983, Size-Related Anomalies and Stock Return Seasonality: Further Empirical Evidence, *Journal of Financial Economics* 12, 13–32.

⁴ Wachtel, S., 1942, Certain Observations on Seasonal Movements in Stock Prices, *Journal of Business* 15, 184–193.

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